

2018–19 Major Projects Report

Department of Defence

© Commonwealth of Australia 2019

ISSN 1036–7632 (Print)

ISSN 2203–0352 (Online)

ISBN 978-1-76033-510-6 (Print)

ISBN 978-1-76033-511-3 (Online)

Except for the content in this document supplied by third parties, the Australian National Audit Office logo, the Commonwealth Coat of Arms, and any material protected by a trade mark, this document is licensed by the Australian National Audit Office for use under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 Australia licence. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/3.0/au/>.

You are free to copy and communicate the document in its current form for non-commercial purposes, as long as you attribute the document to the Australian National Audit Office and abide by the other licence terms. You may not alter or adapt the work in any way.

Permission to use material for which the copyright is owned by a third party must be sought from the relevant copyright owner. As far as practicable, such material will be clearly labelled.

For terms of use of the Commonwealth Coat of Arms, visit the *It's an Honour* website at <https://www.pmc.gov.au/government/its-honour>.

Requests and inquiries concerning reproduction and rights should be addressed to:

Senior Executive Director
Corporate Management Branch
Australian National Audit Office
19 National Circuit
BARTON ACT 2600

Or via email:

communication@anao.gov.au.



Canberra ACT
16 December 2019

Dear Mr President
Dear Mr Speaker

In accordance with the authority contained in the *Auditor-General Act 1997*, I have undertaken a review of the status of selected major Defence equipment acquisition projects, as at 30 June 2019, as presented by the Department of Defence. The report is titled *2018–19 Major Projects Report*. Pursuant to Senate Standing Order 166 relating to the presentation of documents when the Senate is not sitting, I present the report of this audit to the Parliament.

Following its presentation and receipt, the report will be placed on the Australian National Audit Office's website — <http://www.anao.gov.au>.

Yours sincerely



Grant Hehir
Auditor-General

The Honourable the President of the Senate
The Honourable the Speaker of the House of Representatives
Parliament House
Canberra ACT

AUDITING FOR AUSTRALIA

The Auditor-General is head of the Australian National Audit Office (ANAO). The ANAO assists the Auditor-General to carry out his duties under the *Auditor-General Act 1997* to undertake performance audits, financial statement audits and assurance reviews of Commonwealth public sector bodies and to provide independent reports and advice for the Parliament, the Australian Government and the community. The aim is to improve Commonwealth public sector administration and accountability.

For further information contact:

**Australian National Audit Office
GPO Box 707
Canberra ACT 2601**

Phone: (02) 6203 7300

Fax: (02) 6203 7777

Email: ag1@anao.gov.au

Auditor-General reports and information about the ANAO are available on our website:

<http://www.anao.gov.au>

Assurance Review Team

Michelle Page	Dr Richard Grant
Erica Welton	Philip Rebula
Anora Harris	Wira Wibowo
Sean Neubeck	Sara Casey
Isabelle Patterson	Akshath Kale
Robyn Kemp	Jocelyn Watts

Contents

Australian National Audit Office

Glossary	viii
Part 1. ANAO Review and Analysis	1
Summary and Review Conclusion.....	3
About the Major Projects Report.....	3
Major Projects selected for review	4
Report objective and scope	6
Review methodology.....	7
Report structure	7
Overall outcomes	9
Statement by the Secretary of Defence	9
Conclusion by the Auditor-General	10
ANAO's analysis of project performance	10
Cost.....	12
Schedule	13
Capability	16
1. The Major Projects Review.....	19
Review scope and approach.....	19
Review methodology.....	20
Acquisition governance.....	21
Results of the review.....	26
2. Analysis of Projects' Performance	35
Project performance analysis by the ANAO.....	35
Cost performance analysis.....	37
Budget Expended and Project Maturity	37
Second Pass Approval and 30 June 2019 approved budget	39
Budget performance	46
Schedule performance analysis	50
Time Elapsed and Project Maturity	50
Schedule slippage and acquisition type by approval date	52
Schedule performance	56
Capability performance analysis	62
Modified method of capability reporting	64
Capability Delivery Progress and Project Maturity.....	64

Department of Defence

Part 2. Defence Major Projects Report.....	67
Secretary's Foreword	69
Purpose of the Major Projects Report	72
Reporting Framework	72
First Principles Review Framework	73
Major Projects Report – Current situation	74
Adaptive nature of the Integrated Investment Program.....	75
Is a Review of the Process Required?	76
Defence Strategic Environment.....	77
Force Structure Plan 2019.....	77
Overview of MPR Projects.....	78
Key achievements	79
Entry to and exit from the 2018–19 Major Projects Report.....	79
Defence's review of project performance	80
Cost	80
Understanding Budget Variation.....	81
In-Year Cost.....	85
Project Progress.....	87
Contingency Management.....	88
Schedule.....	89
Schedule Variation in context	92
Materiel scope and capability	94
Acquisition Governance.....	95
Smart Buyer.....	95
Defence Independent Assurance Reviews.....	96
Agreements	97
Performance Management.....	98
Quarterly Performance Report	98
Projects of Interest.....	99
Projects of Concern.....	100
Improvement Initiatives.....	101
Risk Reform.....	101
Project Maturity Scores	102
System Program Office Reform.....	102
Improved Contract Management.....	103
Australian Industry Capability (AIC).....	103
Appendices.....	107
Appendix 1: List of projects removed from the Major Projects Report since its inception.....	108
Appendix 2: Lessons learned	110
Appendix 3: Acquisition categories.....	112
Appendix 4: Project Maturity.....	114
Appendix 5: Capability Life Cycle	118
Appendix 6: Glossary	120

Project Data Summary Sheets

Part 3. Assurance by the Auditor-General and the Secretary of Defence123

Independent Assurance Report by the Auditor-General125

Statement by the Secretary of Defence.....127

Project Data Summary Sheets131

2018–19 Major Projects Report Guidelines

Part 4. JCPAA 2018–19 Major Projects Report Guidelines399

Glossary

First Pass Approval	(if required) is the Government decision to select a specific option(s) and proceed with agreed timeframes, technical requirements and financial commitments to Second Pass Approval.
Initial Materiel Release (IMR)	is a milestone that marks the completion and initial release of Acquisition Project supplies required to support the achievement of Initial Operational Capability.
Initial Operational Capability (IOC)	is the capability state relating to the in-service realisation of the first subset of a capability system that can be employed operationally. Declaration of initial operating capability is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group(s) that the fundamental inputs to capability have been delivered.
Second Pass Approval	is the Government decision to acquire a fully defined and costed capability.
Final Materiel Release (FMR)	is a milestone that marks the completion and final release of Acquisition Project supplies required to support the achievement of Final Operational Capability.
Final Operational Capability (FOC)	is the capability state relating to the in-service realisation of the final subset of a capability system that can be employed operationally. Declaration of final operating capability is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group(s) that the fundamental inputs to capability have been delivered.

Part 1. ANAO Review and Analysis

Summary and Review Conclusion

About the Major Projects Report

1. Major Defence equipment acquisition projects (Major Projects) continue to be the subject of parliamentary and public interest. This is due to their high cost and contribution to national security, and the challenges involved in completing them within the specified budget and schedule, and to the required capability.
2. The Australian National Audit Office (ANAO) has reviewed 26 of Defence's Major Projects in this twelfth annual report (2017–18: 26). The Major Projects Report (MPR) reviews overall issues, risks, challenges and complexities affecting Major Projects and also reviews the status of each of the selected Major Projects, in terms of cost, schedule and forecast capability.¹ The objective of the report is 'to improve the accountability and transparency of Defence acquisitions for the benefit of Parliament and other stakeholders.'²
3. The Capability Acquisition and Sustainment Group (CASG) within the Department of Defence (Defence), manages the process of bringing new capabilities into service.³ As at 30 June 2019, Defence was managing 205 active major and minor capital equipment projects worth \$132 billion, with an in-year budget of \$8.6 billion.⁴ Defence capitalised some \$8.6 billion from these projects in 2018–19.⁵
4. The February 2016 *Defence White Paper* established the Australian Government's priorities for future capability investment for the next 20 years and provided for additional spending of over \$29 billion across the next decade. The 2019–20 Defence Portfolio Budget Statements indicated that the Defence budget would grow to approximately \$200 billion over the coming decade, for investing in Defence capability.⁶ The Government commenced its \$89 billion investment in Australia's future shipbuilding industry in April 2017⁷, and on 29 June 2018 announced Second Pass Approval⁸ of the \$35 billion Future Frigate program.⁹ Further, on

1 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), Executive Summary, p. 1.

2 *ibid.*

3 Defence states that CASG 'purchases and maintains military equipment and supplies in the quantities and to the service levels that are required by Defence and approved by Government'. Department of Defence, *About CASG [Internet]*, Defence, available from <http://www.defence.gov.au/casg/AboutCASG/> [accessed 30 October 2019].

4 Department of Defence, *Defence Annual Report 2018–19*, Defence, Canberra, 2019, Chapter 3, Annual Performance Statements, p. 34.

5 *ibid.*, Appendix A: Financial Statements, p. 176.

6 Department of Defence, *Defence Portfolio Budget Statements 2019–20*, Defence, Canberra, 2019, p. 5.

7 Department of Defence, *Naval Shipbuilding Plan*, Defence, Canberra, 2017, p. 11. See also Auditor-General Report No.39 2017–18 *Naval Construction Programs—Mobilisation*.

8 Second pass approval is the Government decision to acquire a fully defined and costed capability. See Defence's Appendix 5 in **Part 2** of this report.

9 M Turnbull (Prime Minister), C Pyne (Minister for Defence Industry), M Payne (Minister for Defence), M Cormann (Minister for Finance), 'The Hunter Class – defending Australia and securing our shipbuilding sovereignty', media release, Parliament House, Canberra, 29 June 2018.

11 February 2019, the Government announced the signing of the Strategic Partnership Agreement¹⁰ for the \$50 billion Future Submarine program.¹¹

Major Projects selected for review

5. Major Projects are selected for review based on the criteria included in the *2018–19 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit (JCPAA).¹² They represent a selection of the most significant Major Projects managed by Defence.

6. The total approved budget for the Major Projects included in this report is approximately \$64.1 billion, covering 49 per cent of the total budget of active major and minor capital equipment projects of \$132 billion.¹³ The selected projects are listed in Table 1.

-
- 10 S Morrison (Prime Minister), C Pyne (Minister for Defence), S Ciobo (Minister for Defence Industry), 'Government Delivers on Future Submarine Program', media release, Parliament House, Canberra, 11 February 2019.
- 11 The Future Submarines Design Acquisition (SEA 1000 Phase 1B) and Future Frigates (SEA 5000 Phase 1) projects will be included in the 2019–20 MPR as per the Guidelines endorsed by the JCPAA on 23 September 2019. A performance audit, *Future Submarine – transition to design* is currently underway by the ANAO, with an expected tabling date of December 2019.
- 12 The *2018–19 Major Projects Report Guidelines* were endorsed by the JCPAA in September 2018 and are included in **Part 4** of this report.
- 13 Department of Defence, *Defence Annual Report 2018–19*, Defence, Canberra, Chapter 3, Annual Performance Statements, 2019, p. 34.

Table 1: 2018–19 MPR projects and approved budgets at 30 June 2019^{1, 2}

Project Number (Defence Capability Plan)	Project Name (on Defence advice)	Abbreviation (on Defence advice)	Approved Budget \$m
AIR 6000 Phase 2A/2B	New Air Combat Capability ³	Joint Strike Fighter	16,522.6
SEA 4000 Phase 3	Air Warfare Destroyer Build ³	AWD Ships	9103.7
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System	P-8A Poseidon	5375.7
AIR 9000 Phase 2/4/6	Multi-Role Helicopter ³	MRH90 Helicopters	3771.1
SEA 1180 Phase 1	Offshore Patrol Vessel ³	Offshore Patrol Vessel	3724.3
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	3510.3
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers ³	Overlander Medium/Heavy	3399.9
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk	3212.5
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships	3092.2
LAND 121 Phase 4	Protected Mobility Vehicle – Light (PMV-L) ³	Hawkei	1979.6
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement ³	Battlefield Airlifter	1442.1
SEA 1654 Phase 3	Maritime Operational Support Capability	Repl Replenishment Ships	1070.6
AIR 5431 Phase 3	Civil Military Air Management System ³	CMATS	975.8
JP 2072 Phase 2B	Battlespace Communications System Phase 2B	Battle Comm. Sys. (Land) 2B	942.6
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	894.3
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B	678.7
SEA 1439 Phase 5B2	Collins Class Communications and Electronic Warfare Improvement Program	Collins Comms and EW	607.8
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	Pacific Patrol Boat Repl	504.0
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS	481.6
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability ⁴	Collins R&S	445.3
LAND 53 Phase 1BR	Night Fighting Equipment Replacement	Night Fighting Equip Repl	442.6
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	440.0
JP 2072 Phase 2A	Battlespace Communications System Phase 2A	Battle Comm. Sys. (Land) 2A	438.1
SEA 1448 Phase 4B	ANZAC Air Search Radar Replacement	ANZAC Air Search Radar Repl	428.7
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	421.8
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	236.7
Total	26		64,142.6

Note 1: Once a project is selected for review, it remains within the portfolio of projects under review until the JCPAA endorses its removal, normally once it has met the capability requirements of Defence.

Note 2: SEA 1180 Phase 1 Offshore Patrol Vessel, SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Improvement Program, LAND 53 Phase 1BR Night Fighting Equipment Replacement and SEA 1448 Phase 4B ANZAC Air Search Radar Replacement are included in the MPR for the first time in 2018–19.

Note 3: These projects have been the subject of individual performance audits. See Table 8 for more information.

Note 4: SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability is a group of 24 activities primarily sustainment in nature. While not an acquisition project, it has been included at the JCPAA's request.

Source: The Project Data Summary Sheets in **Part 3** of this report.

7. In September 2019, the JCPAA endorsed project selection for the 2019–20 MPR, including the entry of five new projects.¹⁴ The ANAO advised the JCPAA that it proposed to consider the exit of seven projects from the 2018–19 MPR that were expected to reach FOC by the end of 2019 and/or to confirm that only low risk deliverables were remaining.¹⁵ Six of these projects are now considered suitable to exit on the basis that they:

- have achieved FOC (SEA 1448 Phase 2B ANZAC ASMD 2B);
- will achieve FOC in December 2019 (JP 2072 Phase 2A Battle Comm. Sys. (Land) 2A); or
- have provided a pre-FOC risk assessment supporting the timely declaration of FOC (JP 2048 Phase 4A/4B LHD Ships, AIR 7403 Phase 3 Additional MRTT, JP 9000 Phase 7 HATS, and JP 2048 Phase 3 LHD Landing Craft).

8. In the case of one project, AIR 8000 Phase 2 Battlefield Airlifter, the project's FOC has been delayed and it is not considered to be suitable for exit yet (see paragraph 2.54).

Report objective and scope

9. The objective of this report is to provide the Auditor-General's independent assurance over the status of the selected Major Projects. The status of the selected Major Projects is reported in the *Statement by the Secretary of Defence* (see **Part 3** of this report) and the Project Data Summary Sheets (PDSSs) prepared by Defence (see **Part 3** of this report). Assurance from the ANAO's review is conveyed in the *Independent Assurance Report* by the Auditor-General (see **Part 3** of this report).

10. The following forecast information found in the PDSSs is excluded from the scope of the ANAO's review:

- Section 1.2 Current Status—Materiel Capability Delivery Performance and Section 4.1 Measures of Materiel Capability Delivery Performance;
- Section 1.3 Project Context—Major Risks and Issues and Section 5 – Major Risks and Issues; and
- forecast dates where included in each PDSS.

Accordingly, the *Independent Assurance Report* by the Auditor-General does not provide any assurance in relation to this information. However, material inconsistencies identified in relation to this information are required to be considered in forming the conclusion.

11. The exclusions to the scope of the review, noted above, are due to a lack of Defence systems from which to provide complete and accurate evidence¹⁶ in a sufficiently timely manner to facilitate

14 SEA 5000 Phase 1 Future Frigates, SEA 1000 Phase 1B Future Subs, LAND 400 Phase 2 Combat Recon. Vehicles, AIR 7000 Phase 1B Triton Drones, and LAND 200 Tranche 2 Battlefield Command System.

15 The removal of projects from the MPR is generally based on declaration of Final Operational Capability (FOC), or on a pre-FOC risk assessment of the timely declaration of FOC where a significant portion of the project's deliverables are complete.

16 For example, Defence project risk management records can be managed in spreadsheets, where the risk to the completeness and accuracy of records is too high to be included within the scope of the review.

the review. This has been an area of focus of the JCPAA over a number of years¹⁷, and it is intended that all components of the PDSSs will eventually be included within the scope of the ANAO's review.

12. Separate to the formal review, the ANAO has undertaken an analysis of key elements of the PDSSs — including cost, schedule, progress towards delivery of required capability, project maturity, and risks and issues. Longitudinal analysis across these key elements of projects has also been undertaken.

13. Defence provides further insights and context in its commentary and analysis. This commentary and analysis is not included within the scope of the ANAO's review.

Review methodology

14. The ANAO has reviewed the PDSSs prepared by Defence as a **priority assurance review** under subsection 19A(5) of the *Auditor-General Act 1997*. The criteria to conduct the review are provided by the Guidelines approved by the JCPAA, and include whether Defence has procedures in place designed to ensure that project information and data was recorded in a complete and accurate manner, for all 26 projects.

15. The review included an assessment of Defence's systems and controls, including the governance and oversight in place, to ensure appropriate project management. The ANAO also sought representations and confirmations from Defence senior management and industry in relation to the status of the Major Projects in this report.

Report structure

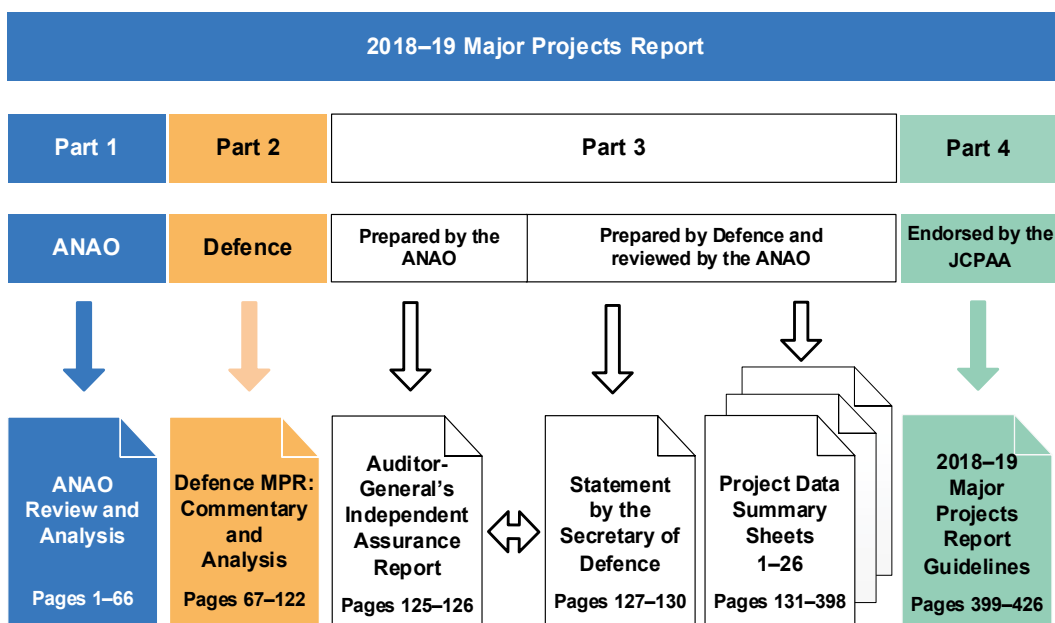
16. The report is organised into four parts:

- **Part 1** comprises the ANAO's review and analysis (pp. 1–66);
- **Part 2** comprises Defence's commentary, analysis and appendices (not included within the scope of the *Independent Assurance Report* by the Auditor-General) (pp. 67–122);
- **Part 3** incorporates the *Independent Assurance Report* by the Auditor-General, the *Statement by the Secretary of Defence*, and the PDSSs prepared by Defence as part of the assurance review process (pp. 123–398); and
- **Part 4** reproduces the *2018–19 Major Projects Report Guidelines* endorsed by the JCPAA, which provide the criteria for the compilation of the PDSSs by Defence and the ANAO's review (pp. 399–426).

Figure 1, below, depicts the four parts of this report.

¹⁷ Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), Recommendation 2, p. vii.

Figure 1: 2018–19 Report structure



Note: To assist in conducting inter-report analysis, the presentation of data in the PDSSs remains largely consistent and comparable with the 2017–18 MPR.

Project Data Summary Sheets

17. The PDSSs include unclassified information on project performance, prepared by Defence.¹⁸ As projects appear in the MPR for multiple years, changes to the PDSS from the previous year are depicted in bold orange text in the PDSS.

18. Each PDSS comprises:

- Project Header: including name; capability and acquisition type; Capability Manager; approval dates; total approved and in-year budgets; stage; complexity; and an image;
- Section 1—Project Summary: including description; current status including financial assurance and contingency statement; and context, including background, uniqueness, major risks and issues, and other current sub-projects;
- Section 2—Financial Performance: including budgets and expenditure; variances; and major contracts in place (in addition to quantities delivered as at 30 June 2019);
- Section 3—Schedule Performance: providing information on design development; test and evaluation; and forecasts and achievements against key project milestones, including

¹⁸ The MPR Guidelines provide that data of a classified nature is to be prepared in such a way as to allow for unclassified publication.

Initial Materiel Release (IMR), Final Materiel Release (FMR)¹⁹, Initial Operational Capability (IOC) and Final Operational Capability (FOC)²⁰;

- Section 4—Materiel Capability Delivery Performance: provides a summary of Defence's assessment of its expected delivery of key capabilities, the extent to which milestones were achieved (particularly where caveats are placed on the Capability Manager's declaration of significant milestones), and a description of the constitution of each key milestone;
- Section 5—Major Risks and Issues: outlines the major risks and issues of the project and remedial actions undertaken for each;
- Section 6—Project Maturity: provides a summary of the project's maturity, as defined by Defence²¹, and a comparison against the benchmark score;
- Section 7—Lessons Learned: outlines the key lessons that have been learned at the project level (further information on lessons learned by Defence are included in Defence's Appendix 2 in Part 2 of this report); and
- Section 8—Project Line Management: details current project management responsibilities within Defence.

Overall outcomes

Statement by the Secretary of Defence

19. The *Statement by the Secretary of Defence* was signed on 10 December 2019. The Acting Secretary's statement provides her opinion that the PDSSs for the 26 selected projects 'comply in all material respects with the Guidelines and reflect the status of the projects as at 30 June 2019'.

20. In addition, the *Statement by the Secretary of Defence* details significant events occurring post 30 June 2019, which materially impact the projects included in the report, and which should be read in conjunction with the individual PDSSs. These include: Joint Strike Fighter, P-8A Poseidon, MRH90 Helicopters, Offshore Patrol Vessel, Growler, LHD Ships, Hawkei, Battlefield Airlifter, Repl Replenishment Ships, CMATS, Additional MRTT, Collins Comms and EW, Night Fighting Equip Repl, Maritime Comms, ANZAC Air Search Radar Repl, UHF SATCOM, and LHD Landing Craft.

21. The 2018–19 MPR Guidelines require Defence to report in the *Statement by the Secretary of Defence* on projects which have been removed from the MPR which still have outstanding

-
- 19 IMR and FMR are milestones that Defence utilises to mark the completion and release of acquisition project supplies required to support the achievement of IOC and FOC respectively. They are defined in the relevant MAA (Materiel Acquisition Agreement). See Department of Defence, Defence Materiel Standard Procedure (Project Management) DMSP (PROJ) 11-0-008, *Initial Materiel Release And Final Materiel Release Across The Project Lifecycle*, Defence, Canberra, 2013, p. 2.
- 20 Initial Operational Capability is the capability state relating to the in-service realisation of the first subset of a capability system that can be employed operationally. Final Operational Capability is the capability state relating to the in-service realisation of the final subset of a capability system that can be employed operationally. Declaration of IOC and FOC is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group(s) that the fundamental inputs to capability have been delivered. See Defence's Appendix 5 in **Part 2** of this report.
- 21 The project maturity framework — outlined in the Department of Defence's Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, Defence, Canberra, 2010 — is a methodology used to quantify the maturity of projects as they progress through the acquisition life cycle. See further explanation in paragraphs 1.63–1.67.

caveats. Defence has not reported any outstanding caveats in the 2018–19 *Statement by the Secretary of Defence*.

Conclusion by the Auditor-General

22. The Auditor-General has concluded in the *Independent Assurance Report* for 2018–19 that ‘nothing has come to my attention that causes me to believe that the information in the 26 Project Data Summary Sheets in **Part 3** (PDSSs) and the *Statement by the Secretary of Defence*, excluding the forecast information, has not been prepared in all material respects in accordance with the *2018–19 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.’

23. Additionally, in 2018–19, a number of observations were made in the course of the ANAO’s review, as summarised below:

- Defence is unable to provide point-in-time data on project personnel numbers and costs. See further explanation in paragraphs 1.53 to 1.55;
- instances of a lack of oversight, non-compliance with corporate guidance and the use of spreadsheets in the management of risks and issues (Section 5 of the PDSS). See further explanation in paragraphs 1.56 to 1.62²²;
- outdated policy guidance for the project maturity framework (Section 6 of the PDSS). See further explanation in paragraphs 1.63 to 1.67²³; and
- an increase in the number of MPR projects which have achieved significant milestones with caveats. See further explanation in paragraphs 1.68 to 1.73.

ANAO’s analysis of project performance

24. As discussed, the ANAO has undertaken an analysis of key elements of the Defence PDSSs — cost, schedule, progress towards delivery of required capability, project maturity, risks and issues, and longitudinal analysis across these key elements of projects. Table 2 provides: summary data on Defence’s progress toward delivering the capabilities for the Major Projects covered in this report; and compares current data against that reported in previous editions of the MPR. This section also contains a summary analysis of the three principal components of project performance: cost, schedule and capability.

22 Spreadsheets lack formalised change/version control and reporting, increasing the risk of error. See paragraph 1.61 for further detail.

23 See footnote 21.

Table 2: Summary longitudinal analysis¹

	2016–17 MPR	2017–18 MPR	2018–19 MPR
Number of Projects	27	26	26
Total Approved Budget at 30 June	\$62.0 billion	\$59.4 billion	\$64.1 billion
Total Approved Budget at final Second Pass Approval	\$53.5 billion	\$50.2 billion	\$53.9 billion
Total Expenditure Against Total Approved Budget	\$32.1 billion (51.7%)	\$32.4 billion (54.5%)	\$36.3 billion (56.6%)
Total In-year Expenditure Against In-year Budget	\$4.1 billion (96.6%)	\$4.6 billion (98.6%)	\$4.8 billion (93.4%)
Total Budget Variation since initial Second Pass Approval ²	\$22.3 billion (36.0%)	\$23.0 billion (38.7%)	\$24.4 billion (38.0%)
Total Budget Variation since final Second Pass Approval ³	\$8.5 billion (13.7%)	\$9.2 billion (15.5%)	\$10.2 billion (15.9%)
In-year Approved Budget Variation	-\$1.6 billion (-2.6%)	-\$0.3 billion (-0.5%)	\$1.2 billion (1.9%)
Total Schedule Slippage ⁴	793 months (29%)	801 months (32%)	691 months (27%)
Average Schedule Slippage per Project	30 months	32 months	27 months
In-year Schedule Slippage ⁵	149 months (6%)	104 months (5%)	108 months (5%)
Total Project Maturity ⁶	1531 / 1890 (81%)	1484 / 1820 (82%)	1485 / 1820 (82%)
Total Reported Risks and Issues ^{7, 8}	136	138	138
Expected Capability (Defence Reporting)			
• High level of confidence of delivery (Green)	98%	99%	99%
• Under threat, considered manageable (Amber)	2%	1%	1%
• Unlikely to be met (Red)	0% ⁹	0%	0 ¹⁰

Refer to paragraphs 24 to 39 in **Part 1** of this report.

Note 1: The data for the 26 Major Projects in the 2018–19 MPR compares the data from projects in the 2017–18 MPR and 2016–17 MPR. The Major Projects included within each MPR are based on entry and exit criteria in the Guidelines, which have been included in **Part 4** of this report. The entry and exit of projects should be considered when comparing data across years.

Note 2: Where a project has multiple Second Pass Approvals (see footnote 8), the MPR has historically reported budget variations from the initial Second Pass Approval. The figures in this row are consistent with prior year reporting. See Table 3 for a breakdown of the major components of this variance, and Table 8 for all real variations.

Note 3: In the 2017–18 and 2018–19 PDSSs, where a project has multiple Second Pass Approvals, the budget at Second Pass Approval reported in the Header refers to the total budget as at the final Second Pass Approval. The figures in this row use this methodology.

Note 4: Slippage refers to the difference between the original government approved date and the current forecast date. Slippage can occur due to late delivery, increases in scope or at times can be a deliberate management decision. These figures exclude schedule reductions over the life of the project. However, paragraph 2.43 reports total schedule reductions over the life of the projects.

Note 5: Based on the 25 repeat projects from the 2015–16 MPR plus one new project (CMATS) that had slippage in 2016–17, 23 repeat projects from the 2016–17 MPR, and 22 repeat projects from the 2017–18 MPR respectively.

Note 6: The figures represent the total of the reported maturity scores divided by the total benchmark maturity score, in the PDSSs across all projects.

Note 7: The grey section of the table is excluded from the scope of the ANAO's *priority assurance review*, due to a lack of systems from which to obtain complete and accurate evidence in a sufficiently timely manner to facilitate the review.

Note 8: The figures represent the combined number of open high and extreme risks and issues reported in the PDSSs across all projects. Risks and issues may be aggregated at a strategic level.

Note 9: Defence advised in this year that Joint Strike Fighter would not deliver one element of capability at FOC (which equated to approximately one per cent). However, across all the Major Projects this percentage rounded to zero per cent.

Note 10: Defence advised in this year that AWD Ships would not deliver one element of capability at FOC (which equated to approximately one per cent). However, across all the Major Projects this percentage rounded to zero per cent.

Cost

25. Cost management is an ongoing process in Defence's administration of the Major Projects. While all projects reported that they could continue to operate within the total approved budget of \$64.1 billion, MRH90 Helicopters, Repl Replenishment Ships, and Battle Comm. Sys (Land) 2B were required to draw upon contingency funds to complete project activities.

26. The approved budget for Major Projects included in this MPR has increased by \$24.4 billion (38.0 per cent) since initial Second Pass Approval. Budget variations greater than \$500 million are detailed in Table 3, below.²⁴ However, as the MPR predominantly focusses on the approved capital budget for acquisition, the ongoing costs of Project Offices²⁵, training, replacement capability, etc., are not reported here.

24 Individual PDSSs also report on budget variations.

25 The JCPAA requested in May 2018 that the ANAO report back to the Committee on how Defence Major Projects cost variations and the costs of retaining project staff over time might be reported in future MPRs. See paragraphs 1.53 to 1.55 for the outcomes of this consideration.

Table 3: Budget variation over \$500m post initial Second Pass Approval by variation type^{1, 2}

Project	Variation Type	Explanation	Year	Amount \$b
Scope Increases				14.1
MRH90 Helicopters		34 additional aircraft at Phase 4/6 Second Pass Approval	2005–06	2.3
Joint Strike Fighter		58 additional aircraft at Stage 2 Second Pass Approval	2013–14	10.5
P-8A Poseidon		Four additional aircraft	2015–16	1.3
Real Cost and other Increases				1.8
AWD Ships		Real Cost Increase of \$1.2b offset by \$0.1b transfer for facilities in 2014	2013–14 and 2015–16	1.1
Overlander Medium/Heavy		Project supplementation ³ (\$684.2m) and additional vehicles, trailers and equipment (\$28.0m) at Revised Second Pass Approval	2013–14	0.7
Other budget movements				1.3
Other	Scope increase/budget transfers (net)	Other scope changes and transfers	Various	1.3
Price Indexation – materials and labour (net) (to July 2010) ⁴				2.8
Exchange Variation – foreign exchange (net) (to 30 June 2019)				4.4
Total				24.4

Note 1: For the variations related to all projects and values refer to Table 8 of this report. For the breakdown of in-year variation, refer to Table 9 of this report.

Note 2: For projects with multiple Second Pass Approvals, this table shows variations from the initial approval.

Note 3: Defence has advised that 'project supplementation' is a unique term used to describe the approvals history of this project as follows: 'The original amount of \$2549.2, was the Government decision to split Phase 3 into Phase 3A and 3B. In 2011, Government approved Second Pass approval of Phase 3A and the 'Interim Pass' Government approval for Phase 3B. The decision to grant Phase 3B 'Interim Pass' was to allow greater bargaining power for Defence while negotiating Phase 3A. Phase 3B was always going to return to Government for formal Second Pass approval, which occurred in July 2013, once contract negotiations were complete.'

Note 4: Prior to 1 July 2010, projects were periodically supplemented for price indexation, whereas the allocation for price indexation is now provided for on an out-turned basis at Second Pass Approval.

Source: ANAO analysis of the 2018–19 PDSSs.

Schedule

27. Delivering Major Projects on schedule continues to present challenges for Defence, affecting when the capability is made available for operational release and deployment by the Australian Defence Force, as well as the cost of delivery.

28. The total schedule slippage for the 26 selected Major Projects, as at 30 June 2019, is 691 months when compared to the initial schedule.²⁶ This represents a 27 per cent increase since Second Pass Approval. Across MPR projects that have experienced slippage (21 of 26 projects), the average slippage is 32.9 months (2.7 years). Table 4 below includes details of in-year and total schedule slippage by project. The table shows an increase of 108 months of in-year slippage during 2018–19.

29. The total slippage of 691 months in 2018–19 is 110 months lower than the total in 2017–18 of 801 months. This is due to:

- the removal of completed projects (Collins RCS, Hw Torpedo, ANZAC ASMD 2A and Battle Management System) removing 254 months of slippage from the total reported in 2017–18 (see Table 5);
- the addition of 108 months of in-year slippage described above; and
- the Collins Comms and EW project adding 36 months of slippage to the total of 691 months; the slippage occurred in 2016–17 but the project was reported in the MPR for the first time in 2018–19.

26 As noted in Note 4 of Table 2, slippage refers to the difference between the original government approved date and the current forecast date. These figures exclude schedule reductions over the life of the project. In November 2017, Defence raised with the ANAO, for the purposes of calculating total schedule slippage, the feasibility of identifying what the proportion of slippage represented by the expanded scope of projects is (for example with respect to the P-8A Poseidon and Additional MRTT projects). See Note 2 of Figure 7 of this report which shows that the slippage attributable to increases in project scope is 94 months.

Table 4: Schedule slippage from original planned Final Operational Capability ¹

Project	In-year (months)	Total (months)	Project	In-year (months)	Total (months)
Joint Strike Fighter ²	0	2	Battle Comm. Sys. (Land) 2B	24	24
AWD Ships	5	40	Additional MRTT	2	23
P-8A Poseidon	1	29	ANZAC ASMD 2B	10	77
MRH90 Helicopters	0	89	Collins Comms and EW	0	36
Offshore Patrol Vessel	0	0	Pacific Patrol Boat Repl	0	2
Growler	1	2	HATS	3	3
Overlander Medium/Heavy	6	11	Collins R&S	0	112
MH-60R Seahawk	0	0	Night Fighting Equip Repl	0	0
LHD Ships ²	0	37	Maritime Comms	6	13
Hawkei ²	0	0	Battle Comm. Sys. (Land) 2A	9	39
Battlefield Airlifter	0	24	ANZAC Air Search Radar Repl	0	0
Repl Replenishment Ships ^{2,3}	7	7	UHF SATCOM ²	21	42
CMATS ²	0	28	LHD Landing Craft	13	51
Total (months)				108	691
Total (%)				5	27

Note 1: Refer to footnote 26.

Note 2: These projects have been identified by Defence as Projects of Interest (see paragraph 1.23 in **Part 1**).

Note 3: Slippage for this project is reflective of movement from a forecast of May 2022 in 2017–18, to a forecast of December 2022 in 2018–19. While the forecast of December 2022 remains within the window for FOC achievement approved by Government, the previous forecast of May 2022 was approved by this project's line management. See paragraph 2.45.

Source: ANAO analysis of the 2018–19 PDSSs.

30. Platform availability has contributed to the slippage experienced within some projects. For example, Maritime Comms and Collins R&S have been impacted by changes to docking schedules of the Anzac Class frigates and Collins Class submarines respectively. Significant delays have also been experienced by those projects with the most developmental content: AWD Ships, MRH90 Helicopters, CMATS and Battle Comm. Sys. (Land) 2B. Additionally, delays to operational test and evaluation activities have led to delays to the LHD Ships and LHD Landing Craft projects.

31. Table 5, below, provides details of total schedule slippage by project, for projects which have exited the MPR. Compared to the 691 months total schedule slippage for the current 26 Major Projects, the 22 projects which have exited the MPR have reported accumulated schedule slippage of 953 months, as at their respective exit dates. Table 5 indicates that schedule slippage for projects which have exited the MPR was more pronounced in projects with the most developmental content.

Table 5: Schedule slippage for projects which have exited the MPR ¹

Project	Total (months)	Project	Total (months)
Wedgetail (Developmental)	78	HF Modernisation (Developmental)	147
Super Hornet (MOTS)	0	Armadales (Australianised MOTS)	45
Hornet Upgrade (Australianised MOTS)	39	Collins RCS (Australianised MOTS)	109
ARH Tiger Helicopters (Australianised MOTS)	82	Hw Torpedo (MOTS)	63
C-17 Heavy Airlift (MOTS)	0	SM-2 Missile (Australianised MOTS)	26
Air to Air Refuel (Developmental)	64	ANZAC ASMD 2A (Australianised MOTS)	82
FFG Upgrade (Developmental)	132	155mm Howitzer (MOTS)	7
Bushmaster Vehicles (Australianised MOTS)	1	Stand Off Weapon (Australianised MOTS)	37
Overlander Light (Australianised MOTS)	9	Battle Comm. Sys. (Australianised MOTS)	24
Next Gen Satellite ² (MOTS)	0	C-RAM (MOTS)	2
Additional Chinook (MOTS)	6		
Total			953

Note 1: The Hornet Refurb and Battle Management System (BMS) projects are not included in this table as they did not have FOC milestones.

Note 2: Next Gen Satellite shows slippage in Figure 8, which related to the final capability milestones at the time. By the time it reached FOC, a new final capability milestone had been introduced and slippage was reduced.

Source: PDSSs in published Major Projects Reports and ANAO analysis.

32. Additional ANAO analysis (refer to Figure 7, on page 54) has compared project slippage against the Defence classification of projects as Military Off-The-Shelf (MOTS), Australianised MOTS or developmental. These classifications are a general indicator of the difficulty associated with the procurement process.

33. Figure 8 (on page 55) provides analysis of projects either completed, or removed from the MPR review, and shows that a focus on MOTS²⁷ acquisitions has assisted in reducing schedule slippage. Prima facie, the more developmental in nature a project is, the more likely it will result in a greater degree of project slippage. Figure 8 was requested by the JCPAA in May 2014.²⁸

34. Longitudinal analysis indicates that while the reasons for schedule slippage vary, it primarily reflects the underestimation of both the scope and complexity of work, particularly for Australianised MOTS and developmental projects (see paragraphs 2.31 to 2.37).

Capability

35. The third principal component of project performance examined in this report is progress towards the delivery of capability required by government. While the assessment of expected capability delivery by Defence is outside the scope of the Auditor-General's formal review

²⁷ Off-The-Shelf: Systems, hardware or software that already exists or is confirmed in service for an equivalent purpose and requires no, or minimal, change. Sometimes expressed as commercial off-the-shelf or military off-the-shelf. Department of Defence, *Interim Defence Test and Evaluation Manual*, Defence, Canberra, 2016, Annex 1A, Definitions, p. iii.

²⁸ Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 442: Inquiry into the 2012–13 Defence Materiel Organisation Major Projects Report*, (2014), Recommendation 5, p. 31.

conclusion, it is included in the analysis to provide an overall perspective of the three principal components of project performance.

36. The Defence PDSSs report that 20 projects in this year's report will deliver all of their key capability requirements. Defence's assessment indicates that some elements of the capability required may be 'under threat', but the risk is assessed as 'manageable'. The five project offices experiencing challenges with expected capability delivery (2017–18: three) are Joint Strike Fighter, MRH90 Helicopters, Hawkei, Battlefield Airlifter and LHD Landing Craft. One project office (AWD Ships) reports that it is unable to deliver all of the required capability by FOC.

37. Defence's presentation of capability delivery performance in the PDSSs is a forecast and therefore has an element of uncertainty. In 2015–16, the ANAO developed an additional measure of the status of current capability delivery progress to assist the Parliament — Capability Delivery Progress — which is a tally of the capability delivered as at 30 June 2019, as reported by Defence. Table 6 below provides a worked example of the ANAO's methodology, utilising the performance information provided in the relevant PDSS.

Table 6: Capability Delivery Progress assessment — Additional MRTT (multi-role tanker transport)

Capability elements as per Section 4.2 of the PDSS	No. of elements approved	No. of elements delivered at 30 June 2019	Comments
Delivery of first aircraft, and delivery of initial spares and support equipment (IMR)	2	2	First aircraft and initial spares delivery completed.
Delivery of second aircraft, delivery of remaining spares and support equipment, and delivery of Aircraft Stores Replenishment Vehicle (FMR)	3	2	Second aircraft and remaining spares and support equipment delivery completed. Aircraft Stores Replenishment Vehicle yet to be delivered.
Total (number)	5	4	
Total (%)	100	80	

Source: PDSSs in published Major Projects Reports and ANAO analysis.

38. Table 7 below, summarises expected capability delivery as at 30 June 2019 — as reported by Defence and using the ANAO's Capability Delivery Progress measure.

Table 7: Capability delivery

Expected Capability (Defence Reporting)	2016–17 MPR (%)	2017–18 MPR (%)	2018–19 MPR (%)	Capability Delivery Progress (ANAO Analysis)	2018–19 MPR (%)	2018–19 MPR (%) Adjusted ³
High Confidence (Green)	98	99	99	Delivered	67	54
Under Threat, considered manageable (Amber)	2	1	1	Not yet delivered	33	46
Unlikely (Red)	0 ¹	0	0 ²	Not delivered at FOC	0 ²	0 ²
Total	100	100	100	Total	100	100

Note 1: Defence advised in this year that Joint Strike Fighter would not deliver one element of capability at FOC (which equated to approximately one per cent of elements required). However, across all the Major Projects this percentage rounded to zero.

Note 2: Defence advised in this year that AWD Ships would not deliver one element of capability at FOC (which equates to approximately one per cent of elements required). However, across all the Major Projects this percentage rounds to zero.

Note 3: While the left-hand column reports the total percentage of elements delivered across all 26 Major Projects, the right-hand adjusted column reports the average percentage of elements delivered per project. This adjustment results in an analysis where all projects have equal weight and the percentage is not affected by the numbers of deliverables per project.

Source: PDSSs in published Major Projects Reports and ANAO analysis.

39. In addition to reporting on expected capability delivery, Defence has continued the practice of including in the PDSSs declassified information on settlement actions for projects, including stop payments and liquidated damages. During 2018–19, Hawkei, Pacific Patrol Boat Repl, and UHF SATCOM had negotiated contractual settlements involving stop payments or liquidated damages. Prior settlements for projects within this report related to MRH90 Helicopters, LHD Ships and Maritime Comms.

1. The Major Projects Review

1.1 This chapter provides an overview of the scope and approach adopted by the Australian National Audit Office (ANAO) for the review of the 26 Project Data Summary Sheets (PDSSs) prepared by the Department of Defence (Defence). This chapter also provides the results of the Major Projects Report (MPR) review.

Review scope and approach

1.2 In 2012 the Joint Committee of Public Accounts and Audit (JCPAA) identified the review of the PDSSs as a **priority assurance review**, under subsection 19A(5) of the *Auditor-General Act 1997* (the Act). This provided the ANAO with full access to the information gathering powers under the Act. The ANAO's review of the individual project PDSSs, which are reproduced in **Part 3** of this report, was conducted in accordance with the auditing standards set by the Auditor-General under section 24 of the *Auditor-General Act 1997* through its incorporation of the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the Australian Auditing and Assurance Standards Board.

1.3 The following forecast information is excluded from the scope of the ANAO's review: capability delivery, risks and issues, and forecast dates. These exclusions are due to the lack of Defence systems from which to provide complete and accurate evidence²⁹, in a sufficiently timely manner to complete the review. Accordingly, the *Independent Assurance Report* by the Auditor-General does not provide any assurance in relation to this information. However, material inconsistencies identified in relation to this information, are required to be considered in forming the conclusion.

1.4 The ANAO's work is appropriate for the purpose of providing an *Independent Assurance Report* in accordance with the above auditing standard. However, the review of individual PDSSs is not as extensive as individual performance and financial statement audits conducted by the ANAO, in terms of the nature and scope of issues covered, and the extent to which evidence is required by the ANAO. Consequently, the level of assurance provided by this review, in relation to the 26 major Defence equipment acquisition projects (Major Projects), is less than that provided by the ANAO's program of audits.

1.5 Separately, the ANAO undertakes analysis of key elements of the PDSSs and examines systemic issues and provides longitudinal analysis for the 26 projects reviewed.

1.6 The review was conducted in accordance with the *ANAO Auditing Standards* at a cost to the ANAO of approximately \$2.2 million.³⁰

29 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), Recommendation 2, p. vii.

30 Defence has reported that its estimated cost of producing each MPR is \$2.4 million on page 74 in **Part 2** of this report.

Review methodology

1.7 The ANAO's review of the information presented in the individual PDSSs included:

- examination and assessment of the governance and oversight in place to ensure appropriate project management;
- an assessment of the systems and controls that support project financial management, risk management and project status reporting, within Defence;
- an examination of each PDSS and the documents and information relevant to them;
- a review of relevant processes and procedures used by Defence in the preparation of the PDSSs;
- discussions with persons responsible for the preparation of the PDSSs and management of the projects;
- analysis of project information, for example, cost and schedule variances;
- taking account of industry contractor comments provided on draft PDSS information;
- assessing the assurance by Defence managers attesting to the accuracy and completeness of the PDSSs;
- examination of the representations by the Chief Finance Officer supporting the project financial assurance and contingency statements;
- examination of confirmations, provided by the Capability Managers, relating to each project's progress toward Initial Materiel Release (IMR), Final Materiel Release (FMR), Initial Operational Capability (IOC) and Final Operational Capability (FOC); and
- examination of the *Statement by the Secretary of Defence*, including significant events occurring post 30 June, and management representations by the Secretary of Defence.

1.8 The ANAO's review of PDSSs also focused on project management and reporting arrangements contributing to the overall governance of the Major Projects. The ANAO considered:

- developments in acquisition governance (see paragraphs 1.10 to 1.32, below);
- the financial framework, particularly as it applies to the project financial assurance and contingency statements, and Defence's advice that project financial reporting during 2018–19 would be prepared on the same basis as project approvals and expenditure represented in the Portfolio Budget Statements and the Defence Annual Report (i.e. on a cash basis) (Section 2 of the PDSSs);
- schedule management and test and evaluation processes (Section 3 of the PDSSs);
- capability assessments, including Defence statements of the likelihood of delivering key capabilities, particularly where caveats are placed on the Capability Manager's declaration of significant milestones (Section 4 of the PDSSs);
- the ongoing reform process for Defence's Enterprise Risk Management Framework, and the completeness and accuracy of major risk and issue data (Section 5 of the PDSSs);
- the project maturity framework along with its related reporting and the systems in place to support the consistent and accurate application and the provision of this data (Section 6 of the PDSSs); and

- the impact of acquisition issues on sustainment to ensure the PDSS is a complete and accurate representation of the acquisition project.

1.9 This review informed the ANAO's understanding of the systems and processes supporting the PDSSs for the 2018–19 review period. It also highlighted issues in those systems and processes that warrant attention.

Acquisition governance

1.10 Consistent with previous years, the ANAO considered Defence's acquisition governance processes when planning and conducting review for the 2018–19 MPR. While some of these processes are now established, others continue to mature or require further development to achieve their intended impact.

Defence Independent Assurance Reviews

1.11 The Defence Independent Assurance Review process provides the Defence Senior Executive with assurance that projects and products will deliver approved objectives and are prepared to progress to the next stage of activity. Reviews allow early identification of problem projects and products, facilitating their timely recovery.^{31, 32}

1.12 Formerly called Gate Reviews, Independent Assurance Reviews are intended to be conducted at key acquisition and sustainment 'gates' in the Capability Life Cycle.³³

1.13 Twenty of the 26 projects included in this report had an Independent Assurance Review conducted during 2018–19³⁴, which formed key corroborative evidence for the ANAO's review.

Projects of Concern

1.14 The Projects of Concern process is intended to focus the attention of the highest levels of government, Defence and industry on remediating problem projects. The process has continued to play a role across the portfolio of MPR projects.³⁵ As at 30 June 2019, one MPR project, MRH90 Helicopters, was a continuing Project of Concern. The project was placed on the list in November 2011 due to contractor performance relating to significant technical issues preventing the achievement of milestones on schedule.³⁶

31 Department of Defence, *Independent Assurance Reviews for Projects and Sustainment Products*, Defence, Canberra, 2016, pp. 3 and 9.

32 Although referred to by Defence as 'assurance' reviews, these administrative reviews are not carried out within frameworks issued by the Australian Auditing and Assurance Standards Board.

33 Defence advised in November 2017 that 'Gate Review' is now a description for a separate process that leads to Gate submission (to the Investment Committee) including the CASG Independent Assurance Review and the Capability Manager Gate Review.

34 Independent Assurance Reviews were conducted for: Joint Strike Fighter, AWD Ships, P-8A Poseidon, Offshore Patrol Vessels, Growler, Overlander Medium/Heavy, MH-60R Seahawk, Hawkei, Battlefield Airlifter, Repl Replenishment Ships, Battle Comm. Sys. (Land) 2B, CMATS, Additional MRTT, Collins Comms and EW, Pacific Patrol Boat Repl, HATS, Maritime Comms, Battle Comm. Sys. (Land) 2A, ANZAC Air Search Radar Repl, and UHF SATCOM.

35 Department of Defence, *Defence Annual Report 2018–19*, Chapter 7, Asset Management, Defence, Canberra, 2019, p. 131.

36 Issues in the project were discussed in Auditor-General Report No. 52, 2013–14 *Multi-Role Helicopter Program*.

1.15 Auditor-General Report No.31 2018–19, *Defence's Management of its Projects of Concern*, assessed whether the Department of Defence's Projects of Concern regime was effective in managing the recovery of underperforming projects. It concluded that, while the regime is an appropriate mechanism for escalating troubled projects to the attention of senior managers and ministers, Defence was not able to demonstrate the effectiveness of its regime in managing recovery of underperforming projects. Moreover, the audit observed that the transparency and rigour of the framework's application has declined in recent years. The audit recommended that:

- Recommendation no.1: Defence introduce, as part of its formal policy and procedures, a consistent approach to managing entry to, and exit from, its Projects of Interest and Projects of Concern lists. This should reflect Defence's risk appetite and be made consistent with the new Capability Acquisition and Sustainment Group Risk Model and other, Defence-wide, frameworks for managing risk. To aid transparency, the policy and the list should be made public.
- Recommendation no.2: Defence evaluates its Projects of Concern regime.³⁷

Defence has agreed to implement these recommendations. It has advised that the Project Risk Management System (PRMS) being developed as part of the risk reform should provide a consistent approach for entry into and exit from the Projects of Interest and Projects of Concern Lists. Defence advised that it intends for this recommendation to be implemented by March 2020 but notes that this will depend on progress in implementing the CASG Risk reform (see paragraphs 1.56 to 1.62)

1.16 In relation to Recommendation 2, Defence has advised that CASG's Project Management Branch will analyse Projects of Concern to understand the root cause of project performance. Defence has also advised that lessons will be published, communicated and used to treat systemic issues in project practice and performance, including the training and skilling of project management. The CASG Project Management Branch will assess the contribution of the Projects of Concern regime to managing the recovery of underperforming projects.

1.17 The ANAO will continue to monitor Defence's implementation of the recommendations and report on progress in the next MPR.

Quarterly Performance Report

1.18 The Defence Quarterly Performance Report (QPR) aims to provide senior stakeholders within government and Defence with insight into the delivery of major capability to the Australian Defence Force.³⁸ The report is provided to the Minister for Defence and the Minister for Defence Industry on a quarterly basis.³⁹

1.19 In July 2019, the ANAO completed an audit on the effectiveness of the QPR in providing senior stakeholders with accurate and timely information on the status and emerging risks and issues. It found the June 2018 QPR, reviewed by the ANAO, to be largely effective, contained

37 Auditor-General Report No. 31 2018–19 *Defence's Management of its Projects of Concern*, p. 10.

38 Department of Defence, *Quarterly Performance Report June 2019*, Defence, Canberra, 2019, p. 4.

39 Auditor-General Report No. 3 2019–20 *Defence's Quarterly Performance Report on Acquisition and Sustainment*, p. 7.

mostly accurate information, and was valued by senior stakeholders.⁴⁰ The ANAO recommended that Defence improve the QPR as a tool for senior leaders by reporting on:

- (a) trend performance data for sustainment products; and
- (b) emerging candidates for the Projects/Products of Concern list and Products/Projects of Interest list that have been recommended by an Independent Assurance Review or which are under active consideration by senior management.⁴¹

1.20 In the course of its review for the 2018–19 MPR, the ANAO observed that Defence's June 2019 QPR reported on both improved and deteriorated performance for both acquisition and sustainment products since the previous QPR.⁴² This reflects a change in trend reporting consistent with the agreed ANAO recommendation.

1.21 The ANAO also observed as part of its review that Defence's June 2019 QPR reported the emerging candidates for the Projects/Products of Concern list and Products/Projects of Interest list which had been recommended either by an IAR or which were under active consideration. This change was also consistent with the agreed ANAO recommendation.⁴³

1.22 The ANAO examines QPRs as part of the procedures for its limited assurance review of Defence's PDSSs.⁴⁴ For the 2018–19 review, the ANAO examined the five QPRs from September 2018 to September 2019.⁴⁵

1.23 The June 2019 QPR identified six MPR projects as Projects of Interest⁴⁶:

- Joint Strike Fighter, noting risks related to affordability and IOC and FOC deliverables⁴⁷;
- LHD Ships, due to ongoing operational testing, a large number of outstanding requirements, defects and deficiencies, and an immature support system⁴⁸;

40 Auditor-General Report No.3 2019–20 *Defence's Quarterly Performance Report on Acquisition and Sustainment*, pp. 8–9.

41 *ibid*, p. 11.

42 Department of Defence, *Quarterly Performance Report June 2019*, Defence, Canberra, 2019, pp. 19–21.

43 *ibid*, pp. 14–15.

44 Similar to the PDSSs, the QPR provides a summary of projects' performance in the areas of cost, schedule and capability. However, there are some differences between the measures used, and the level of detail provided. For example, both the PDSSs and the QPR use a 'traffic light indicator' to reflect capability delivery, but the indicators are defined differently between the two products. In the PDSSs, Amber capability is defined as 'under threat but still considered able to be met', whereas the QPR defines Amber capability as 'major elements of scope about to fail against the baseline'. In addition, the QPR allows for only one indicator to be used in the assessment, i.e. 'all Green', 'all Amber' or 'all Red'. In contrast, the Pie Chart in the PDSSs allows for a breakdown of capability, with individual components assessed as Green, Amber or Red, providing a more detailed assessment (see paragraphs 2.48–2.59).

45 The September 2019 QPR has been examined in the context of reviewing the Statement by the Secretary of Defence relating to significant events occurring post 30 June 2019.

46 These are CASG acquisition projects that have variances significant enough — in the areas of schedule, cost, and/or capability performance — to warrant attention from senior management. Department of Defence, *Quarterly Performance Report June 2019*, Defence, Canberra, 2019, p. 36.

47 Department of Defence, *Quarterly Performance Report June 2019*, Defence, Canberra, 2019, p. 38.

48 *ibid*, p. 37.

- Hawkei, due to risks to capability and schedule that relate to ongoing reliability issues, design maturity, and production delays caused by the voluntary administration of the engine manufacturer (Steyr Motors)⁴⁹;
- Repl Replenishment Ships (Maritime Operational Support Capability), due to a change in delivery strategy with the prime contractor, which caused significant schedule changes, and deficiencies in the Integrated Logistics Support system⁵⁰;
- Civil Military Air Traffic Management System (CMATS), noting risks to schedule due to execution of design milestones and poor scope definition, and ongoing contract negotiations⁵¹; and
- UHF SATCOM, due to delays in contract negotiation, software development and US Government certification. In the March 2019 QPR, the entire JP2008 program was identified as a Program of Interest, which is inclusive of UHF SATCOM.⁵²

1.24 These ongoing issues for the Joint Strike Fighter, LHD Ships, Hawkei, Repl Replenishment Ships, CMATS, and UHF SATCOM projects align with the results of the ANAO's review of the PDSSs. Delays to progress have impacted the delivery schedule of Hawkei, Repl Replenishment Ships, and UHF SATCOM during 2018–19⁵³ (see Table 4, on page 15).

Project Directives and Materiel Acquisition Agreements

1.25 Project Directives (previously known as Joint Project Directives) state the terms of government approval, reflecting the approved scope and timeframes for activities, responsibilities and resources allocated, and key risks and issues.⁵⁴ Project Directives are used to inform internal Defence documentation such as Materiel Acquisition Agreements (MAAs) between Capability Acquisition and Sustainment Group (CASG) and the Service Chiefs.^{55, 56} Project Directives are a key governance document under the Capability Life Cycle⁵⁷, intended to ensure that all parties in Defence are informed of Government decisions. The ANAO has previously highlighted the importance of ensuring that Project Directives properly reflect the relevant Government decision, and that MAAs are appropriately aligned with the relevant Project Directive.⁵⁸

1.26 In some cases Project Directives have been finalised after the MAAs they are intended to inform and, as a result, care is required to ensure that Project Directives properly reflect the relevant government decision, and that MAAs are appropriately aligned with the relevant Project

49 Department of Defence, *Quarterly Performance Report June 2019*, Defence, Canberra, 2019, p. 41.

50 *ibid*, p. 51. See Note 2, Table 4.

51 *ibid*, p. 39.

52 Department of Defence, *Quarterly Performance Report March 2019*, Defence, Canberra, 2019, p. 27.

53 Repl Replenishment Ships and UHF SATCOM had 7 and 21 months of in-year slippage to their FOC dates respectively. Hawkei did not experience slippage to FOC, but its IMR and IOC milestones slipped by 12 months.

54 Department of Defence, *Interim Capability Life Cycle Manual*, Defence, Canberra, 2017, pp. 14 and 93.

55 The Project Directive defines the Project, in terms of fundamental inputs to capability, together with the resources necessary to deliver the project and is developed in accordance with the parameters agreed by government. Department of Defence, *Interim Capability Life Cycle Manual*, Defence, Canberra, 2017, p. 93.

56 The *Interim Capability Life Cycle Manual* does not describe MAAs and instead refers to Product Delivery Agreements (PDAs) (see paragraph 1.29). Projects in this MPR have an approved MAA.

57 Department of Defence, *Interim Capability Life Cycle Manual*, Defence, Canberra, 2017, pp. 14 and 93.

58 Auditor-General Report No.6 2013–14 *Capability Development Reform*, p. 232.

Directive. The mechanism for providing the directive is via the Capability Lifecycle (CLC) Management Tool, which records the Government decision in relation to a project. In some cases, the Joint Force Authority may provide a specific documented directive. For all four new projects entering the 2018–19 MPR, it was not clear whether the projects had their Project Directive signed prior to the MAA. These projects either did not have a specific documented Project Directive, or were unable to access the CLC Management Tool at the time of the ANAO site visits. Project Directives are a requirement of the Interim CLC Manual⁵⁹, and their production increases the likelihood of complying with government decisions.

1.27 The ANAO requires access to original approval documents to validate the requirements of projects. At this time, validation based on internal Defence documentation is not always possible.

1.28 The ANAO will continue to take Project Directives into account as part of its review. The extent to which they can be relied upon will be dependent on the completeness and accuracy of Project Directives, in relation to recording the detail of government approvals.

1.29 Product Delivery Agreements (PDAs)⁶⁰ were being developed to replace the existing MAAs and Materiel Sustainment Agreements (MSAs). Defence has advised the ANAO that this initiative has not progressed.

Business systems

1.30 Defence continues to review its business systems with the aim of consolidating processes and systems in order to provide a more manageable system environment. As reported to the JCPAA on 31 March 2017, Defence stated that there was a ‘need to get a single unified system of accountability and reporting inside the organisation’.⁶¹ During 2018–19, and at the time of this report, the Monthly Reporting System (MRS), which provides much of the data for the PDSSs, remains in place. Defence has advised that an update to the MRS, which may be a new system, will commence pilot testing in April 2020.

1.31 In October 2018, Defence advised that it had concluded its trial of the Project Performance Review (PPR) in November 2017. At that time, PPR was a spreadsheet; now, the PPR is a bespoke Information Communications Technology (ICT) platform which draws project performance data from Defence systems. It is intended for use by project managers to inform discussions with Project Directors and Branch Heads. PPR has not been developed to replace the MRS.

1.32 In January 2018, Defence initiated a plan to implement the PPR across CASG. Defence has now commenced Phase 2 of PPR Release, and its ICT platform is currently being used by 60 projects. Defence has advised that six MPR projects are using PPR.⁶² The information in these

59 Department of Defence, *Interim Capability Life Cycle Manual*, Defence, Canberra, 2017, p. 14.

60 A PDA is an agreement between the Sponsor and Lead Delivery Group which specifies the scope, resourcing, priorities and performance and preparedness requirements for support of a capability system throughout its life, to support performance measurement. Department of Defence, *Interim Capability Life Cycle Manual*, Defence, Canberra, 2017, p. 92.

61 Commonwealth, *Public Hearing*, Joint Committee of Public Accounts and Audit, 31 March 2017, Mr. K Gillis, Deputy Secretary, Capability Acquisition and Sustainment Group, Department of Defence, p. 11.

62 Joint Strike Fighter, Overlander Medium/Heavy, Hawkei, Battlefield Airlifter, CMATS, and Night Fighting Equip Repl.

documents is largely consistent with the projects' PDSSs. The ANAO observed inconsistencies relating to:

- project approval dates;
- the number of High- or Extreme-rated project risks; and
- project maturity scores.

Results of the review

1.33 The following sections outline the results of the ANAO's review, which inform the overall conclusion in the *Independent Assurance Report* by the Auditor-General for 2018–19.

Financial framework

1.34 The project financial assurance statements were introduced in the 2011–12 Major Projects Report and have been included within the scope of the *Independent Assurance Report* by the Auditor-General since 2014–15. The contingency statements were introduced for the first time in the 2013–14 report and these describe the use of contingency funding to mitigate project risks. Together, they are aimed at providing greater transparency over projects' financial status.

1.35 A project's total approved budget comprises:

- the allocated budget, which covers the project's approved activities, as indicated in the MAA; and
- the contingency budget, which is set aside for the eventuality of risks occurring and includes unforeseen work that arises within the delivery of the planned scope of work.⁶³

1.36 In 2018–19, the ANAO reviewed the financial framework as it applied to managing project budgets and expenditure, including: project financial assurance, contingency, the reporting environment, and reporting cost variations and personnel costs.

Project financial assurance statement

1.37 The project financial assurance statement's objective is to enhance transparency by providing readers with information on each project's financial position (in relation to delivering project capability) and whether there is 'sufficient remaining budget for the project to be completed'.⁶⁴

1.38 In September and November 2018, due to cost pressures, the Joint Strike Fighter project received government approval to transfer project scope of \$1.5 billion to other phases of the Joint Strike Fighter program (none of which have been approved by government). There was no corresponding transfer of funds out of the project budget.⁶⁵ The PDSS states that 'there is sufficient budget, including contingency, remaining for the project to deliver the revised scope'.

63 Department of Defence, (PM) 003, *CASG Project Controls Manual*, Acronyms, Abbreviations and Definitions, 2017, p. 8.

64 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 436: Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, (2013), paragraph 3.4, p. 14.

65 Defence advised the ANAO in November 2019 that scope elements (principally the Engine Maintenance Repair Overhaul and Upgrade facility, worth \$0.08 billion) were brought forward from later phases into the Joint Strike Fighter project without commensurate funding transfer.

1.39 The Joint Strike Fighter PDSS reports a risk that project capability may be affected by overall funding or programming issues arising from internal cost growth, forecasting accuracy and external budget constraints. The remedial actions to address this risk reported in the PDSS include:

- ‘Conduct ongoing engagement with the F-35 Joint Program Office and major project suppliers to facilitate improved cost data to allow the F-35 project to meet budgeting and programming expectations’ — i.e. clarifying potential cost pressures on the project;
- ‘Proactive management of cost risk identification and engagement with the Capability Manager to prioritize requirements to deliver project capability within the approved project budget’ — i.e. actively identify cost risk and engage with senior leaders; and
- ‘Options may be developed for Capability Manager consideration to achieve project affordability by aligning project expenditure with the Defence Integrated Investment Program capacity in any specific year’ — i.e. consider options for scheduling project expenditure to align with Defence’s available funding.

1.40 The Chief Finance Officer’s representation letter to the Secretary of Defence on the 2018–19 MPR’s project financial assurance statements was unqualified. The project financial assurance statement is restricted to the current financial contractual obligations of Defence for these projects, including the result of settlement actions and the receipt of any liquidated damages, and current known risks and estimated future expenditure as at 30 June 2019.

Contingency statements and contingency management

1.41 The purpose of the project contingency budget is to estimate the inherent cost, schedule and technical uncertainties of projects’ in-scope work.⁶⁶ Defence policy requires project managers to ensure that all decisions in regards to a project’s contingency budget are included in the project’s contingency budget log to ensure ongoing transparency and traceability.⁶⁷

1.42 PDSSs are required to include a statement regarding the application of contingency funds during the year, if applicable, as well as disclosing the risks mitigated by the application of those contingency funds. Defence’s Project Risk Management Manual (PRMM version 2.4, page 110)⁶⁸ requires that contingency be applied for identified risk mitigation activities which have been assessed as being cost effective and representing value for money.

1.43 Contingency provisions for projects are not programmed or funded in cash terms.⁶⁹ As such, projects are encouraged to meet contingency funding requirements from within their currently programmed cash funding. If this cannot be achieved, a project may then propose to access contingency funding from the relevant capital program (Approved Major Capital Investment Program (AMCIP), Facilities and Infrastructure Program (FIP) and ICT Capital Program).

66 Department of Defence, *Management of Contingency Budgets in Defence Acquisition Projects*, Defence, Canberra, 2019, p. 2.

67 *ibid.*, p. 5.

68 In August 2019, Defence issued version 2.5 of the PRMM document. This latest version will be used to review projects’ contingency statement and management in the 2019–20 MPR.

69 Department of Defence, *Management of Contingency Budgets in Defence Acquisition Projects*, Defence, Canberra, 2019, p. 3.

If this cannot be achieved, the contingency call will be presented to the Defence Investment Committee, which if agreed will potentially be met by budget offsets across the whole Integrated Investment Program.⁷⁰

1.44 Three projects in the MPR had contingency funds applied in 2018–19: MRH90 Helicopters (supportability and performance risks), Repl Replenishment Ships (implementation of capability requirements such as spares and identification of friend or foe, and delivery from Spain to Australia), and Battle Comm. Sys. (Land) 2B (Interface Control Integration).

1.45 In 2017–18, the remaining scope of two projects was transferred into Collins R&S (SEA 1114 Phase 3 and SEA 1439 Phase 5B1). In 2018–19, the associated budgets were transferred to Collins R&S. A contingency allocation was transferred along with the budget of SEA 1439 Phase 5B1. Previous to this, Collins R&S did not have a contingency allocation. As a result, all 26 projects in the 2018–19 MPR now have a contingency allocation.

1.46 The ANAO's examination of projects' contingency logs as at 30 June 2019 highlighted that:

- the clarity of the relationship between contingency allocation and identified risks continues to be an issue. Five projects (LHD Ships, Repl Replenishment Ships, CMATS, ANZAC ASMD 2B, and Pacific Patrol Boat Repl) did not explicitly align their contingency log with their risk log, by including risk identification numbers as required by PRMM version 2.4; and
- there were two project offices (CMATS and ANZAC Air Search Radar Repl) that did not meet all the requirements of PRMM version 2.4 in terms of keeping a record of review of contingency logs. However, the ANAO observed that the information required could be located in other documents.

1.47 Non-compliance with PRMM version 2.4 has resulted in inconsistent approaches between projects in the management of contingency logs, with some projects advising that they will not remedy these non-compliances until the outcomes of the risk management reform within CASG are known (see para 1.59).

Reporting environment

1.48 On 4 April 2018, Defence advised project offices that project financial reporting for 2017–18 PDSSs would be prepared on the same basis as project approvals and expenditure represented in the Portfolio Budget Statements and the Defence Annual Report (i.e. on a cash basis).⁷¹

1.49 Defence obtains cash expenditure data using a management reporting tool called BORIS. Prior to the 2017–18 MPR, accrual expenditure data was extracted from the Financial Management Information System known as ROMAN. Given the change in the extraction method, the ANAO requested that Defence perform reconciliations of the cash expenditure figures from BORIS to ROMAN for each project.

1.50 In the 2018–19 MPR, Defence continued to report the projects' financial information on a cash basis and therefore continued to perform these reconciliations. This activity concluded in October 2019 and enabled the ANAO to obtain assurance over the cash expenditure. The Defence

70 Department of Defence, *Management of Contingency Budgets in Defence Acquisition Projects*, Defence, Canberra, 2019, p. 4.

71 Auditor-General Report No.26 2017–18 *2016–17 Major Projects Report*, p. 41.

Chief Finance Officer has determined that, from the 2020–21 MPR onwards, Defence would report expenditure data on an accrual basis. The 2019–20 MPR should, therefore, be the last year that these reconciliations need to be performed.

Reporting cost variations since Second Pass Approval and personnel costs

1.51 In May 2018, the JCPAA wrote to the Auditor-General to request that the ANAO report back to it 'on how Defence major project cost variations and the costs of retaining project staff over time might be reported annually in future Major Projects Reports.'⁷²

1.52 A new table was included in the 2017–18 MPR showing all budget variations post initial Second Pass Approval for projects. Refer to Table 8 on page 42.

Project Personnel Numbers and Costs

1.53 In terms of calculating the cost of retaining project staff, Defence advised the ANAO in November 2018 that its current IT systems do not provide a direct mapping of personnel to projects. It noted that personnel often work on multiple projects and sustainment activities at any given time.

1.54 The ANAO observed during fieldwork in 2019 that several MPR projects had staff who worked concurrently on other projects, which included shared corporate staff. Some of these projects did not have systems in place to record accurately the proportion of time these shared staff attributed to the project. Moreover, the ANAO observed that MPR projects used different methods to record personnel data.

1.55 Defence has advised the ANAO that it is not yet in a position to provide the staff cost component of projects and its systems are not capable of calculating the cost of retaining project staff over time. Accordingly, Defence has not provided any data on the costs of project staff for projects in the MPR. The ANAO will continue to monitor Defence's progress in recording project personnel numbers and costs in future reports.

Enterprise Risk Management Framework

1.56 While major risks and issues data in the PDSSs remains excluded from the formal scope of the Auditor-General's *Independent Assurance Report*⁷³, material inconsistencies identified in relation to this information are required to be detailed in the report. The following information is included to provide an overall perspective of how risks and issues are managed within Defence and the selected Major Projects.

1.57 Risk management has been a focus of the MPR since its inception. The CASG risk management environment consists of multiple policies and varying implementation mechanisms and documentation. There are multiple group-level (i.e. CASG), sub-group (i.e. Divisional) and project-level risk management documents. The primary focus of the ANAO's examination of risk management is at the project level, in order to provide assurance over the PDSSs.

1.58 At the Group level, Deputy Secretary CASG issued a directive in May 2017 establishing a CASG Risk Management Reform Program to implement a risk management model that is situated

72 The reporting of cost variations was also raised at the JCPAA's public hearing into the 2016–17 MPR on 23 March 2018 and at estimates hearings of the Finance and Public Administration Legislation Committee on 27 February 2018.

73 See paragraph 1.3 in **Part 1** of this report for more information.

within Defence's risk management framework. To date, Defence has delivered the first two phases of the reform (establishment of the CASG Risk Management Group Model, and the associated support activities such as training and consultation). The third phase of the reform — which includes the development of risk management policies and toolsets for use by projects — was initially planned to be concluded in June 2019. Defence has advised that it has experienced delays in completing certain deliverables, and that the contract for the completion of the Risk Reform Program has been extended to February 2020. Defence expects that, once the Reform has concluded, implementation will take a number of annual cycles to reach maturity.⁷⁴

1.59 The ANAO has observed that some projects chose not to review risk and issues management procedures until this stage has been completed, as noted at paragraph 1.47. The ANAO will continue to monitor the implementation of the reform as part of future reviews, but will not be able to consider including risks and issues in the scope of the MPR until the reform is sufficiently progressed.

1.60 In 2018–19, the ANAO again examined project offices' risk and issue logs at the Group and Service level, which are predominantly created and maintained utilising spreadsheets and/or Predict! software.⁷⁵ Overall, the issues with risk management that the ANAO observed related to:

- variable compliance with corporate guidance, for example all projects had a Risk Management Plan, however; 10 out of 26 Major Projects did not validate the currency of the Risk Management Plan in line with PRMM version 2.4⁷⁶;
- the visibility of risks and issues when a project is transitioning to sustainment;
- for one project (Joint Strike Fighter), sustainment and acquisition risks are managed together, despite Defence risk management policy for acquisition and sustainment providing inconsistent guidance⁷⁷;
- the frequency with which risk and issue logs are reviewed to ensure risks and issues are appropriately managed in a timely manner, and accurately reported to senior management;
- risk management logs and supporting documentation of variable quality, particularly where spreadsheets are being used⁷⁸; and
- lack of quality control resulting in inconsistent approaches in the recording of issues within Predict!

1.61 The ANAO has previously observed that Defence's use of spreadsheets as a primary form of record for risk management is a high risk approach. Spreadsheets lack formalised change/version control and reporting, thereby increasing the risk of error. This can make

⁷⁴ See Part 2 of this report.

⁷⁵ Predict! is a risk management tool used by Defence to manage risks and issues.

⁷⁶ The Defence Project Risk Management Manual version 2.4, Business Rule 2 requires the project manager to validate the currency of the RMP on transition from one stage of the Materiel Life Cycle to the next stage and, for any stage that is longer than six months, every six months within that stage.

⁷⁷ As at 30 June 2019, Defence risk management guidance for acquisition projects was the DMM (PROJ) 11-0-002 *Project Risk Management Manual*, version 2.4, 2013; and guidance for sustainment products was the DMM (LOG) 04-0-003, *Defence Materiel Manual (Logistics Management)*, which provide different consequence and likelihood descriptors.

⁷⁸ Spreadsheets lack formalised change/version control and reporting, increasing the risk of error.

spreadsheets unreliable corporate data handling tools as accidental or deliberate changes can be made to formulae and data, without there being a record of when, by whom, and what change was made. As a result, a significant amount of quality assurance is necessary to obtain confidence that spreadsheets are complete and accurate at 30 June, which is not an efficient approach. The ANAO's review of CASG's 26 project offices indicates that 15 utilise spreadsheets⁷⁹ as their primary risk management tool, five utilise Predict!⁸⁰, one (Maritime Comms) utilises both Microsoft Excel and Predict!, two (Joint Strike Fighter and CMATS) utilise a bespoke SharePoint based tool, one (MH-60R Seahawk) utilises Microsoft Word, one (Night Fighting Equip Repl) utilises the Project Performance Review (see paragraph 1.31), and one (HATS) does not currently manage any risks given the delivery of all primary project elements. Defence has advised that a risk management system will not be mandated until the outcomes of the CASG risk reform are known (see paragraph 1.58).

1.62 The JCPAA recommended in September 2018 that Defence plan and report a methodology to the Committee showing how acquisition projects can transition from the use of spreadsheet risk registers to tools with better version control.⁸¹ In response, Defence advised that the Risk Reform Program was developing a revised methodology for managing project risk and intended to commence prioritised transition of projects into the remodelled risk management approach from the first quarter of 2019. However, the ANAO observed in the course of its 2019 site visits that MPR projects had not received project specific guidance. Defence advised the ANAO in October 2019 that it is looking to mandate a standardised ICT tool for the management of risk across projects. The decision on this tool is expected in November 2019. The 2019–20 MPR will report on MPR projects' use of the mandated tool.

Project maturity framework

1.63 Project Maturity Scores have been a feature of the Major Projects Report since its inception in 2007–08. The *DMO Project Management Manual 2012* defined a maturity score as:

The quantification, in a simple and communicable manner, of the relative maturity of capital investment projects as they progress through the capability development and acquisition life cycle.⁸²

1.64 Maturity scores are a composite indicator, cumulatively constructed through the assessment and summation of seven different attributes. The attributes are: Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support, which are assessed on a scale of one to 10.⁸³ Comparing the maturity score against its

79 The 15 projects are: MRH90 Helicopters, Growler, Overlander Medium/Heavy, LHD Ships, Hawkei, Battlefield Airlifter, Repl Replenishment Ships, Additional MRTT, ANZAC ASMD 2B, Collins Comms and EW, Collins R&S, Battle Comm. Sys. (Land) 2A, ANZAC Air Search Radar Repl, UHF SATCOM, and LHD Landing Craft.

80 The five projects are: AWD Ships, P-8A Poseidon, Offshore Patrol Vessel, Battle Comm. Sys. (Land) 2B, and Pacific Patrol Boat Repl.

81 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), List of Recommendations, p. vii.

82 Department of Defence, DMM (PROJ) 1-0-001, *DMO Project Management Manual 2012*, Defence, Canberra, 2012, p. 75. This manual has since been superseded by PM 002 *CASG Project Management Manual* which does not refer to project maturity.

83 See Appendix 4 in **Part 2** of this report and footnote 21 for further detail.

expected life cycle gate benchmark provides internal and external stakeholders with a useful indication of a project's progress.

1.65 The ANAO has previously identified that the policy guidance underpinning the attribution of maturity scores would benefit from a review for internal consistency and the relationship to Defence's contemporary business. For example, allocating approximately 50 per cent of the maturity score at Second Pass Approval, regardless of acquisition type, is often inconsistent with the proportion of project budget expended, and the remaining work required to deliver the project. Further, the existing project maturity score model does not always reflect a project's progress during the often protracted build phase, particularly for developmental projects. During this phase it can be expected that maximum expenditure will occur, and that many risks will be realised, some of which will only emerge as test and evaluation activities are pursued through to acceptance into operational service.

1.66 In 2016⁸⁴ and again in 2017⁸⁵, the JCPAA recommended that Defence update the policy on Project Maturity Scores. At the JCPAA hearing held on 23 March 2018, Defence undertook to update the framework by mid-2018 with a two-stage process: first to remediate inconsistencies in the policy and accommodate Interim Capability Life Cycle terminology; then to undertake a more substantial amendment of the policy.⁸⁶ In September 2018, the JCPAA sought a written update from Defence outlining progress towards updating the policy.⁸⁷ Also in September 2018, Defence advised the ANAO that the maturity score process was being re-considered within the CASG risk reform context. In December 2018, Defence reported this to the JCPAA in its response to the 2018 recommendation.

1.67 In October 2019, Defence advised the ANAO that a draft Project Maturity Score policy has been developed (renamed the 'Project Progress Score') and will be trialled and evaluated in late 2019, for implementation in the 2020–21 MPR. Defence further advised that while the progress score has been decoupled from the risk reform work, it will be informed by existing project risk polices and enhanced by improvements arising out of the risk reform framework. The ANAO was provided the draft Project Progress Score policy in November 2019. The draft indicates that the Project Progress Score will be calculated based on 10 project attributes, leading to a total score out of 100, instead of the seven attributes and total score out of 70 under the current Project Maturity Score policy. The draft policy also notes that 'The [Project Progress Score] is not designed as an assessment of project risk'.

Caveats and deficiencies

1.68 Defence has not defined the terms 'caveat' or 'deficiency' to the declaration of significant milestones in its internal policies and procedures. The ANAO has observed use of these terms by

84 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 458: Defence Major Projects Report (2014–15)*, (2016), Recommendation 3, p. 50. The JCPAA sought an update from Defence in the course of public hearings on 31 March 2017.

85 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 468: Defence Major Projects Report (2015–16)*, (2017), Recommendation 2, p. vii.

86 Commonwealth, *Public Hearing*, Joint Committee of Public Accounts and Audit, 23 March 2018, Mr Greg Divall, Group Business Manager, Capability Acquisition and Sustainment Group, Department of Defence, p. 11.

87 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), Recommendation 1, p. vii.

Defence to represent exceptions to the achievement of significant milestones declared by Defence such as IMR, IOC, FMR and FOC.

1.69 The 2017–18 MPR noted a ‘reduced trend of Major Projects which had achieved significant milestones with caveats’ and Defence’s advice that it discourages Independent Assurance Reviews recommending caveats at FOC.⁸⁸ Only one project (Growler) achieved a major milestone with caveats in 2017–18.⁸⁹

1.70 In 2018–19, Defence declared more milestones with caveats than in 2017–18, as follows:

- P-8A Poseidon — Defence declared two caveats to the achievement of the Operational Capability 2 (OC2) milestone in February 2019, related to deficiencies of spares (Fly Away Kits) and Operational Flight Trainer (pilot simulator) qualification; and
- Growler — Defence declared one caveat to the achievement of the IOC milestone in February 2019, related to in-country aircrew training not yet possible due to delays in delivery of the Mobile Threat Training Emitter System.

1.71 The Chief of Air Force acknowledged achievement of FMR for the Additional MRTT project in October 2019, with an ‘accepted deficiency’ relating to the non-delivery of a minor piece of support equipment.

1.72 In addition, the Chief of Navy declared FOC for the LHD Ships project in November 2019, with seven ‘notable deficiencies’. Key deficiencies referenced in the PDSS relate to technical issues and defects, primarily affecting the propulsion pods, and Integrated Logistic Support. Remediation is underway through the Transition and Remediation Program, and the prime contract has been extended to allow for closure of the outstanding contractual requirements.⁹⁰

1.73 The ANAO will continue to monitor Defence’s declaration and resolution of caveats (or exceptions) to the achievement of significant Capability Milestones in future reviews. This will include projects which have been removed from the MPR with outstanding caveats which are required to be reported by Defence in the *Statement by the Secretary of Defence* until their final status is accepted by the Capability Manager.⁹¹

88 Auditor-General Report No.20 of 2017–18, *2017–18 Major Projects Report*, paragraphs 1.61–1.62, p. 32.

89 The following projects which have exited the MPR, had also achieved FOC with caveats: Wedgetail (achieved FOC with caveats in 2015), Overlander Light (achieved FOC with caveats in 2016), ARH Tiger Helicopters (achieved FOC with caveats in 2016).

90 See the LHD Ships PDSS in **Part 3** of this report.

91 This requirement was included in the *2018–19 Major Projects Report Guidelines* endorsed by the JCPAA in September 2018 which are included in **Part 4** of this report.

2. Analysis of Projects' Performance

2.1 Performance information is important in the management and delivery of major Defence equipment acquisition projects (Major Projects). It informs decisions about the allocation of resources, supports advice to government, and enables stakeholders to assess project progress.

2.2 Project performance has been the subject of many of the reviews of the Department of Defence (Defence), and a consistent area of focus of the Joint Committee of Public Accounts and Audit (JCPAA) since the first Major Projects Report (MPR). This chapter progresses previous Australian National Audit Office (ANAO) analysis over project performance.

Project performance analysis by the ANAO

2.3 The major dimensions of projects' performance are:

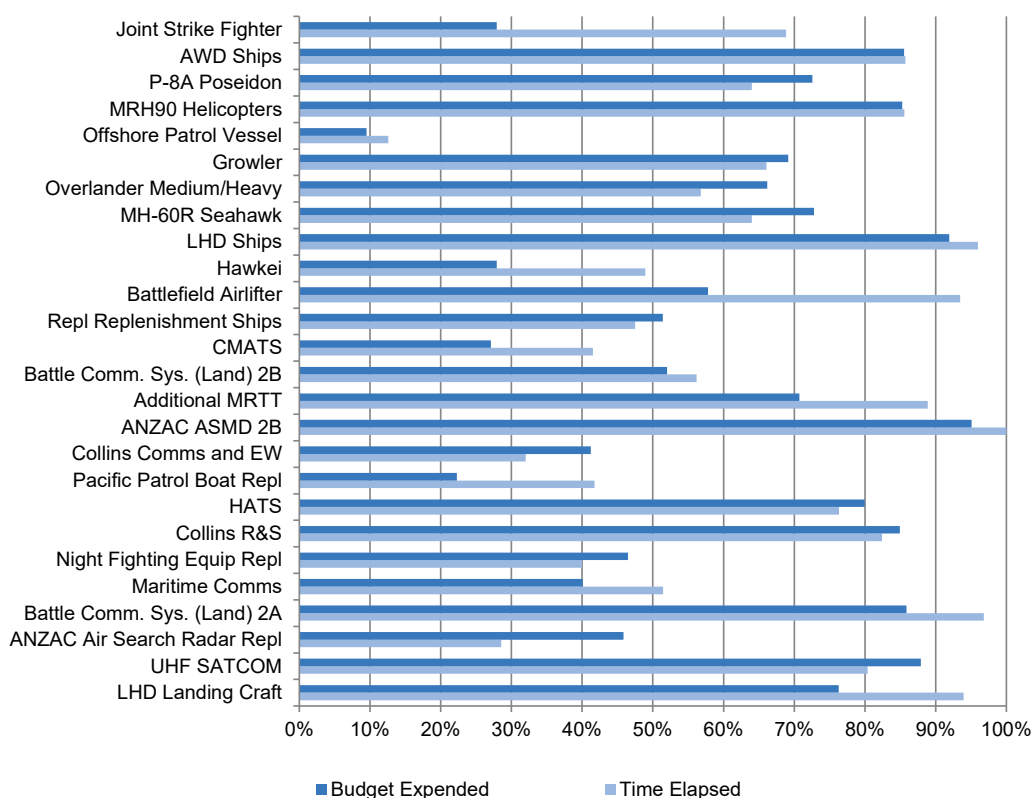
- Cost performance (pp. 37–49) — this includes the percentage of budget expended (Budget Expended), changes in budget since Second Pass Approval, in-year changes to budget, and in-year expenditure;
- Schedule performance (pp. 50–61) — this includes the percentage of time elapsed (Time Elapsed), total schedule slippage, and in-year changes to schedule; and
- Capability performance (pp. 62–66) — this includes the percentage of key materiel capabilities delivered (Capability Delivery Progress).

2.4 The ANAO has previously utilised Defence's prediction of expected final capability, as reported in Section 4.1 of each Project Data Summary Sheet (PDSS). In 2015–16, the ANAO derived an indicator for 'Capability Delivery Progress', which aims to show the current capability delivered, in terms of capability elements included within the agreed Materiel Acquisition Agreements (MAAs). These performance indicators are measured in percentage terms, to enable comparisons between projects of differing scope, and to provide a view across the selected projects of progress and performance.

2.5 The following sections of this chapter provide analysis relating to the three principal dimensions of project performance noted above. This includes in-year information, longitudinal analysis and the results of project progress for the year-ended 30 June 2019. Figure 2 directly compares cost performance with schedule performance through two metrics, Budget Expended and Time Elapsed.⁹²

⁹² A project's budgeted cost and schedule data is at 30 June 2019, and may differ from originally approved budgets and schedules.

Figure 2: Budget Expended and Time Elapsed



Source: ANAO analysis of the 2018–19 PDSSs.

2.6 Figure 2 shows that for nearly all projects (25 of 26), Budget Expended is broadly in line with (within 10 per cent), or lagging, Time Elapsed. This relationship is generally expected in an acquisition environment predominantly based on milestone payments. However, due to the varying complexity, stages and acquisition approaches across the portfolio of projects, further analysis of these simple performance measures is required to provide a better understanding of key variances.

2.7 Where Budget Expended is significantly lagging Time Elapsed, the project schedule may be at risk — i.e. expenditure lags may indicate delays in milestone achievement. In 2018–19, the Budget Expended for three projects lagged Time Elapsed by at least 20 per cent. For two of these three projects, milestones have been delayed, as detailed below:

- Hawkei (Budget Expended 28 per cent, Time Elapsed 49 per cent) — the project’s achievement of milestones has been delayed by reliability issues, design maturity, and production delays. The project is expected to complete its Production Reliability Acceptance Test 21 months later than originally contracted; and

- Battlefield Airlifter (Budget Expended 58 per cent, Time Elapsed 93 per cent) — the project has not signed contracts for the acquisition of training devices, and some other equipment is also outstanding. Delivery of this equipment has been significantly delayed; as at 30 June 2019, the project planned to deliver these items after the achievement of the FOC milestone.

2.8 For the third project, Joint Strike Fighter (Budget Expended 28 per cent, Time Elapsed 69 per cent), the expenditure lag reflects the recent transition from the aircraft development stage, where relatively little budget was expended. The project is now entering into main production contracts for aircraft, with in-year expenditure increasing compared to prior years.

2.9 Where Budget Expended leads Time Elapsed, the project budget may be at risk — i.e. expenditure increases may indicate real cost increases. However, for the one project where Budget Expended leads Time Elapsed by 10 per cent or more, the cause of the variance relates to work being performed prior to Second Pass Approval. For ANZAC Air Search Radar Repl (Budget Expended 46 per cent, Time Elapsed 29 per cent), this project spent approximately nine per cent of its budget prior to Second Pass, to conduct a Risk Reduction Program and make early purchases of equipment to ensure the schedule would be met.⁹³

2.10 In each case of significant variance between Budget Expended and Time Elapsed, the performance information highlights projects that may require further attention. This is to ensure that unspent funds are returned to the Defence budget for re-allocation in a timely manner, the timing of key deliverables remains in focus, or planning focuses on bringing together all elements in a timely manner, as equipment is delivered.

Cost performance analysis

Budget Expended and Project Maturity

2.11 Figure 3, below, sets out each project's Budget Expended against Project Maturity⁹⁴ and shows that Budget Expended lags Project Maturity for the majority of projects (22 of 26). This relationship is typical of acquisition projects for two reasons:

- in an acquisition environment predominantly based on milestone payments, projects will typically develop confidence in delivering their scope through design reviews, testing and demonstration, ahead of formal acceptance of milestone achievement or equipment deliveries (and expenditure of budget); and
- more generally, Budget Expended will often lag Project Maturity as the result of Defence's project maturity framework attributing approximately 50 per cent (35 out of 70 points) of

93 Between First Pass Approval in May 2015 and Second Pass Approval in August 2017, Government approved \$65.6 million of funding to undertake these activities.

94 The JCPAA has previously recommended that Defence work with the ANAO to review and revise its policy regarding Project Maturity Scores. Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 458: Defence Major Projects Report (2014–15)*, (2016), pp. 49–50, and Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 468: Defence Major Projects Report (2015–16)*, (2017), pp. 9–10. In Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), the JCPAA recommended that Defence advise the Committee of progress in updating Project Maturity Scores.

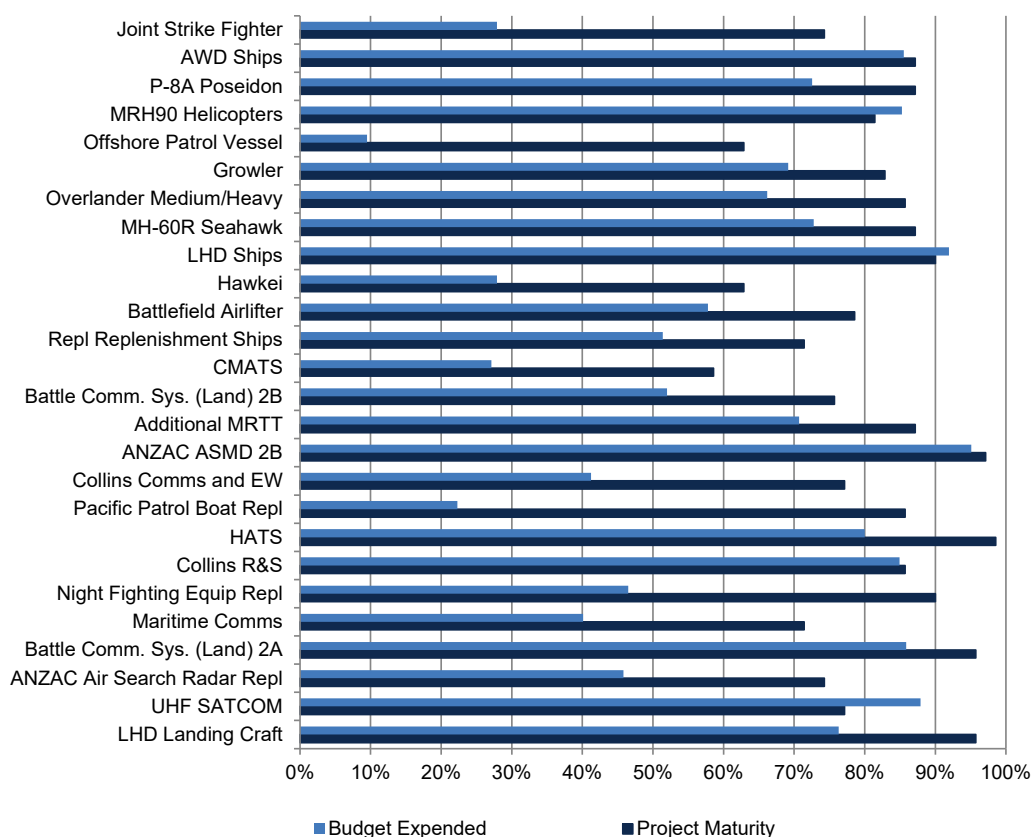
total Project Maturity at Second Pass Approval (the main investment decision by government)⁹⁵ prior to any significant expenditure of budget.

2.12 In both cases, the Budget Expended is expected to catch up to Project Maturity over the course of the project's life, with projects approaching closure expected to show Budget Expended and Project Maturity broadly in line with each other.

2.13 Budget Expended lags Project Maturity with a variance of 20 per cent or more in 12 projects. As expected, the majority of these projects are at a relatively early stage and have expended minimal budget while progressing through design and testing phases, or are waiting on significant amounts of equipment to be delivered. The exceptions to this are projects that have delivered the majority of their major equipment, leading to an advanced maturity score, while the budget expended is lagging as items such as training equipment or weapons are yet to be delivered and paid for. Projects fitting this pattern are Battlefield Airlifter (all aircraft have been delivered while some training devices and other equipment are outstanding), and Night Fighting Equip Repl (most Tranche 1 equipment has been delivered while the evaluation of future Tranche 2 equipment is still in its early stages).

2.14 Where Budget Expended leads Project Maturity by a significant amount, this may indicate that the project is behind in development or achievement of its scope, or that the required scope is not affordable. There are no instances where Budget Expended leads Project Maturity by 20 per cent or more. The largest variance is for UHF SATCOM, where Budget Expended leads Project Maturity by 11 per cent. The project's maturity score has been affected by delays in software development, while the majority of budget has been expended and the project has funded further development with contingency.

95 The JCPAA has observed that 'Defence remains behind the Committee's expectations on working to update Project Maturity Scores – the Committee recommended reform in this area several years ago, and changes remain slow and uncertain.' Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016-17)*, (2018), p. 4. Refer to paragraphs 1.63 to 1.67.

Figure 3: Budget Expended and Project Maturity

Source: ANAO analysis of the 2018–19 PDSSs.

Second Pass Approval and 30 June 2019 approved budget

2.15 Figure 4, below, compares each project's approved budget at initial Second Pass Approval and its approved budget at 30 June 2019.

2.16 The total budget for the 26 projects at 30 June 2019 was \$64.1 billion, a net increase of \$24.4 billion, when compared to the approved budget at initial Second Pass Approval of \$39.7 billion.

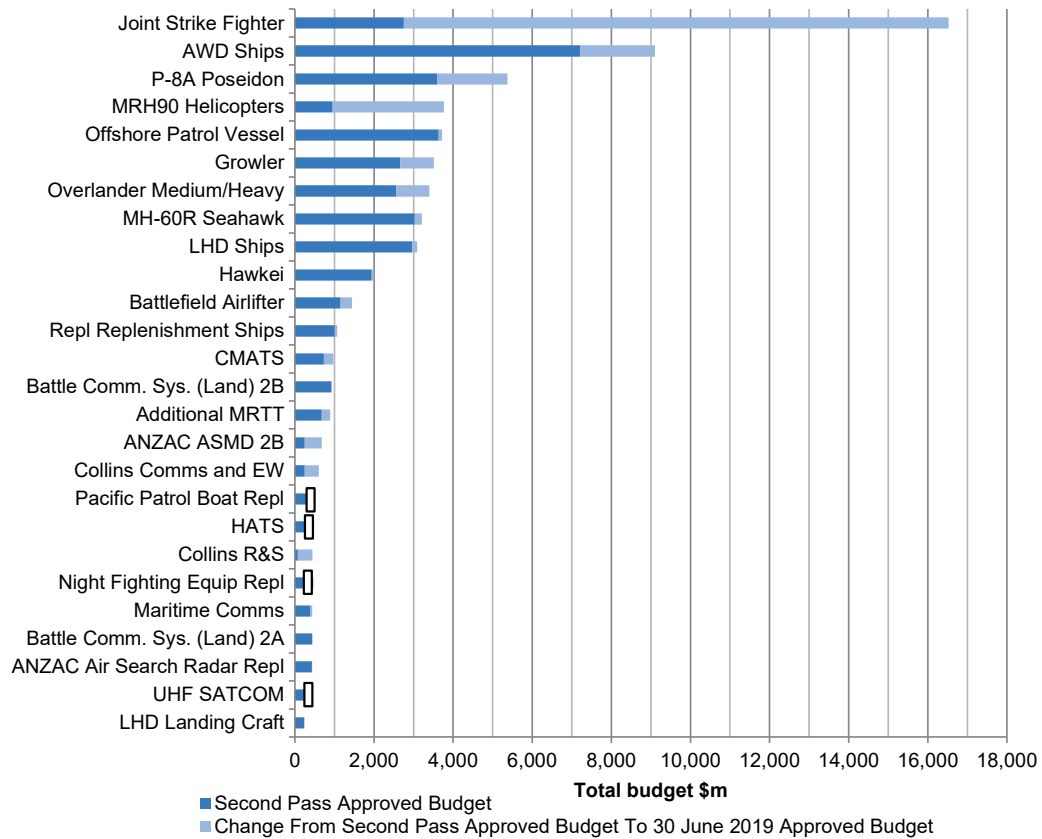
2.17 Figure 4 indicates all budget variations from initial Second Pass Approval. Six projects have variations of \$500 million or more. The list below describes the components of these variations:

- Joint Strike Fighter — increase of \$13.8 billion, comprising \$10.5 billion for 58 additional aircraft in 2013–14, \$2.9 billion for exchange rate variation and \$0.4 billion for price indexation⁹⁶;
- AWD Ships — increase of \$1.9 billion, comprising \$1.2 billion for a Real Cost Increase⁹⁷ in July 2015 to complete the project, \$1.2 billion for price indexation, offset by a \$0.4 billion decrease for exchange rate variation and a \$0.1 billion decrease for transfers to facilities projects in 2013–14;
- P-8A Poseidon — increase of \$1.8 billion, comprising \$1.3 billion for four additional aircraft in 2015–16 and \$0.5 billion for exchange rate variation;
- MRH90 Helicopters — increase of \$2.8 billion, comprising \$2.6 billion for 34 additional aircraft in 2005–06 and other minor scope changes, and \$0.7 billion for price indexation, offset by a \$0.3 billion decrease due to scope transfers for facilities, and a \$0.1 billion decrease for exchange rate variation;
- Growler — increase of \$0.8 billion, comprising \$0.9 billion for exchange rate variation, \$0.3 billion for the Mobile Threat Training Emitter System and weapons, offset in 2015–16 by a \$0.2 billion decrease for transfers to facilities projects and \$0.2 billion for the return to the Defence budget of surplus funds and contingency for reallocation; and
- Overlander Medium/Heavy — increase of \$0.8 billion, comprising \$0.7 billion ‘project supplementation’ to reduce cost pressures and \$0.1 billion exchange rate variation.

⁹⁶ See also paragraphs 1.38 to 1.39.

⁹⁷ See Note 2 of Figure 4, below, for further information.

Figure 4: Projects' initial Second Pass Approval and 30 June 2019 approved budget (\$m)



Note 1: □ indicates that the budget for the project at 30 June 2019 is less than the original budgeted cost.

Note 2: On 22 May 2015, the Minister for Defence and the Minister for Finance announced there would be further delays to the delivery of the Air Warfare Destroyers and an additional \$1.2 billion would be required to complete the project. The budget increase was incorporated into the approved project budget as at 30 June 2016.

Source: ANAO analysis of the 2018–19 PDSSs.

2.18 Budget variances since initial Second Pass Approval may result from: increasing the scope of a project via revised Second Pass Approvals, programmatic decisions, Real Cost Increases/Decreases, transfers to/from other projects and budgetary adjustments. A summary of budget variations is at Table 3 (page 13) and a more detailed analysis of this variance is included in Table 8, below.

Table 8: Budget variation post initial Second Pass Approval by variation type as at 30 June 2019 and Performance Audits ¹

Project	Initial Second Pass Approval Budget \$m	Variation	Explanation of Variation	Year/s of Variation	Total Amount of Variation \$m	Performance Audits
AIR 6000 Phase 2A/2B New Air Combat Capability ²	2751.6 (Stage 1)	Scope increase/Budgetary Adjustments/Transfer	58 additional aircraft (Stage 2 Second Pass Approval) offset by minor transfers	2013–14 2017–18	10,504.1	Auditor-General Report No.14 of 2018–19: <u>Joint Strike Fighter — introduction into service and sustainment planning</u> Auditor-General Report No.6 of 2012–13: <u>Management of Australia's Air Combat Capability – F-35A Joint Strike Fighter Acquisition</u>
SEA 4000 Phase 3 Air Warfare Destroyer Build	7207.4	Real Cost Increase/Budget transfers	Real Cost Increase of \$1.2b offset by minor transfers for facilities in 2014	2013–14 and 2015–16	1089.6	Auditor-General Report No.22 of 2013–14: <u>Air Warfare Destroyer Program</u> Auditor-General Report No.57 of 2010–11: <u>Acceptance into Service of Navy Capability</u>
AIR 7000 Phase 2B Maritime Patrol and Response Aircraft System	3577.7	Scope increase	Four additional aircraft \$1m transferred from DST Group from 2017-18 surplus funds	2015–16 2017–18	1296.4	N/A
AIR 9000 Phase 2/4/6 Multi-Role Helicopter ³	957.2 (Phase 2)	Scope increase/Budget transfers	34 additional aircraft (Phase 4/6 Second Pass Approval), offset by minor transfers	2005–06 2018-19	2270.5	Auditor-General Report No.9 of 2015–16: <u>Test and Evaluation of Major Defence Equipment Acquisitions (paragraph 4.54)</u> Auditor-General Report No.52 of 2013–14: <u>Multi-Role Helicopter Program</u> Auditor-General Report No.57 of 2010–11: <u>Acceptance into Service of Navy Capability</u>
SEA 1180 Phase 1 Offshore Patrol Vessel	3632.8	N/A	N/A	N/A	0.0	Auditor-General Report No.39 of 2017–18: <u>Naval Construction Programs – Mobilisation</u>

Project	Initial Second Pass Approval Budget \$m	Variation	Explanation of Variation	Year/s of Variation	Total Amount of Variation \$m	Performance Audits
AIR 5349 Phase 3 EA-18G Growler Airborne Electronic Attack Capability	2641.4	Scope increase/Real Cost Decrease	Additional training devices offset by return of surplus funds and other minor transfers	2014–15, 2015–16 and 2016–17	(91.6)	N/A
LAND 121 Phase 3B Medium Heavy Capability, Field Vehicles, Modules and Trailers ²	2549.2	Real Cost Increase ⁴ /Scope/Budgetary adjustment	Project supplementation (\$684.2m) and additional vehicles, trailers and equipment (\$28.0m) at Revised Second Pass Approval Budgetary Adjustment (- \$30.0m)	2013–14 2018–19	682.2	Auditor-General Report No.52 of 2014–15: Australian Defence Force's Medium and Heavy Vehicle Fleet Replacement (LAND 121 Phase 3B)
AIR 9000 Phase 8 Future Naval Aviation Combat System Helicopter	3029.6	Budget transfer	Transfer to Defence Support and Reform Group	2013–14	(39.2)	N/A
JP 2048 Phase 4A/4B Amphibious Ships (LHD)	2958.3	Budget transfer	Transfer from Defence Science and Technology Group	2008–09	9.3	Auditor-General Report No.9 of 2015–16: Test and Evaluation of Major Defence Equipment Acquisitions Auditor-General Report No.57 of 2010–11: Acceptance into Service of Navy Capability
LAND 121 Phase 4 Protected Mobility Vehicle – Light	1945.0	N/A	N/A	N/A	0.0	Auditor-General Report No. 6 of 2018–19: Army's Protected Mobility Vehicle – Light
AIR 8000 Phase 2 Battlefield Airlift – Caribou Replacement	1156.5	N/A	N/A	N/A	0.0	Auditor-General Report No.3 of 2013–14: AIR 8000 Phase 2 – C-27J Spartan Battlefield Airlift Aircraft

Project	Initial Second Pass Approval Budget \$m	Variation	Explanation of Variation	Year/s of Variation	Total Amount of Variation \$m	Performance Audits
SEA 1654 Phase 3 Maritime Operational Support Capability	1004.6	Budget Transfer	Transfer for training offset by minor transfers	2015–16 2018–19	69.4	N/A
AIR 5341 Phase 3 Civil Military Air Management System	731.4	Real Cost Increase/Budgetary Adjustment	Real Cost Increase offset by minor transfers	2017–18	240.7	Auditor-General Report No.4 of 2019–20: OneSky: Contractual Arrangements Auditor-General Report No.46 of 2016–17: Conduct of the OneSKY Tender Auditor-General Report No.1 of 2016–17: Procurement of the International Centre for Complex Project Management to Assist on the OneSKY Australia Program
AIR 7403 Phase 3 Additional KC-30A Multi-role Tanker Transport	681.9	Scope increase/Budgetary adjustment	Additional capability (Government Transport and Communication) offset by minor transfers	2015–16	182.9	N/A
SEA 1448 Phase 2B ANZAC Anti-Ship Missile Defence	248.8	Budget transfers/Scope increase	Scope increases offset by minor transfers	2005–06 2011–12	363.4	Auditor-General Report No.30 of 2018–19: ANZAC Class Frigates - Sustainment
SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Improvement Program	247.7 (Stage 1)	Scope increase	Additional capability (Stage 2 Second Pass Approval)	2016–17	351.5	Auditor-General Report No.23 of 2008–09: Management of the Collins-class Operations Sustainment
JP 9000 Phase 7 Helicopter Aircrew Training System	483.8	Budget transfers	Transfer of budget to Estate and Infrastructure Group for Facilities Activities	2018–19	(0.1)	N/A

Project	Initial Second Pass Approval Budget \$m	Variation	Explanation of Variation	Year/s of Variation	Total Amount of Variation \$m	Performance Audits
SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability	72.0	Scope increase/ Budget transfers/ Budgetary adjustments	Implementation of full scope, offset by minor transfers	2000-01 2001-02 2002-03 2004-05 2005-06 2006-07 2018-19	305.0	Auditor-General Report No.23 of 2008-09: Management of the Collins-class Operations Sustainment
SEA 1442 Phase 4 Maritime Communications Modernisation	385.7	N/A	N/A	N/A	0.0	Auditor-General Report No.30 of 2018-19: ANZAC Class Frigates - Sustainment
JP 2072 Phase 2A Battlespace Communications System Phase 2A	436.4	Real Cost Decrease	Real Cost Decrease	2017-18	(25.6)	N/A
SEA 1448 Phase 4B ANZAC Air Search Radar Replacement	427.8	N/A	N/A	N/A	0.0	Auditor-General Report No.30 of 2018-19: ANZAC Class Frigates - Sustainment
JP 2008 Phase 5A Indian Ocean Region UHF SATCOM	460.9	Real Cost Decrease	Real Cost Decrease	2013-14	(18.0)	N/A
JP 2048 Phase 3 Amphibious Watercraft Replacement	235.7	Budget transfer	Correction to transfer price	2013-14	(7.7)	Auditor-General Report No.9 of 2015-16: Test and Evaluation of Major Defence Equipment Acquisitions (paragraph 4.68)
Total	37,823.4				17,182.8	

Note 1: Some projects have multiple Second Pass Approvals. This table reports on variations since the first, i.e. initial. Second Pass Approval.

Note 2: Three projects have had multiple Second Pass Approvals. For the purposes of this table, the ANAO has used the earliest Second Pass Approval.

Note 3: Projects that have had no Real Variations to their budget, and have not appeared in any performance audits, do not appear in this table. They are: Battle Comm. Sys. (Land) 2B, Pacific Patrol Boat Repl. and Night Fighting Equip Repl. For a definition of 'Real Variations' see page 410 in the 2018-19 MPR Guidelines in **Part 4** of this report.

Note 4: Described by Defence as 'project supplementation'. Refer to Note 3 of Table 3.

Budget performance

2.19 The following figures and tables illustrate the budget performance of the 26 selected projects by way of:

- in-year budget variations by project (see Table 9, below); and
- expenditure forecasting performance against actual expenditure for 2018–19 (see Figure 5, on page 49).

In-year budget variance analysis

2.20 Table 9, below, sets out the in-year budget variations for each project. Overall, the approved budget for the projects as at 30 June 2019 increased by \$1225.1 million, or 2.1 per cent, compared to their approved budget as at 30 June 2018. This was driven by exchange rate variation increases of \$1221.6 million and net real increases of \$3.7 million.

2.21 Exchange rate variations result from projects' exposure to foreign currencies and movements in foreign exchange rates against the Australian dollar.⁹⁸ Budget adjustments aim to maintain the relative buying power of the project budget. Movements in the US dollar and the Euro are the main influences. Projects with larger movements in foreign exchange in 2018–19 included:

- Joint Strike Fighter — movement of \$1018.6 million, or 6.6 per cent increase in budget; and
- MH-60R Seahawk — movement of -\$217.8 million, or 6.3 per cent decrease in budget.

2.22 Real Variations⁹⁹ primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability and budgetary adjustments such as administrative savings decisions. In 2018–19, the two projects with more significant Real Variations were:

- Collins R&S — variation of \$33.7 million reflecting budget transfers associated with a transfer of scope from two related projects; and
- Overlander Medium/Heavy — variation of -\$30.0 million reflecting the return of funds to the Integrated Investment Program.

98 Australian Government arrangements for foreign exchange variation involve 'no win/no loss' supplementation. As a matter of policy, unless specifically approved, individual entities are not permitted to 'hedge' against foreign exchange risk.

99 Real Variations include 'Scope' changes attributable to changes in requirements by Defence and government; 'Transfers' which occur when a portion of the budget and corresponding scope is transferred to or from another approved project or sustainment product in Defence; 'Budgetary Adjustments' made to account for corrections resulting from foreign exchange or indexation accounting estimation errors; 'Real Cost Increases', where funds have been approved by government to increase the Project's budget (generally without a change in scope); and 'Real Cost Decreases', where funds have been handed back to the Defence portfolio.

Table 9: In-year (2018–19) budget variations by project

Project	Approved Budget 2017–18 \$m	Approved Budget 2018–19 \$m	In-year Exchange Variation \$m	In-year Real Variation \$m	Total Variance \$m	Total Variance (per cent)
Joint Strike Fighter	15,504.0	16,522.6	1018.6	-	1018.6	6.6
AWD Ships	9089.3	9103.7	14.4	-	14.4	0.2
P-8A Poseidon ¹	5212.0	5375.7	163.8	-	163.7	3.1
MRH90 Helicopters	3771.1	3771.1	0.2	(0.2)	0.0	0.0
Offshore Patrol Vessel	-	3724.3	91.5	-	91.5	2.5
Growler	3430.4	3510.3	79.9	-	79.9	2.3
Overlander Medium/Heavy	3428.9	3399.9	1.0	(30.0)	(29.0)	(0.8)
MH-60R Seahawk	3430.3	3212.5	(217.8)	-	(217.8)	(6.3)
LHD Ships	3091.7	3092.2	0.5	-	0.5	0.0
Hawkei	1952.0	1979.6	27.6	-	27.6	1.4
Battlefield Airlifter	1433.3	1442.1	8.8	-	8.8	0.6
Repl Replenishment Ships	1066.8	1070.6	3.5	0.3	3.8	0.4
CMATS	974.2	975.8	1.6	-	1.6	0.2
Battle Comm. Sys. (Land) 2B	920.1	942.6	22.5	-	22.5	2.1
Additional MRTT	887.8	894.3	6.5	-	6.5	0.7
ANZAC ASMD 2B	678.7	678.7	-	-	0.0	0.0
Collins Comms and EW	-	607.8	8.3	-	8.3	1.4
Pacific Patrol Boat Repl	501.2	504.0	2.8	-	2.8	0.6
HATS	481.5	481.6	0.2	(0.1)	0.1	0.0
Collins R&S	411.6	445.3	-	33.7	33.7	6.7
Night Fighting Equip Repl	-	442.6	(17.7)	-	(17.7)	(4.0)
Maritime Comms ¹	437.7	440.0	2.4	-	2.3	0.5
Battle Comm. Sys. (Land) 2A	438.0	438.1	0.1	-	0.1	0.0
ANZAC Air Search Radar Repl	-	428.7	1.0	-	1.0	0.2
UHF SATCOM	419.9	421.8	1.9	-	1.9	0.5
LHD Landing Craft	236.7	236.7	-	-	-	0.0
Total ²	57,797.2	64,142.6	1221.6	3.7	1225.1	2.1

Note 1: The Total Variance and components for this project do not add up due to rounding differences.

Note 2: The difference between the total approved budgets for 2017–18 and 2018–19 is partly due to the projects entering the MPR in 2018–19 (Offshore Patrol Vessel, Collins Comms and EW, Night Fighting Equip Repl, and ANZAC Air Search Radar Repl) not contributing to the total budget figure for 2017–18.

Source: ANAO analysis of the 2017–18 and 2018–19 PDSSs.

In-year forecast and actual expenditure

2.23 Accurately forecasting and managing budget expenditure is an important element in the management of a portfolio of projects. Figure 5, below, sets out the expenditure forecasting performance of each project against actual expenditure in 2018–19. In total, actual expenditure

for the 26 projects at 30 June 2019 was \$4831.4 million. This is compared against an initial Portfolio Budget Statements (PBS) forecast expenditure of \$5809.4 million, a mid-year Portfolio Additional Estimates Statements (PAES) forecast of \$5382.3 million, and a final forecast of \$5173.0 million (Final Plan, approved during May 2019).

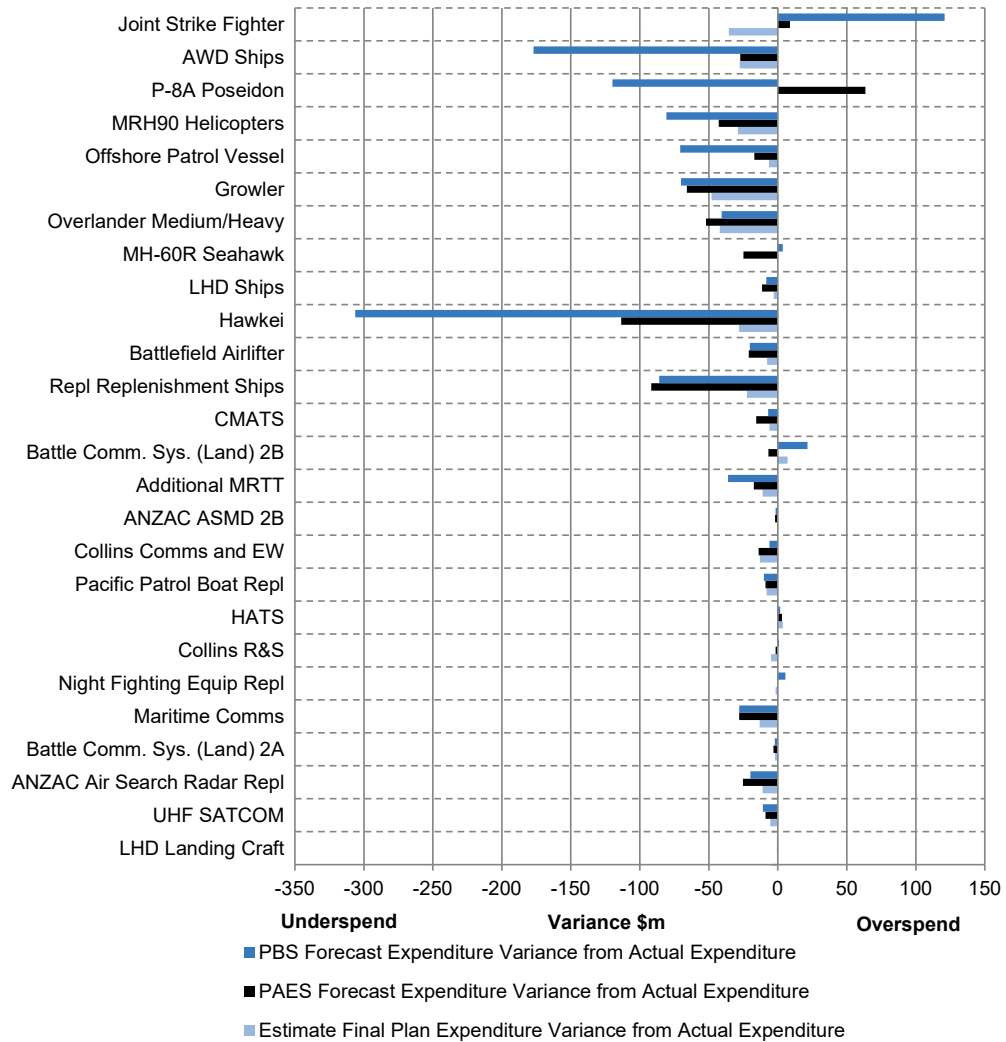
2.24 Figure 5 highlights that notable in-year underspends occurred in the following projects:

- AWD Ships (expenditure of \$198.9 million compared to \$375.9 million PBS, \$226.2 million PAES and \$226.6 million Final Plan estimates) — the variance is due to deferring planned expenditure to subsequent years and Defence Finance Group deferring payment of invoices incurred during 2018–19;
- P-8A Poseidon (expenditure of \$472.4 million compared to \$592.3 million PBS, \$408.9 million PAES and \$472.6 million Final Plan estimates) — the variance is due to having paid some planned 2018–19 expenditure in 2017–18 and deferring some planned 2018–19 expenditure to subsequent years; and
- Hawkei (expenditure of \$89.3 million compared to \$395.6 million PBS, \$202.8 million PAES and \$117.5 million Final Plan estimates) — the variance is due to ongoing vehicle reliability issues, design maturity, and delays in the delivery of engine components delaying payment of milestones, as well as Defence Finance Group deferring payment of invoices incurred during 2018–19.

2.25 Figure 5 also highlights that a notable in-year overspend occurred in the following project:

- Joint Strike Fighter (expenditure of \$1942.0 million compared to \$1821.1 million PBS, \$1933.3 million PAES and \$1977.6 million Final Plan estimates) — the variance is due to foreign exchange updates.

Figure 5: In-year (2018–19) projects' forecast expenditure performance compared to actual expenditure (\$m)



Sources: ANAO analysis of the 2018–19 PDSSs and Defence Portfolio Budget Statements.

Schedule performance analysis

2.26 Defence data continues to show that schedule performance is a key issue in delivering and sustaining equipment.¹⁰⁰ Project schedule slippage can have the effect of introducing or exacerbating a capability gap, or requiring an extension to the planned withdrawal date for those platforms being replaced.¹⁰¹

Time Elapsed and Project Maturity

2.27 Based on the findings of the *Defence Procurement Review 2003*¹⁰², in 2005 Defence began to increase the proportion of MOTS acquisitions, which are generally lower risk projects and therefore more likely to meet schedule timelines. Analysis of the available performance information highlights that the selection of MOTS projects assists in reducing risk during project acquisition, where Project Maturity is more advanced at Second Pass Approval than developmental projects. For example, CMATS is a developmental project that has experienced significant schedule slippage; its maturity score at Second Pass Approval was 31 points, below the expected benchmark of 35 points for projects at Second Pass Approval. In contrast, MH-60R Seahawk is a MOTS project that has not experienced any slippage to date; its maturity score at Second Pass Approval was 37 points.

2.28 Figure 6, below, sets out each project's Time Elapsed against Project Maturity.¹⁰³ Time Elapsed lags Project Maturity for 19 of 26 projects. Similar to the analysis of Budget Expended and Project Maturity, at paragraphs 2.11 to 2.14, this pattern is expected as projects will generally score 50 per cent of their Project Maturity at Second Pass Approval, when Time Elapsed is zero (for the purposes of the ANAO's analysis in this report). The lag is most pronounced in MOTS and Australianised MOTS acquisitions, including Offshore Patrol Vessel, Collins Comms and EW, Pacific Patrol Boat Repl, and Night Fighting Equip Repl. The exception is ANZAC Air Search Radar Repl, a developmental project where the lag in Time Elapsed against Project Maturity reflects the project's extensive schedule to FOC, required to upgrade all eight ships in the Anzac class.

2.29 For the 10 projects where Time Elapsed lags Project Maturity by 20 per cent or more, this generally reflects projects at relatively early stages of acquisition processes, including proceeding through design activities, or awaiting significant amounts of their major equipment to be constructed and delivered. There are two significant exceptions to this:

- MH-60R Seahawk, where the majority of equipment has been delivered but the project needs to test and integrate a number of ADF Mission System Options and modify Navy ships to operate with the helicopter; and
- HATS, where all helicopters and training devices have been delivered, but more time is required to prove the full capability of the equipment in operational service.

2.30 For the seven projects where Time Elapsed leads Project Maturity, there were no instances where this difference was significant (20 per cent or more). The greatest variance was for Battlefield

¹⁰⁰ See Table 2 in **Part 1** of this report.

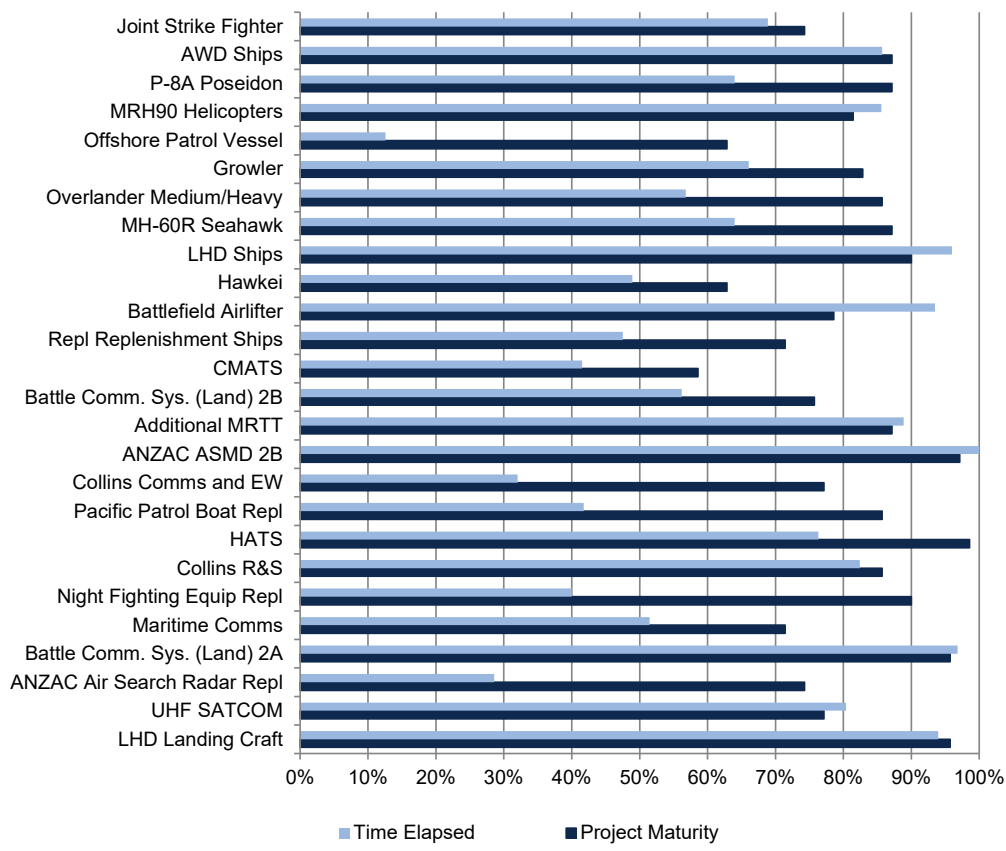
¹⁰¹ Extensions to planned withdrawal dates may involve additional costs relating to the maintenance and servicing of equipment.

¹⁰² M Kinnaird, *Defence Procurement Review 2003*, Department of Defence, Canberra, 2003.

¹⁰³ Refer to footnote 21 for more detail.

Airlifter, where Time Elapsed leads Project Maturity by 15 per cent. At 30 June 2019 this project was forecasting to achieve FOC in December 2019, despite major contracts for the acquisition of training devices not yet being signed and some other equipment also not yet acquired.

Figure 6: Time Elapsed and Project Maturity



Source: ANAO analysis of the 2018–19 PDSSs.

Schedule slippage and acquisition type by approval date

2.31 Figure 7, below, illustrates the total schedule slippage¹⁰⁴ since Second Pass Approval for the 26 selected projects. It also depicts the acquisition type and places projects in order of government approval. Figure 8 illustrates the total schedule slippage for the 22 projects that have exited the review.

2.32 Following implementation of the recommendations of the *Defence Procurement Review 2003*¹⁰⁵, in 2005 Defence began focusing on MOTS and Australianised MOTS acquisitions.¹⁰⁶ Figure 8 shows that the inclusion of MOTS acquisitions contributed, prima facie, to a reduction in schedule slippage in the Major Projects portfolio. For projects that have exited the MPR, MOTS projects report an average of 11 months of slippage per project, while Australianised MOTS projects report an average of 45 months and developmental projects report an average of 105 months. Decisions on whether to undertake developmental projects should be considered on a risk basis.¹⁰⁷ In this context, the consideration of risk should be holistic and weigh up the level of capability to be acquired against potential risks relating to cost and schedule.

2.33 The 2015 *First Principles Review* recommended the construction of a 'smart buyer' framework, with the aim of '[ensuring] Defence can make strategic decisions regarding the most appropriate procurement and contracting methodologies'.¹⁰⁸ Defence has begun to conduct Smart Buyer assessments for acquisition projects at different stages of approval. None of the projects currently in the Major Projects portfolio have been approved under the Smart Buyer processes. The ANAO will continue to report on the outcomes of the *First Principles Review* and the Smart Buyer framework in subsequent years.

2.34 The *First Principles Review* also identified technical risk as the major cause of post Second Pass Approval schedule slippage, and observed that schedule slippage causes cost escalation.¹⁰⁹ The challenge of gaining a full understanding of the complexities of developmental aspects of projects at Second Pass Approval is evident by the extent of slippage over time.

2.35 Figures 7 and 8 illustrate that older projects have experienced the most slippage. These projects tended to be more developmental (complex) in nature and typically experienced schedule slippage in the past, and have often continued to do so. This demonstrates an ongoing trend of slippage in historically late projects, which is more pronounced in older projects. This trend is also visible, but less prominent, in newer projects.

2.36 The more recent developmental projects, Hawkei and ANZAC Air Search Radar Repl, are yet to experience slippage to their FOC dates. However, these projects have experienced slippage to design reviews, test programs, or material release milestones; in the case of Hawkei, 21 months

104 Refer to footnote 26.

105 M Kinnaird, *Defence Procurement Review 2003*, Department of Defence, Canberra, 2003.

106 Refer to paragraph 32 for a discussion of definitions for these different acquisition types.

107 Of the nine projects added to the MPR since 2016–17, four have been developmental (Hawkei, CMATS, Battle Comm. Sys. (Land) 2B) and ANZAC Air Search Radar Repl). Of these projects, CMATS has experienced 28 months of schedule slippage and Battle Comm. Sys. (Land) 2B has experienced 24 months of schedule slippage, while Hawkei and ANZAC Air Search Radar Repl are yet to experience slippage to FOC milestones.

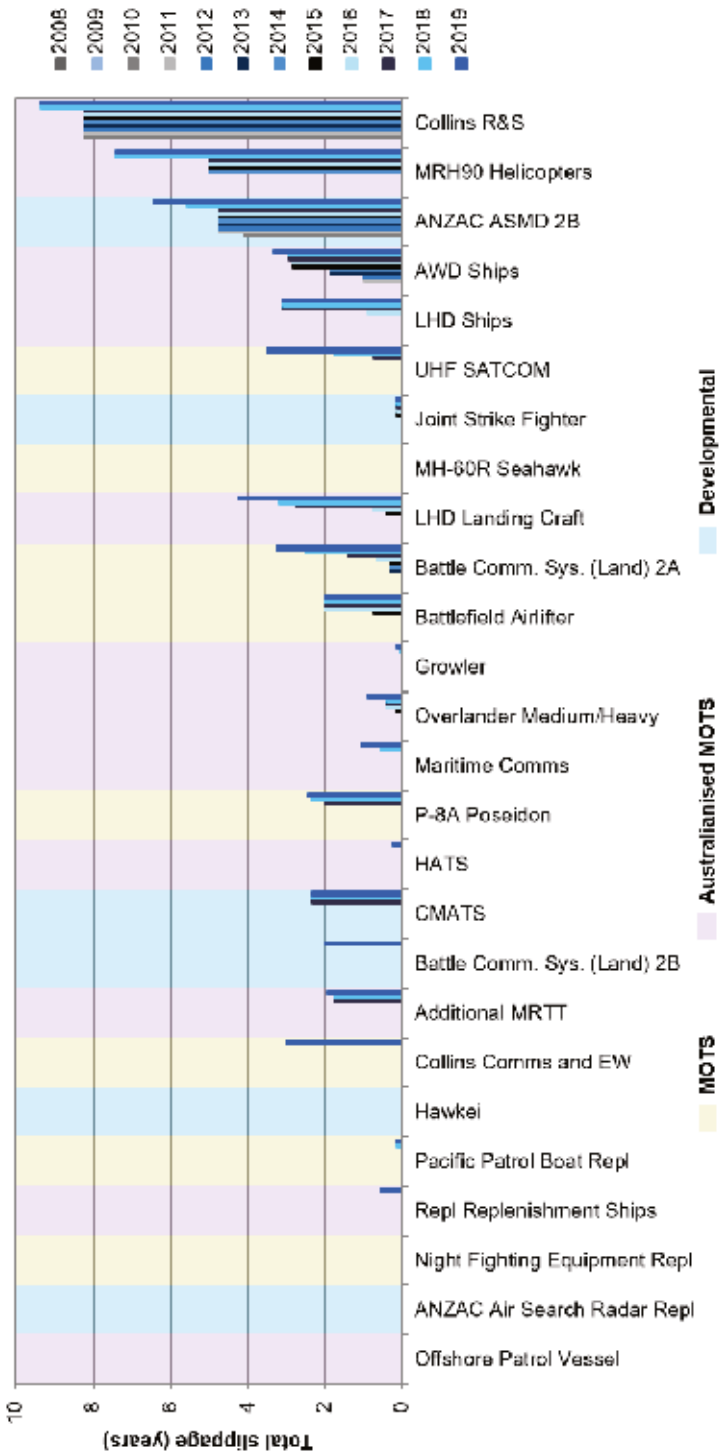
108 D Peever, *First Principles Review: Creating One Defence*, Department of Defence, Canberra, 2015, p. 35. Defence's implementation of the First Principles Review was examined in Auditor-General Report No.34 of 2017–18 *Defence's Implementation of the First Principles Review*.

109 *ibid* pp. 34 and 92.

slippage to the Production Reliability Acceptance Test, leading to 17 months slippage to Initial Materiel Release. In contrast, recent MOTS projects, Pacific Patrol Boat Repl and Night Fighting Equip Repl, have adhered more closely to their design and materiel release schedules with only minor variances. This indicates that although developmental projects currently in the MPR are not reporting significantly more slippage to FOC than MOTS projects, developmental projects still appear to carry a higher level of technical risk.

2.37 While it is not possible to predict the full extent of slippage a project will experience, Figure 8 analysis has been provided to highlight changes since the Kinnaird Review. Nine post Kinnaird and 12 pre Kinnaird projects have exited the MPR. Total slippage of the nine post Kinnaird projects is 7.1 years. Total slippage of the 12 pre Kinnaird projects is 72.3 years. Six of the nine post Kinnaird projects were MOTS acquisitions and 11 out of the 12 pre Kinnaird acquisitions were Australianised MOTS or developmental.

Figure 7: Current Major Projects — Total slippage post Second Pass Approval and acquisition type by approval date (years)



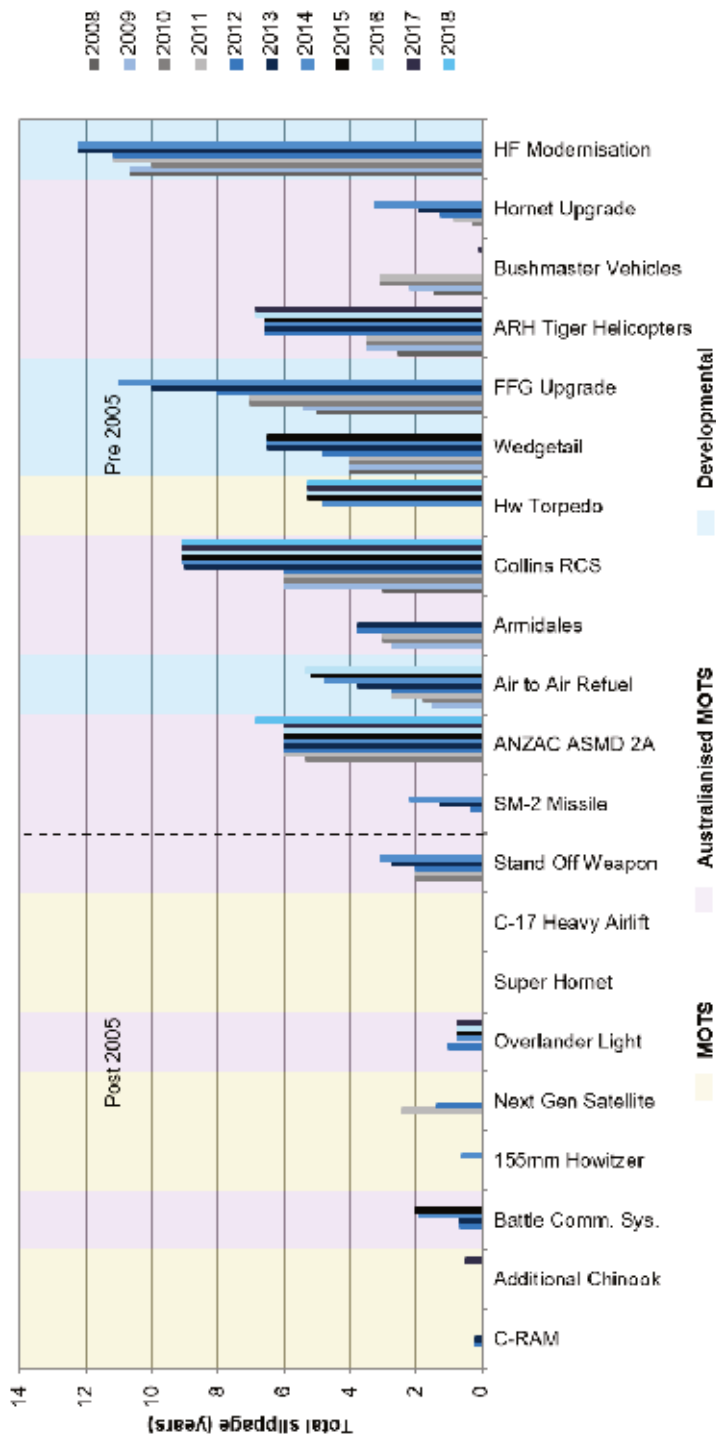
Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates.

Note 2: Additional scope approved following Second Pass Approval has caused slippage for: P-8A Poseidon (24 months), Additional MRTT (21 months), Collins Comms and EW (36 months) and Collins R&S (13 months). The additional scope for these projects explains 94 months of the 691 months of total slippage reported in 2018–19.

Note 3: Only one project in the 2018–19 MPR, Collins R&S, was approved prior to the Kinnaird reforms in 2005.

Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Figure 8: Exited Major Projects — Total slippage post Second Pass Approval and acquisition type by approval date (years)



Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates. The Hornet Refurb and BMS projects did not have FOC dates.

Note 2: The slippage shown for Next Gen Satellite related to the final capability milestones at the time. By the time it reached FOC, a new final capability milestone had been introduced which reduced this slippage.

Note 3: Projects to the left of the dotted line were approved following implementation of the Kinnaid reforms in 2005. Projects to the right were approved prior to the reforms being implemented.

Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Schedule performance

2.38 The figures and tables that follow illustrate:

- the original and 30 June 2019 forecasts for achieving FOC;
- in-year schedule changes to achieving FOC; and
- total schedule slippage across the Major Projects.

Original and 30 June 2019 Final Operational Capability forecasts

2.39 Figure 9, below, presents information on the selected projects' original and 30 June 2019 forecasts for achieving FOC. The total schedule slippage¹¹⁰ for the 26 Major Projects to date is 691 months compared to the initial prediction when approved by government. This represents a 27 per cent increase on the approved schedule. Of the 26 projects in the 2018–19 report, 21 have experienced schedule slippage.

2.40 Total schedule slippage across the Major Projects was 691 months in 2018–19. This is 110 months lower than the figure of 801 months reported in the 2017–18 report. The difference is mainly due to the exit of projects with significant slippage — Collins RCS, Hw Torpedo, ANZAC ASMD 2A and BMS — which reduced the total accumulated slippage by 254 months. This was offset by in-year slippage for Battle Comm. Sys. (Land) 2B (significant technical issues requiring a change in technical approach), ANZAC ASMD 2B (administrative delays to declaring FOC), UHF SATCOM (further delays in software development), and LHD Landing Craft (rescheduling of heavy load carriage sea trials). These projects, combined, added 68 months of the 108 months schedule slippage in 2018–19. Additionally, Collins Comms and EW added 36 months of slippage to the total of 691 months; the slippage occurred in 2016–17 but the project was reported in the MPR for the first time in 2018–19.

2.41 The reasons for schedule slippage often require a deep understanding of project technical elements and a realistic assessment of the capacity of the private sector to deliver in the expected timeframe. A project office's ability to gain access to the platform for upgrading can also result in schedule delay (for example, Maritime Comms and Collins R&S).¹¹¹

2.42 A closer examination of the reasons for schedule slippage demonstrates the importance of initial assessments of project complexity. A key factor is whether a project is MOTS, Australianised MOTS or developmental.¹¹² One project, MRH90 Helicopters¹¹³, was originally misclassified as MOTS. The project was reclassified by Defence to Australianised MOTS (i.e. more developmental) subsequent to Second Pass Approval.¹¹⁴ This project has experienced extended schedule slippage. Another project, UHF SATCOM, is still classified as MOTS but includes the

110 Schedule slippage is defined in footnote 26.

111 See the ANZAC ASMD 2B and Collins R&S PDSSs in **Part 3** of this report.

112 Auditor-General Report No.6 2013–14 *Capability Development Reform*, paragraphs 9.1 to 9.4, pp. 198–199.

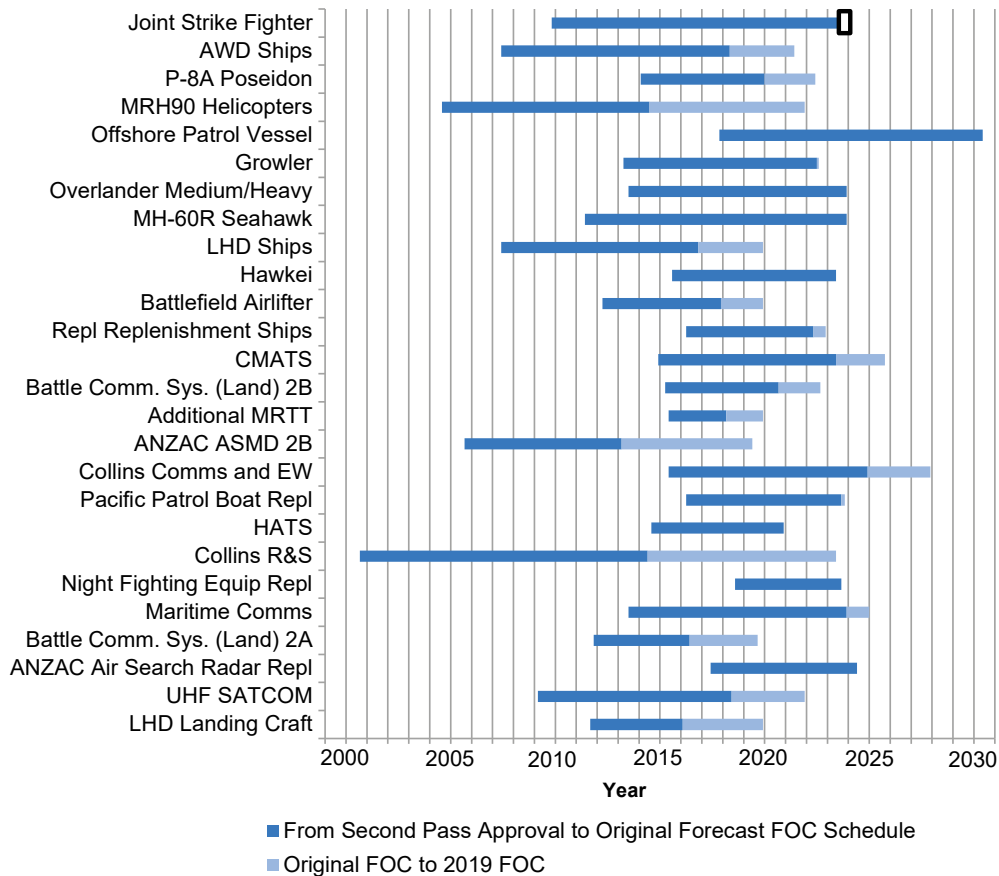
113 Further information on MRH90 Helicopters can be found in Auditor-General Reports No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, pp. 84, 90 and 133; No.52 2011–12 *Gate Reviews for Defence Capital Acquisition Projects*, pp. 86–87 and pp. 130–133; and No.52 2013–14 *Multi-Role Helicopter Program*.

114 Similarly, the ARH Tiger Helicopters project, which exited the Major Projects Report in 2016–17, was originally misidentified as MOTS by Defence and was subsequently reclassified as being more developmental. See Auditor-General Report No.11 2016–17 *Tiger—Army's Armed Reconnaissance Helicopter*, paragraph 1.7 and paragraph 2.3.

development of significant amounts of software. Delays in software development have led to 42 months of slippage to the FOC milestone.

2.43 Figure 9 further indicates that one project (Joint Strike Fighter) is currently forecasting an FOC date earlier than originally approved. However, Joint Strike Fighter has previously forecast an earlier date than its 30 June 2019 forecast, and has experienced slippage from that previous forecast, partially offsetting its schedule recovery. Other projects with schedule recovery offset by slippage are AWD Ships, Growler, Overlander Medium/Heavy, Additional MRTT, ANZAC ASMD 2B, HATS, Collins R&S, and LHD Landing Craft. In total, these projects have contributed 35 months of schedule recovery to the Major Projects; however, ANAO analysis (for example, in Table 2 and Figure 11) excludes this effect to portray the complete amount of slippage experienced by the Major Projects.

Figure 9: Projects’ original and 30 June 2019 FOC forecasts



Note 1: □ indicates that the forecast FOC date for the project at 30 June 2019 is earlier than the original FOC date.

Source: ANAO analysis of the 2018–19 PDSSs.

In-year schedule performance

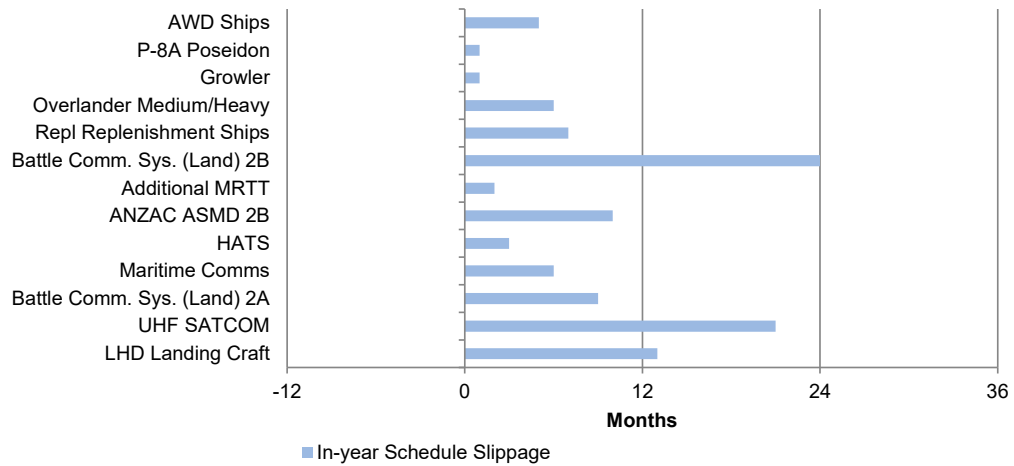
2.44 In 2018–19, there was schedule slippage of 108 months in the forecast achievement of FOC across the 26 Major Projects, as shown in Figure 10, below. In-year project performance, measured by slippage over the last 12 months, may not reflect the project trend.

2.45 In-year schedule slippage occurred for the following 13 projects¹¹⁵ (the explanation provided, drawn from the 2018–19 PDSSs, may also include the reasons for prior slippage):

- AWD Ships — the variance reflects rescheduling of the FOC milestone until after completion of Combat System Ship Qualification Trials;
- P-8A Poseidon — the variance reflects minor rescheduling of the FOC milestone;
- Growler — the variance reflects minor rescheduling of the FOC milestone;
- Overlander Medium/Heavy — the variance reflects a more accurate forecast of the duration of activities leading up to FOC;
- Repl Replenishment Ships — the project's understanding of FOC requirements has matured and more time will be required to achieve them;
- Battle Comm. Sys. (Land) 2B — delays in interfacing projects required a change in this project's technical solution. More time is required to conduct design, testing and evaluation of the new solution;
- Additional MRTT — minor schedule savings were predicted in 2017–18, but were not realised;
- ANZAC ASMD 2B — administrative processes delayed the declaration of FOC;
- HATS — minor delays to align with the completion time frame agreed to in the project's MAA;
- Maritime Comms — delay to FOC to allow for Navy to conduct processes following completion of FMR;
- Battle Comm. Sys. (Land) 2A — administrative processes are still required to declare FOC;
- UHF SATCOM — the project has experienced further delay to FOC due to contractor delays and additional security certification requirements by the US Government; and
- LHD Landing Craft — final operational test and evaluation trials were rescheduled for Quarter 3, 2019.

¹¹⁵ In the *Statement by the Secretary of Defence* in **Part 3** of this report, the Acting Secretary also makes reference to additional information on achieved milestone dates for Offshore Patrol Vessel, LHD Ships, Repl Replenishment Ships, Additional MRTT, Night Fighting Equip Repl, and LHD Landing Craft.

Figure 10: In-year (2018–19) schedule changes to achieving FOC



Note: Defence's PDSSs indicate that 13 of the 26 Major Projects Report projects did not record changes to their Final Operational Capability dates this year.

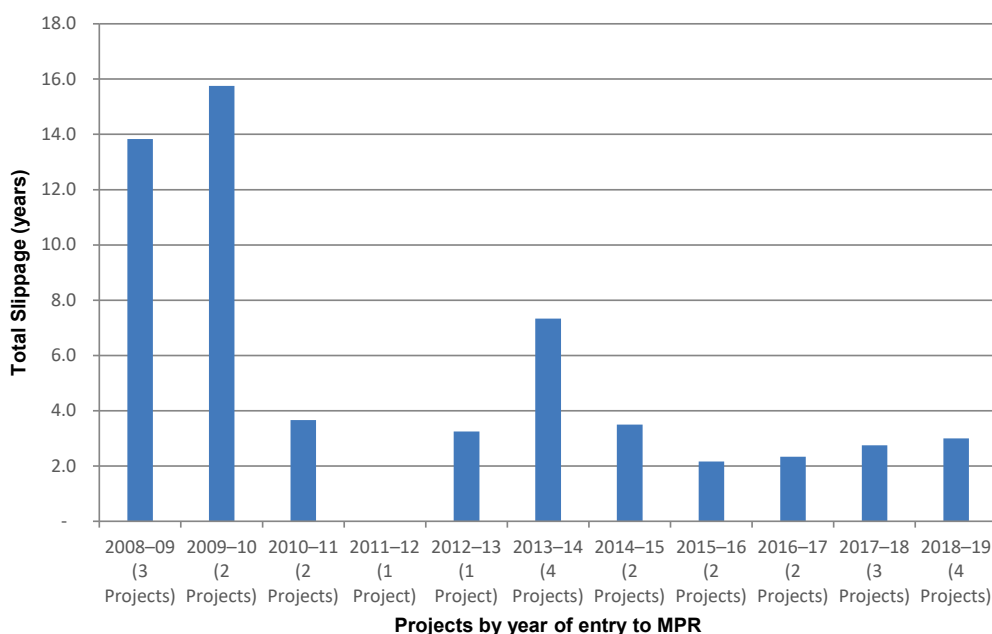
Source: ANAO analysis of the 2018–19 PDSSs.

Schedule performance by year of entry to MPR

2.46 Figure 11, below, shows the accumulated schedule slippage of the Major Projects included in the MPR reports from 2008–09 to 2018–19.¹¹⁶ Table 10 provides the details of the specific projects included in the analysis. The figure shows that over half of the total schedule slippage across the Major Projects covered in the 2018–19 report (57.6 years or 691 months) is made up of the slippage from the oldest projects, added in 2008–09 and 2009–10.

¹¹⁶ Tables 4 and 5, on pages 15 and 16 respectively, report on the slippage for each project that has been in the MPR since 2007–08.

Figure 11: Schedule slippage by year of entry to the MPR in 2018–19 (in years)



Note: The total schedule slippage in 2018–19 across the 26 projects is 691 months.

Source: ANAO analysis of the PDSSs in Major Projects Reports.

Table 10: Year of entry for projects included in Figure 11 analysis

Project	Year added to MPR	Project	Year added to MPR
AWD Ships	2008–09	P-8A Poseidon	2014–15
MRH90 Helicopters	2008–09	Maritime Comms	2014–15
LHD Ships	2008–09	Additional MRTT	2015–16
ANZAC ASMD 2B	2009–10	HATS	2015–16
Collins R&S	2009–10	Hawkei	2016–17
Joint Strike Fighter	2010–11	CMATS	2016–17
UHF SATCOM	2010–11	Repl Replenishment Ships	2017–18
MH-60R Seahawk	2011–12	Battle Comm. Sys. (Land) 2B	2017–18
Battle Comm. Sys. (Land) 2A	2012–13	Pacific Patrol Boat Repl	2017–18
Growler	2013–14	Offshore Patrol Vessel	2018–19
Overlander Medium/Heavy	2013–14	Collins Comms and EW	2018–19
Battlefield Airlifter	2013–14	Night Fighting Equip Repl	2018–19
LHD Landing Craft	2013–14	ANZAC Air Search Radar Repl	2018–19

Source: ANAO analysis of the PDSSs in published Major Projects Reports.

2.47 Table 11 shows that 16 per cent (112 of 691 months) of the total schedule slippage across the 2018–19 Major Projects is attributed to the sole remaining project approved prior to the Kinnaird reforms, Collins R&S.

Table 11: Project slippage

Project	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/19 FOC date	No. of months slippage between Original FOC and 30/6/19 FOC date
Joint Strike Fighter ¹	169	167	2
AWD Ships ¹	131	168	40
P-8A Poseidon	71	100	29
MRH90 Helicopters	119	208	89
Offshore Patrol Vessel	151	151	0
Growler ¹	111	112	2
Overlander Medium/Heavy ¹	125	125	11
MH-60R Seahawk	150	150	0
LHD Ships	113	150	37
Hawkei	94	94	0
Battlefield Airlifter	68	92	24
Repl Replenishment Ships	73	80	7
CMATS	102	130	28
Battle Comm. Sys. (Land) 2B	65	89	24
Additional MRTT ¹	33	54	23
ANZAC ASMD 2B ¹	90	165	77
Collins Comms and EW	114	150	36
Pacific Patrol Boat Repl	89	91	2
HATS	76	76	3
Collins R&S ^{1,2}	165	273	112
Night Fighting Equip Repl	61	61	0
Maritime Comms	125	138	13
Battle Comm. Sys. (Land) 2A	55	94	39
ANZAC Air Search Radar Repl	84	84	0
UHF SATCOM	111	153	42
LHD Landing Craft ¹	53	99	51
Total - All Projects With Slippage	<u>2,598</u>	<u>3,254</u>	<u>691</u>

Note 1: These figures do not add horizontally due to the exclusion of schedule reductions over the life of the project. Refer to footnote 26.

Note 2: Collins R&S was approved prior to the implementation of the Kinnaird reforms. It accounts for 16% of the total schedule slippage.

Source: ANAO analysis of the 2018–19 PDSSs.

Capability performance analysis

2.48 Defence defines capability as the power to achieve a desired operational effect in a nominated environment, within a specified time, and to sustain that effect for a designated period.¹¹⁷ An operational effect is achieved by combining the nine Fundamental Inputs to Capability — organisation, command and management, personnel, collective training, major systems, facilities and training areas, supplies, support, and industry¹¹⁸ — and undertaking designated operations.

2.49 In acquiring Defence platforms and systems, a range of documentation (including capability definition, operational concept, function and performance specification, and Test and Evaluation Master Plans) is developed, which establishes the detailed requirements/performance attributes to be achieved.

2.50 Since the 2009–10 MPR, capability reporting¹¹⁹ has been based on Defence's prediction of the final capability that would be achieved on the basis of deliverables and/or activities completed. This assessment of capability performance (Expected Capability) is measured against the Materiel Release Milestones (MRMs) and Completion Criteria specified in each project's Materiel Acquisition Agreement (MAA). This is distinct from an assessment of whether milestones will be achieved on schedule. As the ANAO has previously noted, this data involves 'making certain assumptions in forecasting achievements and is therefore subjective in approach ...'.¹²⁰

2.51 For example, for the LHD Landing Craft project, in the 2015–16 MPR Defence predicted and reported that 99 per cent of elements of capability had a 'high level of confidence of delivery', with the capability to transport heavy loads (of up to 65 tonnes) still requiring trials prior to declaration of capability achievement; this capability was assessed as 'under threat, considered manageable'.

2.52 These trials have been delayed on multiple occasions since 30 June 2016, as reported to the JCPAA by Defence at public hearings.¹²¹ The 2018–19 PDSS continues to report a one per cent Amber rating corresponding to the outstanding trials. This indicates that the subjective 2015–16 forecast of the capability achievement may not have been accurate, with the capability proving harder to achieve than expected.

117 Department of Defence, *Interim Capability Life Cycle Manual*, Defence, Canberra, 2017, p. 85.

118 *ibid* p. 13.

119 As per the 2018–19 MPR Guidelines, a project is defined as the acquisition or upgrade of Specialist Military Equipment, which normally excludes facilities and other Fundamental Inputs to Capability. The 2018–19 MPR Guidelines also note that the MPR may report on associated sustainment activities (where applicable).

120 Auditor-General Report No. 17 2010–11 *2009–10 Major Projects Report*, p. 35.

121 Commonwealth, *Public Hearing*, Joint Committee of Public Accounts and Audit, 17 March 2016, Mr. P Croser, Director General, Specialist Ships Acquisition, Capability Acquisition and Sustainment Group, Department of Defence, p. 5;

Commonwealth, *Public Hearing*, Joint Committee of Public Accounts and Audit, 31 March 2017, Mr K Gillis, Deputy Secretary, Capability Acquisition and Sustainment Group, Department of Defence, p. 14;

Commonwealth, *Public Hearing*, Joint Committee of Public Accounts and Audit, 23 March 2018, CDRE S Hughes, Deputy General, Littoral, Department of Defence, p. 13.

2.53 The Chief of Navy declared FOC for the LHD Landing Craft project in November 2019 on the basis of trials conducted in July 2019 demonstrating heavy load carriage of up to 62 tonnes, and a desktop analysis extrapolating the results of the trials to 65 tonnes.¹²²

2.54 A further example is the Battlefield Airlifter project which reported a 100 per cent Green capability prediction at its inclusion in the MPR in 2013–14. However, the 2013–14 PDSS also reported major risks relating to capability deficiencies arising from the US Government divesting from the program, with Australia no longer able to rely on the US Air Force processes. These risks have continued to affect the project, with a mature training system and a number of baseline capability requirements now not expected to be delivered until after FOC. These capability issues were reported in the PDSS Pie Chart for the first time in 2018–19, indicating that the earlier confidence in the ability to achieve the required capability may have been overly optimistic.¹²³

2.55 Over time, the JCPAA has sought the use of a more robust measure of capability performance.¹²⁴

2.56 In October 2017, the JCPAA recommended ‘that the Department of Defence review the procedure for the development of expected capability estimates for future Major Projects Reports. The outcomes of this review should be provided to the Committee within six months of the tabling of this report. Further, the Committee requests that Defence provide a progress report within three months of the tabling of this report.’¹²⁵

2.57 Defence made a submission to the Committee in March 2018 regarding this recommendation.

Defence will conduct a schedule baseline validation activity for the Major Projects Report projects to drive greater consistency in schedule reporting.

Once this activity is complete, Defence should be in a better position to investigate a more robust approach to measuring Capability estimates. Utilising the validated baseline data could inform:

- A simple percentage of schedule milestones *achieved* to measure progress to date. This is a quantitative assessment that relies on the maintenance of a robust project baseline, which is not dissimilar to the approach proposed by ANAO previously;
- CASG working with Force Design to identify how to measure capability, that considers all elements of Fundamental Inputs to Capability, and that is suitable for unclassified publication; and

122 The desktop analysis considered 65 tonnes to be the weight of an M1A1 Main Battle Tank.

123 The PDSS references issues relating to the design and build quality of the aircraft that are expected to have an ongoing effect on sustainment. The aircraft has been affected by structural fatigue, difficulty obtaining spares, low availability, poor build quality and design limitations. See the Battlefield Airlifter PDSS in **Part 3** of this report.

124 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 442: Inquiry into the 2012–13 Defence Materiel Organisation Major Projects Report*, (2014), pp. 37–39;

Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 458: Defence Major Projects Report (2014–15)*, (2016), pp. 48–49.

125 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 468: Defence Major Projects Report (2015–16)*, (2017), Recommendation 1, p. vii.

- Defence is working towards a new whole of organisational reporting system (the Enterprise Resource Planning (ERP) System) which is expected to roll-out in Financial Year 2020-21. CASG will endeavour to incorporate the work conducted with Force Design on measuring capability.¹²⁶

2.58 In September 2018, the JCPAA noted that ‘Materiel Capability Delivery Performance charts continue to be ambiguous in displaying actual current capability levels.’¹²⁷

2.59 Defence advised the ANAO in November 2018 that partial progress had been made on its schedule baseline validation activity discussed with the JCPAA. The ANAO notes that a measurement of schedule milestones will not necessarily reflect a measurement of capability delivered.

Modified method of capability reporting

2.60 In light of the above, in 2015–16 the ANAO developed a measure of key materiel capabilities delivered (Capability Delivery Progress). This presents a current assessment of the capability delivered, which differs from Defence’s prediction of final capability. The information used in forming the ANAO’s assessment is primarily based on Section 4.2 of the PDSS, which sets out the capability elements required to achieve Initial Materiel Release and Final Materiel Release, combined with other information in the PDSS reporting the delivery of equipment/achievement of these requirements toward FOC.

2.61 Noting that a system of capability reporting with a robust methodology applicable to materiel acquisition does not exist within Defence, the information presented below is a more meaningful reflection of current project progress than an end-state prediction.

Capability Delivery Progress and Project Maturity

2.62 Figure 12, below, sets out each project’s Capability Delivery Progress against Project Maturity.¹²⁸ It shows that Capability Delivery Progress lags Project Maturity for the majority of projects (19 of 26). This relationship is expected as projects will typically develop confidence in the ability to deliver their scope and capability through testing and demonstration of capability components (for example, design reviews and acceptance tests) prior to delivery of the majority of equipment.

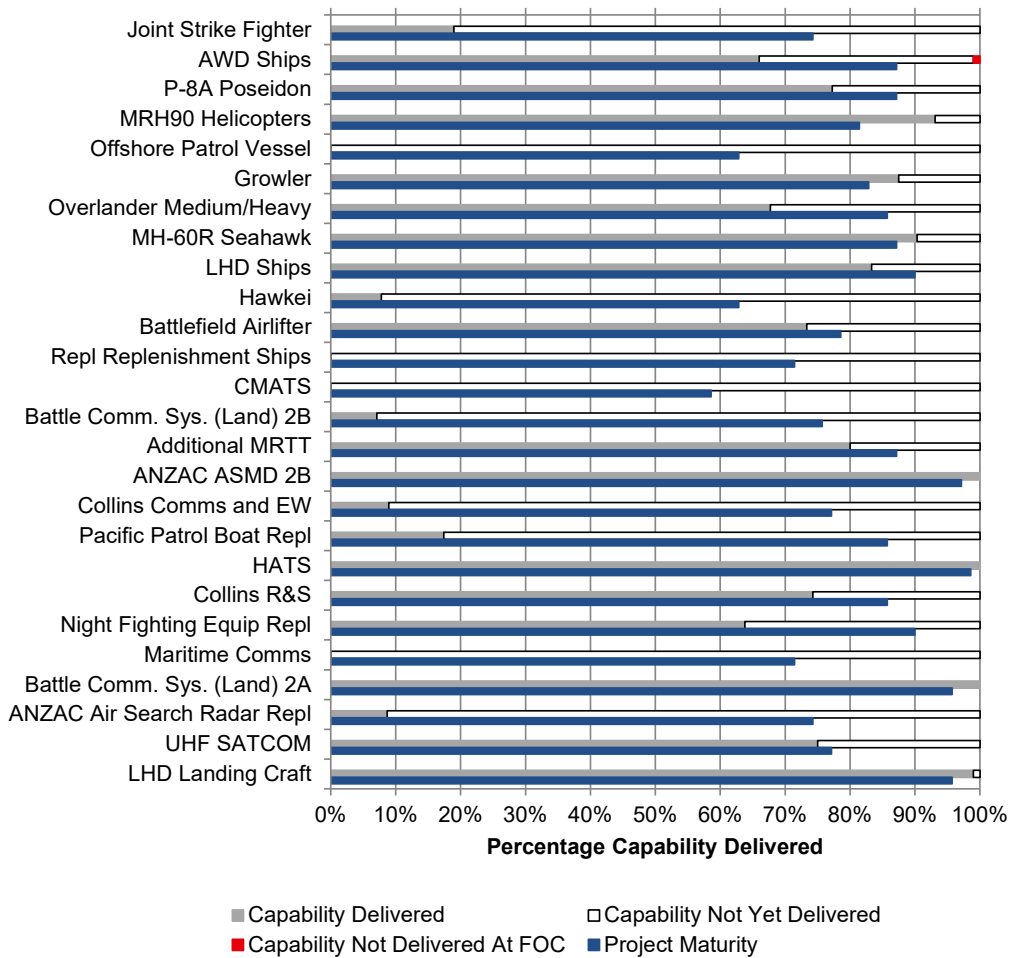
2.63 Figure 12 also shows that Capability Delivery Progress lags Project Maturity by 20 per cent or more in 12 projects, and for 10 of these, Capability Delivery Progress lags by 50 per cent or more.

126 Department of Defence, written submission to the Joint Committee of Public Accounts and Audit, Inquiry into the 2016-17 Defence Major Projects Report, p. 1.

127 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), p. 2.

128 Refer to footnote 94 for more detail.

Figure 12: Project snapshot — Capability Delivery Progress and Project Maturity



Source: ANAO analysis of the 2018–19 PDSSs.

2.64 As noted in paragraph 2.11, Defence’s project maturity framework attributes approximately 50 per cent of total project maturity at Second Pass Approval.¹²⁹ As a result, Defence’s project maturity framework is not appropriately structured to assign project maturity progress throughout the project life cycle, particularly within the acquisition phase, which is predominantly the longest and most expensive component.

2.65 Figure 12 also highlights a continuing issue with the level of specification of capability elements. For the projects that show little or no Capability Delivery Progress, this can be attributed to Defence’s high level description of requirements in the capability elements. This

¹²⁹ Refer to footnote 95 for more detail.

indicates that it would be worthwhile for Defence to undertake additional work to track project progress. In respect of the four projects that show no capability delivery at 30 June 2019, progress was as follows:

- Offshore Patrol Vessel — this project had completed almost all major design review activities;
- Repl Replenishment Ships — the first ship had been launched and was being outfitted prior to acceptance, while 70 per cent of blocks had been erected for the second ship;
- CMATS — this project was in early stages of procurement, and was progressing through early design processes; and
- Maritime Comms — this project had progressed through design reviews and commenced ship installations.

2.66 Further, Figure 12 indicates that:

- one project, ANZAC ASMD 2B, has delivered all of the required capability;
- three projects, HATS, Battle Comm. Sys. (Land) 2A, and LHD Landing Craft, have delivered essentially all of their capability with only minor items of capability or administrative processes remaining prior to declaration of FOC;
- 18 projects are still to deliver part of their capability; and
- one project, AWD Ships, will not deliver all of the required capability.

Part 2. Defence Major Projects Report

Secretary's Foreword

I am pleased to provide the 2018-19 Major Projects Report, which reports on 26 Defence major capability acquisition projects, delivered by the Capability Acquisition and Sustainment Group.

The 12th annual Major Projects Report provides transparency on the progress of Defence's largest and complex acquisition projects. The Major Projects Report developed with the ANAO continues to inform parliament and the public on Defence capability and related expenditure.

The 2018-19 year has been focussed on continued organisational and cultural reform and a transition to continuous improvement. Reform is not a 'set and forget' process; continuous improvement must become part of the One Defence culture. It is through this approach to reform that Defence can continue to improve agility and ensure the efficient and effective delivery of capability projects and their sustainment.

As part of this reform process, Defence continues to strengthen the engagement with central agencies and the partnership with defence industry. The accountabilities required to successfully deliver projects has also been reinforced through the First Principles Review reforms.

Defence is currently investigating ways to actively enhance Australian Industry Capability (AIC) and provide greater transparency into the current status and level of AIC. Defence plans to accelerate the delivery of key reforms to the AIC Program to return AIC as a real priority to the Defence sector. As part of this, Defence will establish and implement an AIC Promotion Plan. This plan will articulate specific improvement options and reporting transparency, including AIC information in future Major Projects Reports.

At 30 June 2019, Defence was managing 205 major and minor capital equipment acquisition projects in support of the Australian Defence Force with a total acquisition value of \$132.0 billion.

The 26 major capability projects within the 2018-19 Major Projects Report have a combined total approved value of \$64.1 billion and a total in-year budget of \$5.2 billion. Of note are the

following project achievements which support delivery of important capability for the Australian Defence Force and wider Pacific region:

- Joint Strike Fighter – In the 2018/19 financial year, Australia accepted delivery of eight aircraft bringing the total fleet to 14. At 30 June 2019, 10 of these aircraft were operating at the United States Luke Air Force Base Pilot Training Centre in support of pilot training and four were based at Williamstown in NSW.
- The Chief of Navy in December 2018 declared HMAS *Hobart* had achieved Initial Operating Capability, achieving a major milestone for the Air Warfare Destroyer Program.
- Under the Pacific Patrol Boat Program (SEA 3036 Phase 1), the second Guardian Class Patrol Boat, *Te Mataili II*, was gifted to the Government of Tuvalu on 6 April 2019, and the third boat, *Ngahau Koula*, was gifted to the Kingdom of Tonga on 21 June 2019.
- Offshore Patrol Vessel - The keel laying ceremony for the first vessel, NUSHIP *Arafura*, was conducted in May 2019 at Osborne, SA. Construction commenced on the second vessel in June 2019, ahead of schedule.

The Department has also been proactively closing projects and diverting resources to higher priority areas. Thirty-five Major and Minor Acquisition Projects were closed in this period, seven more than in 2017-18, with a total cost of \$72 million less than that approved by the Government.

The Vice Chief of the Defence Force, Chiefs of the Navy, Army and Air Force, the Chief of Joint Capability, the Chief Information Officer, and the Chief Finance Officer as well as our major contractors involved in each project have reviewed the relevant project data and their views have been considered in finalising this report.

I would like to take the opportunity to thank the Auditor-General, Mr Grant Hehir, and his staff for their contribution to the overall report.

I would welcome feedback on ways to improve the information and processes involved in producing the report to align it with similar international reports which have evolved to consider broader reporting across the Whole of Government. While this will take time, more

efficient processes could be established in the short term to support the disclosure of information provided in this report.

A handwritten signature in black ink, appearing to read 'Rebecca Skinner', with a long horizontal stroke extending to the right.

Rebecca Skinner

Acting Secretary

Department of Defence

10 December 2019

Purpose of the Major Projects Report

The Major Projects Report was first published for Financial Year 2007-08 to enhance transparency and accountability of the (then) Defence Materiel Organisation's major projects. It was established in a context of the Kinnaird and Mortimer Review reforms, where increased rigour was placed on capability development processes and documentation. These reforms introduced improvements to the pre-2003 processes.

The Major Projects Report was expected to evolve over time to best meet the information needs of key stakeholders on the status of the Department of Defence (Defence) capital acquisition projects.¹³⁰ With the application of the First Principles Review, consideration of the potential of the report may now warrant review.

Reporting Framework

In order to consider the Major Projects Report's purpose, it is important to consider the current legislative authority and Standards related to the assurance activity.

The Major Projects Report is prepared as a Priority Assurance Review under subsection 19A(5) of the Auditor-General Act 1997, undertaking a limited assurance review under standard ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*. As part of this Standard, for a limited engagement, the objectives are:

- (a) To obtain [a] limited assurance ... about whether the subject matter information is free from material misstatement;
- (b) To express a conclusion regarding the outcome of the measurement or evaluation of the underlying subject matter through a written report that conveys ... a limited assurance conclusion and describes the basis for the conclusion; and
- (c) To communicate further as required by this ASAE and any other relevant ASAEs.¹³¹

¹³⁰ ANAO Report No.9 2008-09 Defence Materiel Organisation Major Projects Report 2007-08, p.11

¹³¹ Standard on Assurance Engagements ASAE 3000 (May 2017), paragraph 10, parts relating to a 'limited assurance' are included and those relating to a 'reasonable assurance' are omitted.

The information reporting requirements are captured under the Major Projects Report Guidelines (See Part 4 of the Report). The Guidelines are submitted for endorsement to the Joint Committee of Public Accounts and Audit (JCPAA) by the Australian National Audit Office (ANAO) in August each year. The projects selected for inclusion, the structure of the report, and the level of detail to be provided has already been agreed by the Committee for FY 2019-20, noting final project selections were pending advice from the Capability Managers (see Part 1, paragraphs 7–8).

First Principles Review Framework

The First Principles Review (FPR) published in 2015 noted that some of Defence's organisational processes were complicated, slow, and inefficient in an environment which requires simplicity, greater agility and timely delivery.¹³² Creating a One Defence culture and generating the efficiencies identified has been a focus of Defence. It is the view of Defence that the Major Projects Report has not changed significantly in the last twelve years, and could be improved by aligning it to the FPR focus on agility and efficiency.

The United Kingdom (UK) Government have moved away from the detailed MPR process that Australia based its approach to the Major Projects Report on. The previous processes were deemed unsustainable and focus was redirected towards the broader Defence Equipment Plan. There were also improvements in the UK Ministry of Defence's (MoD) internal data systems and controls, and it was agreed that the MoD would assume responsibility for reporting, through the Project Performance Summary Sheets to Parliament on the delivery of its largest equipment procurement projects. While it would take time to reform the reporting in this way, Defence would welcome moves in the shorter term to streamline the current reporting approach in conjunction with the ANAO and the JCPAA.

¹³² First Principles Review: Creating One Defence, page 13

Major Projects Report – Current situation

The Major Projects Report costs Defence an estimated \$2.4 million to produce, in addition to the \$2.2 million in Australian National Audit Office costs reported in Part 1. The approximate \$4.6 million total cost to produce the report is more than four projects featured in this report individually spent in 2018-19 delivering capability: ANZAC ASMD 2B - SEA 1448 Phase 2B (\$2.9m); Collins R&S - SEA 1439 Phase 3 (\$3.5m); Battle Comms Sys - JP 2072 Phase 2A (\$3.6m); and LHD Landing Craft - JP 2048 Phase 3 (\$4.3m).

There are opportunities to improve the timeliness of the report, noting that it is expected to be published five months after the end of the financial year, but has not met this timeframe for a number of years. This is due, in part to the issues requiring resolution prior to tabling, but also the detailed processes required to extract and assure the data, that is then out-of-date by the time it is published. There are also multiple reporting demands on Project Managers, who provide a number of reports for different purposes on a monthly, quarterly and annual basis, while also completing their core duties of delivering capability to the ADF.

The Major Projects Report Guidelines are submitted in August each year, 11 months prior to the end of the reporting period. This means that opportunities to adapt to change or focus the report are limited. The timing does not allow lessons of the previous report to be learned and recorded in the Guidelines for the next report, resulting in a two year delay for improvements to be appropriately captured.

The information included in the Major Projects Report remains focussed on the Kinnaird and Mortimer framework, and some aspects have lost their utility, for example:

- the focus on Project Maturity Scores which is an outdated concept post-First Principles Review;
- the simplified categorisation of projects into Commercial Off-the-Shelf, Military Off-the-Shelf and Developmental may overlook the type and level of partnership with industry;
- the move to agile contracting; and

- other standardised information that is not tailored to individual project or program circumstances such as the test and evaluation processes, the level of capability delivery aligning to scope rather than effects, and the type of risks reported.

The Major Projects Report was established to achieve a number of outcomes. With some changes to procedures, improvements could be realised. For example, the Project Data Summary Sheet (PDSS) template attempts to provide data on a broad cross-section of Capability Acquisition and Sustainment Group projects while also having a disproportionate focus on the ‘mega projects’. This has led to a high level of detailed tactical level information being provided for all projects, with the strategic view becoming lost in the detail. Further, the report also appears to be testing the project management practices and compliance against policy, rather than investigating whether the capability effect as envisioned has been delivered. Currently, the report is being welcomed for providing a range of information that is not otherwise available.

Adaptive nature of the Integrated Investment Program

Defence is taking a more holistic view of capability delivery, and moving from an individual project level approach towards an integrated program management model. A Programmatic approach reduces the number of formal ‘passes’ to Government, and keeps Government informed of progress or changes through ‘updates’. This approach allows Defence to adapt and respond to changing circumstances, providing the ability to undertake activities which are known, while examining unknowns, in a structured manner. This a new and effective approach to capability delivery when the full program cost, scope, schedule, and capability to be delivered is unknown at Government approval.

This approach also aims to make a number of improvements, such as simplifying the transition to sustainment and building on knowledge gained throughout the acquisition phase in rolling programs. This approach will also enable the grouping similar projects together to allow efficiencies to be realised, limiting the number of artificial hand-overs, and providing more meaningful information to Government.

Elements of the concept are not new, and have been applied in previous programs, such as the AIR 6000 Joint Strike Fighter program where the full set of capabilities was programmed into

multiple phases, allowing Defence to procure more advanced technology when it was likely to be available. Recently approved LAND 121 Phase 5B also built on the work of MPR project LAND 121 Phase 3B (Overlander Medium/Heavy), to utilise the extant program to complete the LAND 121 vehicle replacement program. Other tranching or rolling programs, such as LAND 53 Phase 1BR (Night Fighting Equipment Replacement), will allow Defence to take lessons learned during procurement activities and apply these to follow-on tranches.

A number of organisational and governance reforms, including the context of the Major Program Report, will need to be undertaken if the benefits of this new approach are to be fully realised. These approaches will require agility in the acquisition process to be successful. The reporting environment may need to consider a transition from a structure that provides detail on standard processes, defined scope, budgets and schedules. Traditional project milestones like Final Operational Capability (FOC) may be used differently within the programmatic context. This may result in 'Projects' like LAND 53 Phase 1BR delivering required outcomes without exiting the Major Projects Report under the current criteria, as the follow-on tranches under Phase 1BR will have follow-on FOC milestones. A review to consider more flexible entry and exit criteria might be warranted to allow a broader range and throughput of different types of projects to improve the transparency and accountability.

Is a Review of the Process Required?

A review was conducted by Defence in 2011-12 to analyse the report and provide recommendations for improvement. To achieve this, the then Defence Materiel Organisation engaged Ernst & Young to undertake a survey assessing the usefulness and value of the report to external stakeholders.¹³³

Defence would welcome a broader strategic discussion at the Joint Committee on Public Accounts and Audit to consider the format, focus and timeframes of the report. Conducting a review through the Committee would allow both Parliament and a broader cross-section of stakeholders to submit their improvement ideas, and direct focus where the best value can be achieved. Defence considers that work is needed to ensure the Major Projects Report is

¹³³ 2012-13 ANAO Report No.15: 2011-12 Major Projects Report, pp.121-124

focussed on outcomes, rather than process and compliance. Noting the significant costs involved of producing this report (outlined above), Defence trusts this would help ensure the report (or other mechanisms) can provide accountability and transparency, while providing efficient disclosure of information that is useful to Parliament, the Public Sector, and the Australian public.

Defence Strategic Environment

Force Structure Plan 2019

The 2015 First Principles Review recommended Defence adopt a business-as-usual approach to the force design of the Australian Defence Force (ADF). Accordingly, Defence implemented a Force Design Cycle which, executed through the Defence Capability Assessment Program, has facilitated the annual review of the ADF force structure within the provisions of the Defence Integrated Investment Program as currently defined by the 2016 Defence White Paper. Building on this annual program, once every four years Defence conducts a fundamental review of the ADF force structure called a Force Structure Plan.

While the direction of the 2016 Defence White Paper remains valid, there has been an acceleration of the described trends which necessitate adjustments to ADF capabilities. Led by Force Design Division, the 2019 Force Structure Plan is an Enterprise level activity and draws upon subject matter expertise from all branches of the Department. The Force Structure Plan is considering the planned investment profile against changes in the strategic environment including evolving threats and disruptive technologies. Therefore, the objective of the Force Structure Plan is to review and propose changes to the ADF's force structure to ensure it is capable of undertaking the tasks Government expects of it out to 2040. The focus is to provide an Australian Defence Force that is a lethal, agile, affordable and sustainable force.

The Force Structure Plan will be delivered through an evidence-based, transparent and repeatable process. Using a Capability Based Planning methodology, the Force Structure Plan is employing parametric cost estimation, decision support, and assurance tools. Additionally,

the 2019 Force Structure Plan is supported by a Joint Experimentation Campaign of a scale never before undertaken in the review of the ADF's force structure.

Importantly, the Force Structure Plan will identify options to address operational and strategic risks with commensurate funding offsets that will allow the Department to balance capability with strategic direction and budgetary constraints. The outcome will provide Government with a series of costed portfolio options, within the current Defence funding profile, projected out 10 years in detail and 20 years as a forecast.

The Force Structure Plan will be presented for Government consideration in early 2020 and will include:

- Force Structure Options to achieve Strategic Defence Objectives based on a continuation of Defence's current funding profile over the 10 and 20 year period.
- Force Structure risks and options to treat these risks.
- A review of, and recommendations for, potential adjustment to the Defence Workforce allocation.
- A review of, and recommendations for, updates to the Future Defence Estate Profile.
- An updated Integrated Investment Program for the period 2020-30 with a Future Capability Investment Program forecast for the period 2030-40.

Overview of MPR Projects

One of the key roles of Defence is to align Australia's defence strategy with capabilities and resourcing. A capability in Defence terms is the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period.¹³⁴ To achieve these outcomes, Defence continues to deliver the major projects outlined in the Integrated Investment Program and invest in the Defence and industry partnership.

The Major Projects Report outlines 26 projects, delivered by the Capability Acquisition and Sustainment Group, with a total approved value of \$64.1 billion and a total 2018-19 budget

¹³⁴ Australian Defence Force Doctrine, Preparedness and Mobilisation

of \$5.2 billion. This accounts for 48.6 per cent of the projects by total value and 12.7 per cent by number.

Key achievements

In 2018-19 the 26 reported major projects and their industry partners have worked together to progress delivery of important capability to the Australian Defence Force. There have been a number of key milestone achievements for many projects including:

- Final Operational Capability for the ANZAC Class Anti-Ship Missile Defence project (SEA 1448 Phases 2A and 2B) was achieved on 18 June 2019. As a former Project of Concern, both Industry and Defence overcame significant challenges to produce what is now a leading-edge capability.
- Initial Operational Capability for the EA-18G Growler Electronic Attack Aircraft (AIR 5349 Phase 3) was declared in February 2019, noting that in-country training is expected to be delivered later.
- On 13 June 2019, the Maritime Patrol and Response Aircraft acquisition project (AIR 7000 Phase 2B) formally accepted the eighth P-8A Poseidon aircraft from the US Navy.

Entry to and exit from the 2018-19 Major Projects Report

Of the 26 projects included in this report, 22 projects have carried over from last year's report.

Four projects are new inclusions:

- SEA 1180 Phase 1 - Offshore Patrol Vessel
- SEA 1439 Phase 5B2 - Collins Class Communications and Electronic Warfare Improvement Program
- SEA 1448 Phase 4B - ANZAC Air Search Radar Replacement
- LAND 53 Phase 1BR - Night Fighting Equipment Replacement

Four projects have been removed:

- LAND 75 Phase 4 Battlefield Command Systems was removed from the Major Projects Report Program following achievement of Final Materiel Release in December 2017
- SEA 1439 Phase 4A Collins Replacement Combat System achieved Final Operational Capability on 13 February 2019
- SEA 1429 Phase 2 Replacement Heavyweight Torpedo achieved Final Operational Capability on 13 February 2019
- SEA 1448 Phase 2A ANZAC Anti-Ship Missile Defence (2A) achieved Final Operational Capability on 18 June 2019

Appendix 1 lists all the projects that have been removed from the report since its inception, their reasons for their removal, and their expenditure to date at 30 June 2019.

The lessons learned for each project that was been removed from the 2018-19 report are included at Appendix 2.

Defence's review of project performance

Cost

The Defence Chief Finance Officer provides overall financial assurance, on the actual cost and budget data of individual projects included in this report. Defence also has ongoing confidence in individual projects ability to deliver the remaining intended scope within their approved project budgets on the basis of the project manager assurance sign-off processes.

Project budgets approved by Government take into account the estimated impact of inflation over the life of a project which is known as 'out-turning'. At the time of project approval, project managers estimate the impact of indices tendered (or estimated) for the life of the project. These estimates are built into the project budget as part of the out-turning process, which are revised as part of each budget review and update process.

The Department of Defence's appropriation for this reporting period is cash based. Accordingly, all financial data related to Defence's capital projects and capital programs

provided within the Defence Portfolio Budget Statements, Portfolio Additional Estimates Statements and Annual Report, are presented on a cash basis. For consistency, Defence also reports its 2018-19 capital projects on a cash basis in the Major Projects Report.

The total in-year budget (2018-19) for all the projects listed is \$5.2 billion and the total approved budget is \$64.1 billion. [Table 1](#) lists the 26 projects by total Government approval from highest to lowest.

These projects represent 12.7 per cent by number of the projects in the Military Major and Minor investment program and 48.6 per cent by value, so caution must be applied when extrapolating analysis to the entirety of Defence's acquisition effort.

Understanding Budget Variation

The planned risk-based returns to Government leading to project "budget variation" (outlined in [Table 2A](#) Column B) includes activities such as:

- follow-on Second Pass approvals,
- tranching or rolling approval processes that have been agreed by Government, or
- where projects have merged or transferred cost or scope to realise more efficient project management practices.

In some instances, Real Cost Increases (RCI) require a Government approved budget variation due to unplanned cost and/or scope variation. Historically, there have been minimal requirement to apply RCIs to the project budgets, these instances are outlined in Column E.

[Table 2A](#) gives a summary of life-to-date budget approvals from Second Pass Approval to current budget including variables such as price indexation, foreign exchange and scope change impacts. Percentages of the variances are also provided.

[Table 2B](#) and [Table 2C](#) provide a further detailed breakdown of the budget variance, to separate risk-based returns to Government from unplanned cost/scope variation. This is to provide a more detailed breakdown of the Department's performance in cost and scope management, and highlight the projects with unplanned cost and/or scope variation in the interests of transparency.

Table 1 – List of 2018-19 MPR Projects by Total Approved Budget

Project Number	Project Name	Project Name Abbreviation	2018-19 In-Year Budget \$m	Total Approved Project Budget \$m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter	1,977.6	16,522.6
SEA 4000 Phase 3	Air Warfare Destroyer Program	AWD Ships	226.6	9,103.7
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System (Boeing P-8A Poseidon)	P-8A Poseidon	472.6	5,375.7
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	133.7	3,771.1
SEA 1180 Phase 1	Offshore Patrol Vessel	Offshore Patrol Vessel	210.0	3,724.3
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	175.3	3,510.3
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	628.9	3,399.9
AIR 9000 Phase 8	Future Naval Aviation Combat System (MH-60R Seahawk Romeo)	MH-60R Seahawk	142.1	3,212.5
JP 2048 Phase 4A/4B	Amphibious Ships	LHD Ships	31.7	3,092.2
LAND 121 Phase 4	Protected Mobility Vehicle - Light	Hawkei	117.5	1,979.6
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	55.7	1,442.1
SEA 1654 Phase 3	Maritime Operational Support Capability	MOSC	216.5	1,070.6
AIR 5431 Phase 3	Civil Military Air Traffic Management System	CMATS	115.4	975.8
JP 2072 Phase 2B	Battlespace Communications System (Land) Ph 2B	Battle Comm. Sys. (Land) 2B	150.7	942.6
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	53.1	894.3
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	Anzac ASMD 2B	3.1	678.7
SEA 1439 Phase 5B2	Collins Class Communications and Electronic Warfare Improvement Program	Collins Comms and EW	76.8	607.8
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	PPB-R	70.0	504.0
AIR 9000 Phase 7	Helicopter Aircrew Training System	HATS	88.5	481.6
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	8.3	445.3
LAND 53 Phase 1BR	Night Fighting Equipment Replacement	Night Fighting Equip Repl	97.0	442.6
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	21.8	440.0
JP 2072 Phase 2A	Battlespace Communications System (Land) Ph 2A	Battle Comm. Sys. (Land) 2A	5.6	438.1
SEA 1448 Phase 4B	ANZAC Air Search Radar Replacement	ANZAC Air Search Radar Repl	74.7	428.7
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	14.8	421.8
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	5.0	236.7
Total			5,173.0	64,142.6

Table 2A – Project Budget Status

Project Number and Name	(a) Government Approved Budget at Second Pass \$m	(b) Subsequent Government Approvals \$m	(c) Price Indexation \$m	(d) Foreign Exchange Variation \$m	(e) Real Cost / Scope Variation \$m	(f) Transfers \$m	(g) Budgetary Adjustments \$m	(h) Budget Cost Savings \$m	(i) (a+b+c+d+e+f+g+h) Current Budget \$m	(a)/(i) Government Approved Budget at Second Pass %	(b)/(i) Subsequent Govt Approvals %	(c+d)/(i) Price / Exchange %	(e)/(i) RCI %	(f+g+h)/(i) Other %
AIR 6000 Ph 2A/B - Joint Strike Fighter	2751.6	10515.4	351.0	2915.9	0.0	-8.4	-2.9	0.0	16522.6	16.7	63.6	19.8	0.0	-0.1
SEA 4000 Ph 3 - AWD Ships	7207.4	0.0	1173.2	-366.5	1199.5	-109.9	0.0	0.0	9103.7	79.2	0.0	8.9	13.2	-1.2
AIR 7000 Ph 2B - P-8A Poseidon	3577.7	1295.4	20.5	481.1	0.0	1.0	0.0	0.0	5375.7	66.6	24.1	9.3	0.0	0.0
AIR 6000 Ph 2A/B - MR1490 Helicopters	957.2	2565.6	679.8	-136.4	31.5	-239.2	-87.4	0.0	3771.1	25.4	68.0	14.4	0.8	-8.7
SEA 1180 Ph 1 - Offshore Patrol Vessel	3639.1	0.0	0.0	85.2	0.0	0.0	0.0	0.0	3724.3	97.7	0.0	2.3	0.0	0.0
AIR 5349 Ph 3 - Growler	1155.3	1789.4	0.0	960.5	0.0	0.0	-394.9	0.0	3510.3	32.9	51.0	27.4	0.0	-11.2
LAND 121 Ph 3B - Overlander Medium/Heavy	2549.2	735.5	0.0	145.2	0.0	0.0	-30.0	0.0	3399.9	75.0	21.6	4.3	0.0	-0.9
AIR 9000 Ph 8 - MH-60R Seahawk	3029.6	0.0	0.1	222.0	0.0	-39.2	0.0	0.0	3212.5	94.3	0.0	6.9	0.0	-1.2
JP 2048 Ph 4A/B - LHD Ships	2958.3	0.0	428.4	-303.8	0.0	9.3	0.0	0.0	3092.2	96.7	0.0	4.0	0.0	0.3
LAND 121 Ph 4 - Hawkei	1945.0	0.0	0.4	34.2	0.0	0.0	0.0	0.0	1979.6	98.3	0.0	1.7	0.0	0.0
AIR 8000 Ph 2 - Battlefield Airlifter	1156.5	0.0	0.0	285.6	0.0	0.0	0.0	0.0	1442.1	80.2	0.0	19.8	0.0	0.0
SEA 1654 Ph 3 - MOSC	1004.6	0.0	0.0	-3.4	0.0	69.4	0.0	0.0	1070.6	93.8	0.0	-0.3	0.0	6.5
AIR 5431 Ph 3 - CMAATS	731.4	0.0	0.0	3.7	247.5	-6.8	0.0	0.0	975.8	75.0	0.0	0.4	25.4	-0.7
JP 2072 Ph 2B - Battle Comm. Sys. (Land) 2B	915.7	0.0	0.0	26.9	0.0	0.0	0.0	0.0	942.6	97.1	0.0	2.9	0.0	0.0
AIR 7403 Ph 3 - Additional MRTT	681.9	187.7	0.0	29.5	0.0	0.0	-4.8	0.0	894.3	76.2	21.0	3.3	0.0	-0.5
SEA 1448 Ph 2B - Anzac ASMD 2B	248.8	155.4	76.1	-8.6	214.7	-6.7	0.0	0.0	678.7	36.7	22.9	9.8	31.8	-1.0
SEA 1439 Ph 5B2 - Collins Comms and EW	599.1	0.0	0.4	8.3	0.0	0.0	0.0	0.0	607.8	98.6	0.0	1.4	0.0	0.0
SEA 3036 Ph 1 - PPB-R	504.5	0.0	0.0	-0.5	0.0	0.0	0.0	0.0	504.0	100.1	0.0	-0.1	0.0	0.0
AIR 9000 Ph 7 - HATS	483.8	0.0	2.4	-4.5	0.0	-0.1	0.0	0.0	481.6	100.5	0.0	-0.4	0.0	0.0
SEA 1439 Ph 3 - Collins R&S	72.0	344.0	74.4	-6.0	0.0	-38.3	-0.8	0.0	445.3	16.2	77.3	15.4	0.0	-8.8
LAND 53 Ph 1B - Night Fighting Equip Repl	460.3	0.0	0.0	-17.7	0.0	0.0	0.0	0.0	442.6	104.0	0.0	-4.0	0.0	0.0
SEA 1442 Ph 4 - Maritime Comms	385.6	0.0	0.0	54.4	0.0	0.0	0.0	0.0	440.0	87.6	0.0	12.4	0.0	0.0
JP 2072 Ph 2A - Battle Comm. Sys. (Land) 2A	436.4	0.0	0.0	27.3	0.0	-25.6	0.0	0.0	438.1	99.6	0.0	6.2	0.0	-5.8
SEA 1448 Ph 4B - ANZAC Air Search Radar Repl	427.8	0.0	0.0	0.9	0.0	0.0	0.0	0.0	428.7	99.8	0.0	0.2	0.0	0.0
JP 2008 Ph 5A - UHF SATCOM	460.9	0.0	18.0	-39.1	0.0	0.0	0.0	-18.0	421.8	109.3	0.0	-5.0	0.0	-4.3
JP 2048 Ph 3 - LHD Landing Craft	235.7	0.0	0.1	8.6	0.0	0.0	-7.7	0.0	236.7	98.6	0.0	3.7	0.0	-3.3
Total \$m / Total %	38575.4	17568.4	2824.8	4401.8	1693.2	-394.5	-528.5	-18.0	64142.6	60.1	27.4	11.3	2.6	-1.5

Table 2B – Breakdown of Subsequent Government Approvals

Project Number	Project	(b) Subsequent Government Approvals \$m	Explanation
AIR 6000 Phase 2A/2B	Joint Strike Fighter	10515.4	Second Pass approval for Stage 2, acquiring an additional 58 aircraft. This figure also includes some budget corrections to keep the budget aligned with the Government approval.
AIR 7000 Phase 2B	P-8A Poseidon	1295.4	Government Second Pass Approval to fund the acquisition of an additional four P-8A aircraft and associated support systems. Funding was provided under AIR7000 Phase 2D, but merged with AIR7000 Phase 2B for efficiencies.
AIR 9000 Phase 2/4/6	MRH90 Helicopters	2565.6	Second Pass approval of Phase 4 (Black Hawk Upgrade Replacement) and Phase 6 (Maritime Support Helicopter).
LAND 121 Phase 3B	Overlander Medium/Heavy	735.5	A range of programmatic decisions have been made in relation to this project. This is aligned to the revised second pass approval.
AIR 5349 Phase 3	Growler	1789.4	Government approval to change acquisition strategy to a new-build aircraft, rather than modification of existing aircraft. This also includes the Growler Enabling capabilities and the integration of CEA systems into the Mobile Threat Training Emitter System.
AIR 7403 Phase 3	Additional MRTT	187.7	The approved scope increase associated with interim pass approval for the Government Transport and Communications modification.
SEA 1448 Phase 2B	Anzac ASMD 2B	155.4	This was a programmatic decision involving a transfer from SEA 1448 Phase 2A to replace the initial Very Short Range Air Defence with the Phased Array Radar System from CEA Technologies.
SEA 1439 Phase 3	Collins R&S	344.0	A range of programmatic funding decisions have been made with Collins-related projects to achieve optimum capability within the funding provided. For full details, please see the PDSS.
Total		17588.4	

Table 2C – Breakdown of Real Cost / Scope Variation

Project Number	Project	(e) Real Cost / Scope Variation \$m	Explanation
SEA 4000 Phase 3	AWD Ships	1199.5	This was a real cost increase (RCI) approved by Government in 2015. Following a number of independent reports, it was evident that the existing budget would be insufficient to complete the full project scope.
AIR 9000 Phase 2/4/6	MRH90 Helicopters	31.5	A RCI was approved by Government in 2008 to fund the Full Flight Mission Simulator, not included in the original scope.
AIR 5431 Phase 3	CMATS	247.5	A RCI was approved by Government in February 2018 to cover additional costs related to the acquisition.
SEA 1448 Phase 2B	Anzac ASMD 2B	214.7	A RCI of \$214.7m approved by Government in 2011 to allow the full scope to be provided and installed on ships 2-8.
Total		1693.2	

In-Year Cost

A summary of in-year project budget expenditure against the Portfolio Budget Statements and the Portfolio Additional Estimate Statements is shown in [Table 3](#).

The financial variation was primarily due to slippage in project plans, and the Quarter 4 Foreign Military Sales payment and other invoices being delayed for payment to July 2019. These variations were part of managing the overall end of financial year portfolio cash position. The variation explanations for each project can be found within Section 2.2A – In-year Budget Estimate Variance of the Project Data Summary Sheets (found in Part 3 of this Report).

Table 3 – Project in-year budget status

Project Number	Project	Portfolio Budget Statements \$m	Portfolio Additional Estimate Statements \$m	Final Plan \$m	Actual Spend \$m	Variation \$m (PBS-Actual Spend)	Variation \$m (Final Plan- Actual Spend)	Variation % (Final Plan - Actual Spend)
AIR 6000 Phase 2A/2B	Joint Strike Fighter	1,821.1	1,933.3	1,977.6	1,942.0	120.9	-35.6	-1.8%
SEA 4000 Phase 3	AWD Ships	375.9	226.2	226.6	198.9	-177.0	-27.7	-12.2%
AIR 7000 Phase 2B	P-8A Poseidon	592.3	408.9	472.6	472.4	-119.9	-0.2	0.0%
AIR 9000 Phase 2/4/6	MRH90 Helicopters	185.5	147.7	133.7	104.8	-80.7	-28.9	-21.6%
SEA 1180 Phase 1	Offshore Patrol Vessel	274.4	220.7	210.0	203.6	-70.8	-6.4	-3.0%
AIR 5349 Phase 3	Growler	197.4	193.1	175.3	127.2	-70.2	-48.1	-27.4%
LAND 121 Phase 3B	Overlander Medium/Heavy	627.6	638.8	628.9	586.7	-40.9	-42.2	-6.7%
AIR 9000 Phase 8	MH-60R Seahawk	138.6	167.0	142.1	117.7	-20.9	-24.4	-17.2%
JP 2048 Phase 4A/4B	LHD Ships	37.1	40.2	31.7	28.7	-8.4	-3.0	-9.5%
LAND 121 Phase 4	Hawkei	395.6	202.8	117.5	89.3	-306.3	-28.2	-24.0%
AIR 8000 Phase 2	Battlefield Airlifter	68.3	69.0	55.7	48.0	-20.3	-7.7	-13.8%
SEA 1654 Phase 3	MOSC	280.0	285.7	216.5	194.0	-86.0	-22.5	-10.4%
AIR 5431 Phase 3	CMATS	116.4	125.0	115.4	109.3	-7.1	-6.1	-5.3%
JP 2072 Phase 2B	Battle Comms Sys Ph2B	136.3	164.7	150.7	157.8	21.5	7.1	4.7%
AIR 7403 Phase 3	Additional MRTT	76.2	59.6	53.1	42.1	-36.1	-11.0	-20.7%
SEA 1448 Phase 2B	Anzac ASMD 2B	4.6	4.9	3.1	2.9	-1.7	-0.2	-6.5%
SEA 1439 Phase 5B2	Collins EW	63.9	77.8	76.8	63.8	-6.1	-13.0	-16.9%
SEA 3036 Phase 1	PPB-R	71.9	70.9	70.0	61.9	-10.0	-8.1	-11.6%
AIR 9000 Phase 7	HATS	90.3	89.0	88.5	92.0	1.7	3.5	4.0%
SEA 1439 Phase 3	Collins R&S	2.6	5.1	8.3	3.5	0.9	-4.8	-57.8%
LAND 53 Phase 1BR	Night Fighting Equip Repl	89.8	95.8	97.0	95.3	5.5	-1.7	-1.8%
SEA 1442 Phase 4	Maritime Comms	36.7	36.7	21.8	8.7	-28.0	-13.1	-60.1%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	5.7	6.7	5.6	3.6	-2.1	-2.0	-35.7%
SEA 1448 Phase 4B	ANAC Air Search Radar Repl	83.6	88.9	74.7	63.6	-20.0	-11.1	-14.9%
JP 2008 Phase 5A	UHF SATCOM	20.3	18.4	14.8	9.4	-10.9	-5.4	-36.5%
JP 2048 Phase 3	LHD Landing Craft	5.0	5.0	5.0	4.3	-0.7	-0.7	-14.0%
Total		5,805.1	5,381.9	5,173.0	4,831.5	-973.6	-341.5	-6.6%

Project Progress

There are a number of quantitative and qualitative methods used for showing project progress. Table 4 shows the project complexity and the Project Maturity Score as a number out of 70 (as outlined in the Project Data Summary Sheets), and the percentage of project budget expenditure of the MPR projects.

The percentage of budget spent is dependent on the characteristics of the project and the levels of early investment needed, so the relationship between budget and progress does not necessarily match. In addition, programs with multiple tranches and/or follow-on Final Operational Capability milestones may distort the per cent of budget expended data in the future.

This table also shows that 17 projects have expended more than half their total budget, and a number are at the final stages of project delivery.

Table 4 - Project Complexity and Maturity

Project Number	Project	Complexity (ACAT) ¹	Project Maturity Score ²	Per cent of budget expended ³
AIR 6000 Phase 2A/2B	Joint Strike Fighter	I	51	28
SEA 4000 Phase 3	AWD Ships	I	61	86
AIR 7000 Phase 2B	P-8A Poseidon	II	61	73
AIR 9000 Phase 2/4/6	MRH90 Helicopters	I	57	85
SEA 1180 Phase 1	Offshore Patrol Vessel	II	44	10
AIR 5349 Phase 3	Growler	II	58	69
LAND 121 Phase 3B	Overlander Medium/Heavy	I	60	66
AIR 9000 Phase 8	MH-60R Seahawk	II	61	73
JP 2048 Phase 4A/4B	LHD Ships	I	63	92
LAND 121 Phase 4	Hawkei	I	60	28
AIR 8000 Phase 2	Battlefield Airlifter	II	55	58
SEA 1654 Phase 3	MOSC	II	50	51
AIR 5431 Phase 3	CMATS	I	41	27
LAND 2072 Phase 2B	Battle Comms Sys Ph2B	I	53	52
AIR 7403 Phase 3	Additional MRTT	III	61	71
SEA 1448 Phase 2B	Anzac ASMD 2B	I	69	95
SEA 1439 Phase 5B	Collins EW	II	54	41
SEA 3036 Phase 1	PPB-R	II	60	22
JP 9000 Phase 7	HATS	II	69	80
SEA 1439 Phase 3	Collins R&S	III	60	85
LAND 53 Phase 1BR	Night Fighting Equip Repl	III	63	47
SEA 1442 Phase 4	Maritime Comms	II	50	40
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	III	68	86
SEA 1448 Phase 4B	ANZAC Air Search Radar Repl	II	52	46
JP 2008 Phase 5A	UHF SATCOM	II	54	88
JP 2048 Phase 3	LHD Landing Craft	III	67	76

Note 1: for the full list and description of ACAT levels, please see Appendix 3.

Note 2: Project Maturity Score is a number out of 70. Further information is at Appendix 4.

Note 3: Per cent of budget expended is the total project budget compared to expenditure as at 30 June 2019.

Contingency Management

Defence's contingency policy "Management of contingency budgets in Defence Acquisition Projects" was agreed by the Investment Committee in April 2019.

A core element of delivering Defence capital projects is the ability for project managers to manage risk around cost, schedule and scope that inevitably arise through executing projects. The purpose of a contingency provision is to estimate the inherent cost, schedule and technical uncertainties of in-scope work. This is a standard component of risk management as practiced under the Capability Life Cycle (CLC) and the Smart Buyer decision framework.

Not all projects have been allocated a contingency provision within its overall acquisition provision, which varies across projects depending on the complexity and risk of the activities it will undertake.

When a project is approved by Government, the Government agrees to an overall project acquisition budget, which includes:

- a cash budget of programmed expenditure for delivery of the project over its life; and
- a contingency budget which is not programmed or funded in cash terms.

Once Cabinet has approved a project, both the project's cash budget of programmed expenditure and the unfunded contingency budget are separately recorded in Defence's financial systems.

Projects must only seek to access their Government approved contingency budgets upon the agreed identification of a contingent risk to be mitigated. Contingency funding cannot be utilised to increase the scope of a project beyond that agreed by Government.

Projects are first encouraged to meet contingency funding requirements from within their currently programmed cash funding.

If this cannot be achieved, contingency funding will be sought from across the relevant capital program. If this is not affordable, then the contingency call will be presented to the Investment Committee, to be potentially be met from budget offsets across the whole Integrated Investment Program.

Each project data summary sheet reports on whether contingency has been applied to the project during the financial year.

Across the life of the 26 projects in this year's report (that is, from September 2000 to June 2019), projects have called upon approximately \$1.2 billion. This represents 2.0 per cent of the 26 projects combined project approval value of (\$64.1 billions).

The areas where risks have been retired using contingency include:

- systems development;
- systems integration;
- logistics and support;
- schedule constraints; and
- project resourcing.

Three projects have had contingency approved this financial year:

- AIR 9000 Phase 2,4 and 6 Multi-Role Helicopter of \$12.1 million;
- JP 2072 Phase 2B Battlespace Communications System of \$29.0 million; and
- SEA1654 Phase 3 Maritime Operational Support Capability of \$40.2 million.

For further details on reasons for accessing contingency, please refer to the project data summary sheet in Part 3 for each project.

Schedule

At the broader portfolio level, as reported in the Defence Annual Report, military equipment projects are being delivered within the agreed parameters of scope and cost. Where schedule slippage has occurred, project managers are working with the Capability Manager Representatives to manage the impacts without compromising capability.

Of the 22 projects carried over from the last report, there are 12 projects that reassessed their Final Operational Capability forecast date within 2018-19, with 11 of the 12 projects pushing out their Final Operational Capability date by between one and 24 months.

The average Final Operational Capability variance of projects reviewed in 2018-19 at 30 June 2019 is 27.8 per cent, which is similar to the 29.7 per cent in 2017-18. The project schedule status of the 26 projects in this year's report is shown in Table 4 from Second Pass through to Final Materiel Release and Final Operational Capability.

Table 4 – Project Schedule Status

Project Number	Project	(a) 2nd Pass Approval	(b) Originally Estimated FMR	Forecast FMR at 30 Jun 18	(c) Forecast FMR at 30 Jun 19	(c-b) FMR variation (months)	(c-a)/(b-a) Variation Percentage FMR	(d) Originally estimated FOC	Forecast FOC at 30 Jun 18	(e) Forecast FOC at 30 Jun 19	(e-d) FOC variation (months)	(e-a)/(d-a) Variation Percentage FOC
AIR 6000 Phase 2A/2B	Joint Strike Fighter	Nov 09	Dec 23	Sep 23	Sep 23	-3	-1.8%	Dec 23	Oct 23	Oct 23	-2	-1.2%
SEA 4000 Phase 3	AWD Ships	Jun 07	Dec 17	Jan 20	Mar 20	27	21.4%	May 18	Jan 21	Jun 21	38	28.3%
AIR 7000 Phase 2B	P-8A Poseidon	Feb 14	Oct 19	May 22	Jun 22	32	47.1%	Jan 20	May 22	Jun 22	29	40.8%
AIR 9000 Phases 2/4/6	MRH90 Helicopters	Aug 04	Oct 14	Jun 20	Jun 21	81	65.6%	Jul 14	Dec 21	Dec 21	90	74.8%
SEA 1180 Phase 1	Offshore Patrol Vessel	Nov 17	Dec 29	-	Dec 29	0	0.0%	Jun 30	-	Jun 30	0	0.0%
AIR 5439 Phase 3	Growler	Apr 13	Jul 22	Jul 22	Aug 22	1	0.9%	Jul 22	Jul 22	Aug 22	1	0.9%
LAND 121 Phase 3B	Overlander Medium/Heavy	Jul 13	Dec 22	Dec 22	Dec 22	0	0.0%	Dec 23	Jun 23	Jun 23	-6	-4.8%
AIR 9000 Phase 8	MH-60R Seahawk	Jun 11	Dec 23	Dec 23	Dec 23	0	0.0%	Dec 23	Dec 23	Dec 23	0	0.0%
JP 2048 Phase 4A/4B	LHD Ships	Jun 07	Aug 15	Dec 18	Dec 19	53	53.1%	Nov 16	Dec 19	Dec 19	38	32.7%
LAND 121 Phase 4	Hawkei	Aug 15	Dec 21	Dec 21	Dec 21	0	0.0%	Jun 23	Jun 23	Jun 23	0	0.0%
AIR 8000 Phase 2	Battlefield Airlifter	Apr 12	Oct 17	Oct 19	Oct 19	24	36.3%	Dec 17	Dec 19	Dec 19	24	35.3%
SEA 1654 Phase 3	MOSC	Apr 16	Mar 21	Mar 21	Mar 21	0	0.0%	Dec 22	May 22	Dec 22	0	0.0%
AIR 5431 Phase 3	CMATS	Dec 14	Aug 25	TBA	Aug 25	0	0.0%	Jun 23	Oct 25	Oct 25	28	27.5%
JP 2072 Phase 2B	Battle Comms Sys Ph2B	Apr 15	Nov 20	Dec 20	Mar 22	16	23.8%	Sep 20	Sep 20	Sep 22	24	36.9%
AIR 7403 Phase 3	Additional MRTT	Jun 15	Mar 18	Oct 19	Oct 19	19	57.7%	Mar 18	Oct 19	Dec 19	21	63.7%
SEA 1448 Phase 2B	Anzac ASMD 2B	Sep 05	Jul 17	Jul 18	Nov 18	16	11.3%	Mar 13	Aug 18	Jun 19	76	83.4%
SEA 1439 Phase 6B2	Collins EW	Jun 15	Jul 22	-	Jun 26	48	55.3%	Dec 24	-	Dec 27	37	31.5%
SEA 3036 Phase 1	PPB-R	Apr 16	Nov 23	Nov 23	Nov 23	0	0.0%	Sep 23	Nov 23	Nov 23	2	2.3%
JP 9000 Phase 7	HATS	Aug 14	Dec 18	Mar 19	Apr 19	4	7.6%	Dec 20	Sep 20	Dec 20	0	0.0%
SEA 1439 Phase 3	Collins R&S	Sep 00	Oct 22	Dec 22	Dec 22	2	0.8%	Jun 14	Jun 23	Jun 23	110	65.5%
LAND 53 Phase 1BR	Night Fighting Equip Repl	Aug 16	Mar 23	-	Mar 23	0	0.0%	Sep 23	-	Sep 23	0	0.0%
SEA 1442 Phase 4	Maritime Comms	Jul 13	May 23	Jun 24	Jun 24	13	11.1%	Dec 23	Jul 24	Jan 25	13	10.4%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	Nov 11	Sep 16	Nov 18	Jan 19	28	48.2%	Jun 16	Dec 18	Sep 19	40	70.9%
SEA 1448 Phase 4B	ANAC Air Search Radar Repl	Jun 17	Apr 24	-	Apr 24	0	0.0%	Jun 24	-	Jun 24	0	0.0%
JP 2008 Phase 5A	UHF SATCOM	Mar 09	Mar 14	Dec 19	Mar 20	73	120.0%	Jun 18	Mar 20	Dec 21	43	37.9%
JP 2048 Phase 3	LHD Landing Craft	Sep 11	Feb 16	Dec 16	Dec 16	10	18.8%	Feb 16	TBA	Dec 19	47	86.7%
Average Variations		-	-	-	-	17	22.2%	-	-	-	25	27.8%

Schedule Variation in context

As outlined previously, the projects listed in the Major Projects Report are generally the larger acquisition projects that contain inherent risk, and as such, are more likely to encounter schedule delay, compared to other projects not included in this report. Most are legacy projects that have not otherwise benefited from the improvements to the risk management practices where the aim is to reduce the level of risk as the project progresses.

Defence has broken down the additional schedule variance factors which can be attributed to the projects which have greater than 10 per cent Final Operational Capability variance across the life of the project.

Table 5A lists those that have had an unplanned real cost or schedule increase, as outlined in the Cost Performance section of the report (see page 80). Projects with both planned programmatic returns and unplanned returns to Government have been included in this table only.

Table 5A – Schedule Variance for Projects with unplanned Real Cost / Scope Variation

Project	Key Drivers of FOC Schedule Variance
Air Warfare Destroyer	Underestimation of developing a modified design, undertaking a block construction method, and re-establishing Australia's shipbuilding capability.
MRH90 Helicopter	This project is currently managed as a Project of Concern and has encountered a range of technical challenges leading to schedule delay.
CMATS	A number of technical issues and challenges associated with the unique commercial arrangements have impacted the schedule.
ANZAC ASMD 2B	The project was scoped to deliver high risk, leading edge and developmental technology.

Note: only projects with a 10% or greater Final Operational Capability variance are included.

Table 5B lists projects where there have been subsequent government approvals, as outlined in the Cost Performance section of the report (see page 80). The two projects in this table experienced transferred scope to realise more efficient project management practices. This report uses the originally estimated milestone for comparison (rather than the re-baselined schedule as part of this Government approval). The projects with planned returns to Government for follow-on Second Pass approvals, tranching or rolling program approvals have not needed to modify their original planned Final Operational Capability date, as the original acquisition strategy would have accounted for follow-on approvals.

Table 5B – Schedule Variance for Projects with Subsequent Government Approvals

Project	Key Drivers of FOC Schedule Variance
P-8A Poseidon	A third set of four aircraft was approved by Government in February 2016. Schedule variance occurred as a result of the increased scope.
Additional MRTT	Schedule Variance is directly linked to the inclusion of the Government Transport and Communications modification.

Note: only projects with a 10% or greater Final Operational Capability variance are included.

Table 5C lists all other projects in this report that have had schedule variation of over 10 per cent. This table provides transparency of projects with schedule slip not attributed to other Government decisions.

For further detail on project schedule dates and variance explanations see Section 3 – Schedule Performance within the Project Data Summary Sheets.

Table 5C – Schedule Variance for Other Projects

Project	Key Drivers of FOC Schedule Variance
LHD Ships	Technical issues impacted the availability of the LHDs to progress test and evaluation activities, leading to a delay of key schedule milestones.
Battlefield Airlifter	Schedule delays due to: aircraft production delays associated with the transfer of the fuselage assembly line; aircraft availability reducing training throughput; the delayed start to US-based training; and establishing facilities.
Collins EW	Key risks relate to the complexity of the required capability, stakeholder engagement and challenges in achieving software security accreditation. Installation is also dependant on the Submarine docking cycle, noting installation on a 2nd platform has been brought forward from a Full Cycle Docking to an earlier Mid Cycle Docking.
Collins RCS	This project was approved in September 2000 (pre-Kinnaird) and contains legacy elements from a range of other Collins projects. Variance is primarily due to changes in docking maintenance schedule since original MAA.
Maritime Comms	Delivery and installation schedule changed to align with the Anzac Midlife Capability Assurance Program.
Battle Comm. Sys. (Land)	Variation was due to administrative process delays that did not adversely affect capability.
UHF SATCOM	Schedule variation due delays in in software development, the provision of Government Furnished Equipment, and integration and security challenges.
LHD Landing Craft	The delays were primarily due to deferment of the outstanding operational testing of heavy loads.

Note: only projects with a 10% or greater Final Operational Capability variance are included.

Materiel scope and capability

A capability in Defence terms is the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. As outlined previously, Defence prioritises the delivery of safe and effective capability to support the ADF over schedule.

Materiel scope performance measures indicate a forecast of the materiel element of capability against the Final Materiel Release milestones, identified in the Materiel Acquisition Agreement at 30 June 2019. It should be noted that this measure does not include the fundamental inputs to capability (such as workforce) and are not necessarily indicative of each project's ultimate ability to deliver the final intended capability effect.

The subjective 'traffic light' assessment of each element is indicative of:

- green – a high level of confidence that the capability outcome will be met;
- amber – the capability outcome being under threat but still considered manageable and able to be met; and
- red – at this stage, the capability outcome is unlikely to be fully met.

Of 26 projects in this year's report:

- 21 projects had 100 per cent of the measures as green;
- Four projects have measures which are under threat (amber); and
- One project is reporting an element that is unlikely to be fully met.

Details of amber and red portions included are outlined in Table 6 below. As outlined above, this is not indicative of Defence's expected capability delivery. For further detail on the Capability/Scope Delivery Performance for individual projects please see Section 4 – Materiel Capability Delivery Performance in the Project Data Summary Sheet.

Detail of the capital equipment assets to be delivered for projects (the materiel scope), is defined in the Materiel Acquisition Agreement, the Operational Concept Document and the Function and Performance Specification.

Table 6 – Details of projects reporting Amber or Red measures

Project	Pie Chart Traffic Light	Narrative for Amber / Red Rating
JP 2048 Phase 3 - LLC	Amber (1%)	The testing of heavy loads in May 2016 was not completed as planned for safety reasons. Navy is planning to complete the trial and confirm design and LLC capacity to carry heavy loads in July 2019.
AIR 8000 Phase 2 - Battlefield Airlifter	Amber (10%)	AIR 8000 Phase 2 remains committed to the timely delivery of capabilities to support operational intent of the C-27J. AIR 8000 Phase 2 is forecasting the project will be unable to complete FMR in Oct 2019 and that further work to support an ongoing automatic dependent surveillance broadcast modification upgrade, achievement of the full military type certification, and final spares delivery (less than 1% remaining).
LAND 121 Phase 4 - Hawkei	Amber (14%)	The Initial Materiel Release milestone will be delayed by 12 months to May 2020. This is due to ongoing Hawkei Reliability issues, design maturity, and production delays caused by Steyr Motors voluntary administration. The above issues have also put two subsequent Materiel Release milestones at high risk.
AIR 9000 Phases 2,4,6 - MRH-90	Amber (25%)	MRHPO continues to work with industry to contract, redesign and deliver outstanding role including the Taipan Gun Mount, Common Mission Management System and new Mission Troop Seats.
SEA 4000 Phase 3 - Air Warfare Destroyer	Red (1%)	This project will not deliver a Radar - Electronic Attack capability. Funding will being used to help develop an indigenous Electronic Attack system for use in the Hobart Class and other Navy vessels.

Acquisition Governance

Smart Buyer

The Smart Buyer program has matured over the last financial year, and is likely to continue to adapt to the changing environment. Surveys on whether the process adds value have seen strong positive results with 98 per cent confirming the process adds value and offers unique insights to Defence Projects.

Smart Buyer supports key stakeholders working together to identify and analyse risks and drivers, and use that analysis to develop appropriate strategies – relating to projects or to other complex undertakings. It is expected that the Smart Buyer will focus on the Australian Industry Capability (AIC) improvements and obtain a deeper engagement with industry to ensure AIC strategies reflect the local industry capability.

In 2018-19 the Capability Acquisition and Sustainment Group held 91 Smart Buyer workshops supporting projects and products. The Capability Acquisition and Sustainment

Group Smart Buyer workshop numbers are detailed by stage in the Capability Life Cycle in the [Table 7](#) below. In addition, the Smart Buyer program has supported:

- Sustainment products such as Non-Combat Clothing and Surveillance and Control to maximise the opportunities a sustainment re-tender offers Defence and Industry;
- other large capability procurements, such as the Fuel Services Program and Defence Force Recruiting; and
- Information Communications Technology and Estate projects.

Table 7 – Capability Acquisition and Sustainment Group Smart Buyer Assessments in 2018 - 19

Smart Buyer Assessments	No. held
Gate Zero	39
Gate One	24
Gate Two	12
Other activities	15

Defence Independent Assurance Reviews

Defence Independent Assurance Reviews are conducted by Capability Acquisition and Sustainment Group and provide high quality and reliable advice to Defence regarding the health and outlook of programs, acquisition projects and sustainment products across the capability life cycle. Review teams are selected for their experience and expertise in a variety of disciplines relevant to the matter under consideration.

Depending on the risks or issues identified during the course of the review, which typically includes interviews with stakeholders such as the Project Manager, Program Sponsor and Capability Manager, a formal Board meeting is normally held to better understand the positions of the various parties. The Board will also begin to review the progress against AIC plans as part of the review process. The Board Chairperson may make recommendations regarding the ongoing conduct of the project or product under consideration, including whether it should be considered a candidate for Project of Interest or Project of Concern status by senior executives.

During FY 2018-19 there were 135 Defence Independent Assurance Reviews covering 164 project phases or products. In addition to reviews of Capability Acquisition and Sustainment Group matters, the Defence Independent Assurance Review process is increasingly being applied to selected Chief Information Officer Group projects, and range of projects delivered by the Australian Signals Directorate and the Australian Geospatial Organisation.

Defence Independent Assurance Reviews are broken down by project phase in the Capability Life Cycle in [Table 8](#) below.

Table 8 – Defence Independent Assurance Reviews

Defence Independent Assurance Reviews by project phase	No. held
Gate Zero	13
Gate One	12
Gate Two	22
Performance (during delivery)	87
Sustainment	30

Of these, 17 of the 26 projects listed in the Major Projects Report had an Independent Assurance Review conducted in 2018-19.

Agreements

Materiel Acquisition Agreements are the key governance document for project monitoring and reporting and detail the capability, cost and schedule expected to be delivered. This document forms the basis for monthly and quarterly project performance reporting, and is used extensively in the Major Projects Report.

Defence has undertaken a review of the current Materiel Acquisition Agreement templates, with an aim to improve the capture of information. As a result, Agreements have been updated to better reflect “One Defence” requirements, and to eliminate the need to capture additional baseline information for performance reporting.

Performance Management

Overall, performance of the Department's major capital equipment program in the 2018-19 financial year is strong. Of the 124 post Second Pass approved major capital equipment projects, two projects (or 1.6 per cent) had issues with capability, schedule or cost which were significant enough to be included in the Projects of Concern report. A further 13 projects (or 10.5 per cent) were identified as Projects of Interest, with risks associated with capability, schedule or cost that warrant further attention from internal Defence line management and senior executives.

In the context of the Major Projects Report, one of the 26 projects is a Project of Concern (3.8 per cent) and a further six were managed as Projects of Interest (23.1 per cent). Further details on Projects of Concern and Projects of interest can be found on pages 99–100.

Quarterly Performance Report

The Capability Acquisition and Sustainment Quarterly Performance Report (QPR) provides the Department and the Ministers with insight into the performance of Defence's major capital equipment acquisition and sustainment program. The QPR also fulfils Deputy Secretary Capability Acquisition and Sustainment's obligation in accordance with the First Principles Review under recommendation 2.12:

“...the Deputy Secretary Capability Acquisition and Sustainment must sign off and assure the Secretary of the operational output of each of his/her divisions every quarter...”

The QPR is a summary of performance at the end of each quarter on the key acquisition projects and sustainment products. These are comprised of the Top 30 projects and sustainment products listed in the Defence Portfolio Budget Statements and the projects featured in the Major Projects Report.¹³⁵

The QPR provides the Defence Ministers and senior Defence stakeholders with information about emerging risks and issues. It is one of the tools that support decision-making on

¹³⁵ SEA 1439 Phase 5B2 was not in the Quarterly Performance Report for 2018-19. This project and all expected MPR projects for 2019-20 are included in the 2019-20 QPR reporting.

management actions such as assessing Projects of Interest or Projects of Concern. This is in addition to the regular engagement senior stakeholders across Defence have through the monthly project and sustainment performance reporting.

A continuous improvement approach has benefitted both the monthly performance reporting and the QPR. These have included system enhancements to capture information more efficiently and increase consultation. Feedback on the content and format is regularly sought from all stakeholders including members of the Defence Investment Committee and the Defence Audit and Risk Committee.

The Australian National Audit Office conducted a Performance Audit into Defence's Quarterly Performance Report on Acquisition and Sustainment, tabled on 23 July 2019. The objective of the audit was to examine the effectiveness of the Quarterly Performance Report as a mechanism to inform senior stakeholders about risks and issues in the delivery of the capability to the Australian Defence Force. The Australian National Audit Office concluded the report is largely effective. Defence has agreed to and implemented the recommendation to improve the Quarterly Performance Report with trend performance data for sustainment products; and emerging candidates for the Projects/Products of Concern list and Products/Projects of Interest list.

Projects of Interest

Projects (and products) showing heightened risks in the areas of cost, scope, schedule, capability, commercial strategy and/or other issues are monitored through a variety of sources, and consultation with senior stakeholders occurs before determining a Project of Interest. Once listed, reporting requirements are increased with a more detailed summary of issues, along with proposed remediation strategies to get the project/product back on track. This information forms part of the QPR. The Projects of Interest 'list' is used for internal departmental and Ministerial reporting and management purposes. The broad goal is to provide senior management oversight, returning projects to satisfactory performance, and preventing projects from becoming Projects of Concern.

Projects of Concern

Projects (or sustainment activities) identified as a Project of Concern have technical, cost or schedule challenges that benefit from additional support from senior executives and Ministers. Projects are removed from the list through project remediation or project contract cancellation with the approval of the Ministers. Projects of Concern receive a higher level of oversight and management and undertake more detailed reporting to Government.

As at 30 June 2019, MRH90 Helicopters (AIR 9000 Phase 2, 4 & 6) is the only project in this year's Major Projects Report that is being managed under the Projects of Concern regime.

Since 2008, 25 projects, with a total value of \$32.4 billion, have been managed this way. As at 30 June 2019, the two active Projects of Concern had a total value of \$3.9 billion.

Table 9 lists the Projects of Concern as at 30 June 2019.

Table 9: Projects of Concern at 30 June 2019

Project Number	Project Name	Date Added
AIR 9000 Phases 2, 4 & 6	MRH90 Helicopters	Nov 2011
AIR 5431 Phase 1	Deployable Defence Air Traffic Management and Control System	Aug 2017

The Australian National Audit Office Performance Audit conducted a Performance Audit into Defence's Management of its Projects of Concern, tabled on 26 March 2019. Defence agreed to the two recommendations made that:

1. Defence introduce, as part of its formal policy and procedures, a consistent approach to managing entry to, and exit from, its Projects of Interest and Projects of Concern lists. This should reflect Defence's risk appetite and be made consistent with the new Capability Acquisition and Sustainment Group Risk Model and other, Defence-wide, frameworks for managing risk. To aid transparency, the policy and the list should be made public.
2. Defence evaluates its Projects of Concern regime.

Improvement Initiatives

Risk Reform

The 2018-19 Defence Annual Report notes that, at the Portfolio level, Defence continues to manage and balance risk to deliver performance outcomes.

Defence reviewed and updated its risk reporting framework to strengthen alignment between enterprise risk management, corporate planning and performance reporting to improve the quality of decision-making.

The Capability Acquisition and Sustainment Group (CASG) is reforming its management of risk to align enterprise-level and specialist risk management practice within the One Defence Enterprise Risk Management Framework. A cultural and behavioural change to the way risk is managed in CASG will ensure the success of the Risk Management Framework.

CASG is committed to continuously improving its approach to risk management. A DEPSEC CASG directive, and accompanying CASG Risk Management Framework will be released in Quarter 1, 2020 requiring CASG, at all levels, to align, integrate, interface and continuously improve risk management with Government, Capability Managers, and Defence Industry.

The CASG Risk Management Framework sets out the objectives of the Group's risk management program and details the approach to risk management across the Group. CASG's Risk Management Framework includes artefacts, applications, tools and templates providing guidance and practical assistance on how risk is managed in a One Defence approach.

Particular artefacts that have been developed include an Application Map for considering the areas of risk in CASG, and four Handbooks: Introduction to Risk Management, Risk Management Process, Risk Management Framework and Risk Conversations. These artefacts will be released concurrently with the Directive and Framework. A Risk Management Strategy 2020-2022 has also been developed and subordinate plans to reflect the priorities within the strategy are in development. It is anticipated the CASG Risk Management Strategy will be approved and released early in 2020.

A CASG Risk Management Manual is being developed, which will refresh risk guidance for

CASG Project, Product and Program Managers. It is expected this will be finalised by end of Q1, 2020.

Project Maturity Scores

An updated draft Project Maturity Score policy has been developed and is being reviewed as part of a wider evaluation of the Program Management governance frameworks. The Capability Acquisition and Sustainment Group has changed the policy name to Project Progress Score which describes the updated policy as it is intended to be used by project managers to assess the project's progress through the Capability Life Cycle. The updated Project Progress Score policy is also being more clearly aligned with the Smart Buyer policy language for consistency.

In a mature state, the policy will be supported by the Capability Acquisition and Sustainment Group reporting solution and reported in a later Major Projects Report (if still considered relevant).

System Program Office Reform

Systems Program Offices (SPO) Reform is a mechanism for the Capability Acquisition and Sustainment Group (CASG) to implement the agreed outcomes following from the First Principles Review (FPR).

Through SPO reform, it is envisioned that CASG will be able to deliver capability in a more efficient manner to Capability Managers. The core business will change from a primarily transactional role to focus on contracting, assurance, planning and governance. Industry will play a key role in project execution, working in genuine partnership with CASG. For the SPOs this involves understanding and clearly articulating the requirements, and allowing the suppliers to maximise efficiency and finding innovative solutions to deliver the outcomes. The increased focus on governance will allow the SPO to rapidly identify problems in the business and work with industry to solve these problems in an agile manner.

This is achieved by designing each SPO to ensure that they have the right size workforce, with the right skills and the most appropriate commercial model to deliver improved

capability, on time and within budget, within a complex environments. Currently, 63 per cent of SPOs are now aligned with the First Principles Review model, and the total number of SPOs has reduced from 78 to 61 through a consolidation process.

Restructures are complex because the process may depend on extant contracts. The full revision to a new commercial model may not be realised until legacy arrangements have ceased. In addition, the timing of reform may be impacted by Industry's capacity to support the new approach, and the associated upskilling and professionalisation of staff. Where necessary a formal organisational change management process, including union consultation, is conducted in company with the reform activities.

Improved Contract Management

Defence is currently reviewing the Contract Management Framework, with the aim to deliver Best Practice Contract Management in Defence, focussed on delivery of value for money outcomes, and collaborative, non-adversarial engagement with industry. It focuses on the leadership behaviours and cultural change needed to deliver effective contract outcomes to improve the way contracts are established and managed.

Australian Industry Capability (AIC)

Whilst Defence has always retained operational capability as the key driver in defence procurements, the level of Australian Industry Capability (AIC) has varied. AIC was highly valued in Defence 20 years ago, however, the previous decades saw a growth in the mining sectors and workforce priorities naturally shifted to this sector. This coincided with the nature of many Defence projects being Military Off-the-Shelf with minimal modifications.

Defence is currently investigating ways to actively enhance AIC and provide greater transparency into the current status and level of AIC. Defence plans to accelerate the delivery of key reforms to the AIC Program introduced through the 2016 Defence Industry Policy Statement and the 2019 Defence Policy for Industry Participation, returning AIC as a real priority to the Defence sector.

As part of this, Defence will establish and implement an AIC Promotion Plan. This plan will articulate specific improvement options and reporting transparency, including AIC information in future Major Projects Reports. As outlined above, AIC will also form part of the Smart Buyer and Independent Assurance Review processes. The aim is to ensure Government has visibility of the level of industry capabilities being developed and has the ability to make policy adjustments to drive industry capability growth and development.

Case Study: Warship Asset Management Agreement Alliance – Partnering with Industry

The Warship Asset Management Agreement (WAMA) is a four-way alliance between the Commonwealth's Capability Acquisition and Sustainment Group (CASG), Saab Australia (Saab), BAE Systems Australia and Naval Ship Management Australia (a joint venture between Babcock and UGL) for the provision of total asset management of the Royal Australian Navy's ANZAC Class Frigate.

This arrangement is in line with the First Principles Review System Program Office (SPO) reform objectives, and supports long-term relationships with industry that will underpin sovereign capabilities essential to delivery of continuous shipbuilding and sustainment, as outlined in the Defence White Paper.

The scope of work under the WAMA Contract covers a wide range of activities required to support the ANZAC Class and associated shore training facilities. Scheduling both capability upgrades and obsolescence management activities, in line with the Anzac Class Mid-life Capability Upgrade Program (AMCAP), will be particularly important and will help Defence better manage the transition between the ANZAC Class and the Hunter Class to be delivered under SEA 5000.

The following projects have links to the WAMA, including a number included in this year's Major Projects Report:

- AIR 9000 Phase 8 – MH60-R Helicopter
- JP 2069 Phase 2 – High Grade Cryptographic Equipment Modernisation
- JP 2089 Phase 2A – VMF and Link 16 Integration
- NMP 1883 Phase 1&2 – Warship Automatic Identification System
- SEA 1352 Phase 1 – Evolved Sea Sparrow Missile Upgrade and Inventory Replenishment
- SEA 1397 Phase 5B – Nulka Launch Subsystem Improvements
- SEA 1408 Phase 2 – Torpedo Self Defence Installation
- SEA 1442 Phase 4 – Maritime Communications Modernisation
- SEA 1448 Phase 4A – ANZAC Class Electronic Support System Improvements
- SEA 1448 Phase 4B – ANZAC Class Air Search Radar Replacement
- SEA 3035 Phase 1 – Navy Training Pipeline Simulation Requirements
- SEA 5000 Phase 1 – Hunter Class Frigate Acquisition Program

Appendices

Appendix 1: List of projects removed from the Major Projects Report since its inception

Table A1 – Removed MPR projects

Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to date \$m	Remaining Budget \$m	FMR Achieved/ Forecast	FOC Achieved/ Forecast	Reason for Exit
AIR 5376 Phase 3.2	F/A 18 Hornet Upgrade Structural Refurbishment (Hornet Refurb)	2008-09	2010-11	319.1	319.1	0.0	N/A	N/A	JCPAA Approval ¹
AIR 8000 Phase 3	C-17 Heavy Airlift	2008-09	2011-12	1,423.4	1,423.4	0.0	Dec-11	Dec-11	FOC achieved
AIR 5349 Phase 1/2	Bridging Air Combat Capability	2008-09	2012-13	3,661.4	3,045.9	651.5	Dec-12	Dec-12	FOC achieved
SEA 1444 Phase 1	Armada Class Patrol Boat	2007-08	2012-13	537.2	530.3	6.9	Nov-07	Oct-12	FOC achieved
LAND 19 Phase 7A	Counter-Rocket/Artillery and Mortar	2011-12	2012-13	265.7	186.1	79.6	Jan-13	Jan-13	FOC achieved
AIR 5376 Phase 2	F/A 18 Hornet Upgrade	2007-08	2013-14	1,882.5	1,663.8	218.7	Sept 12	Oct-14	FMR achieved
AIR 5418 Phase 1	Follow On Stand Off Weapon	2009-10	2013-14	319.0	287.1	31.9	Sept 13	Jan-14	FOC achieved
JP 2008 Phase 4	Next Generation SATCOM Capability	2009-10	2013-14	869.5	569.1	300.4	Jun-14	Jul-15	FMR achieved
JP 2043 Phase 3A	High Frequency Modernisation	2007-08	2013-14	580.2	498.1	82.1	Dec-17	Dec-17	JCPAA Approval ²
LAND 17 Phase 1A	Artillery Replacement	2010-11	2013-14	158.5	158.5	0.0	Sept-13	Oct-14	FMR achieved
SEA 1390 Phase 2.1	Guided Missile Frigate Upgrade Implementation	2007-08	2013-14	1,453.8	1,374.7	79.0	Jun-16	Jun-16	JCPAA Approval ³
SEA 1390 Phase 4B	SM-1 Missile Replacement	2010-11	2013-14	416.1	356.5	59.7	Feb-15	Jun-15	JCPAA Approval ⁴
AIR 5077 Phase 3	Airborne Early Warning and Control Aircraft	2007-08	2014-15	3,885.3	3,559.6	285.7	Feb-15	May-15	FOC achieved

Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to date \$m	Remaining Budget \$m	FMR Achieved/ Forecast	FOC Achieved/ Forecast	Reason for Exit
LAND 75 Phase 3.4	Battlefield Command Support System	2010-11	2014-15	315.7	271.9	43.8	Mar-15	Apr-15	FOC achieved
AIR 5402	Air to Air Refuelling	2008-09	2015-16	1,818.7	1,764.3	54.4	May-16	Jul-16	FOC achieved
AIR 87	Armed Reconnaissance Helicopter	2007-08	2016-17	1867.7	1867.7	0.0	Mar-14	Apr-16	FOC achieved with Caveats
AIR 9000 Ph5C	Additional Medium Lift Helicopter	2010-11	2016-17	643.9	459.5	175.4	Jul-17	Jul-17	FOC achieved
LAND 116	Bushmaster Protected Mobility Vehicle	2007-08	2016-17	1,036.1	1,036.1	0.0	Oct-17	Jan-17	FOC achieved
LAND 121 Ph3A	Overlander Vehicles (Light)	2009-10 (as Ph 3) 2012-13 (as Ph 3A)	2016-17	900.3	900.3	0.0	Oct-16	Oct-16	FOC achieved
LAND 75 Ph4	Battlefield Command Systems	2015-16	2017-18	316.4	280.8	35.6	Dec-17	Dec-17	FOC achieved
SEA 1439 Ph4A	Collins Replacement Combat System	2007-08	2017-18	438.8	438.8	0.0	Oct-18	Dec-18	JCPAA Approval ⁵
SEA 1429 Ph2	Replacement Heavyweight Torpedo	2009-10	2017-18	428.7	337.5	91.2	Oct-18	Dec-18	JCPAA Approval ⁶
SEA 1448 Ph2A	ANZAC Anti-Ship Missile Defence	2009-10	2017-18	386.7	379.6	7.1	Jul-18	Aug-18	JCPAA Approval ⁷

Notes:

- Approval granted after project scope and budget were approved for transition to the in-service sustainment support system in 2010-11
- Approval granted in 2014 based on a risk assessment performed by the then DMO and endorsed by the Capability Manager, which concluded the overall risk rating for remaining work was low
- Approval granted in 2018 based on a risk assessment performed by CASG and endorsed by the Capability Manager, which concluded the overall risk rating for remaining work was low.

Appendix 2: Lessons learned

The 2018-19 Guidelines state that “for each project which has been removed, the lessons learned at both the project level and the whole-of-organisation level should be included as a separate section in the *following* Defence MPR”.¹³⁶

Previously, lessons learned for all MPR projects have been included in this section. Many of these lessons were learned were outdated and applied to a different operating environment under the Defence Materiel Organisation. Including the outdated lessons has also led to difficulties finding newer lessons in the table below. Historical lessons can be found in previous published MPRs.

Table A2. Lessons learned

Categories of systemic lessons	Project lesson	Project learned from
Contract management	Ensuring that stakeholder engagement at all levels (engineering and strategic) is culturally embedded within the Project Team.	SEA 1448 Phase 2A - ANZAC Anti-Ship Missile Defence
First of Type Equipment	Engaging in a joint development project where Australia is the junior partner and largely dependent on the US Government program can introduce project management, cost, technology, gaps in OQE and schedule risk that needs to be addressed.	SEA 1439 Ph4A – Collins Replacement System
First of Type Equipment	Discipline in writing robust and understandable descriptions for failed requirements, deficiencies and non-compliances is essential. The deficiencies should be written to inform both technical and operational personnel. The benefit is better quality documentation and less re-work by other staff in the future.	SEA 1439 Ph4A – Collins Replacement System
Requirements Management	Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US Government International Traffic in Arms Regulation can require up to a year to progress.	SEA 1439 Ph4A – Collins Replacement System
Requirements Management	Robust procedures, processes and discipline must be implemented when managing requirements for multiple baseline combat systems. Maintaining expertise with a Requirements Management tool is essential to ensure reliable outputs and reduced re-work.	SEA 1439 Ph4A – Collins Replacement System

¹³⁶ 2018-19 Major Projects Report Guidelines, paragraph 1.13, emphasis applied.

Categories of systemic lessons	Project lesson	Project learned from
Requirements Management	Adequate implementation of Project Systems Engineering processes. In light of this, the ASMD Project has rigidly followed a disciplined systems engineering process that has ensured the complete traceability from requirements through to final acceptance testing.	SEA 1448 Phase 2A - ANZAC Anti-Ship Missile Defence
Resourcing	Ensure that adequate staffing and resources are available, in particular if Defence is to be both the prime systems integrator and Project Authority.	SEA 1439 Ph4A – Collins Replacement System
Schedule Management	Ensure that all project dependencies are established before schedule is established.	SEA 1439 Ph4A – Collins Replacement System

Appendix 3: Acquisitions categories

Defence categorises its acquisition projects to enable it to differentiate between the complexities of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning. Projects are graded into one of four acquisition categories (ACATs):

- ACAT I – These are major capital equipment acquisitions that are normally the ADF's most strategically significant. They are characterised by extensive project and schedule management complexity and very high levels of technical difficulty, operating, support and commercial arrangements;
- ACAT II – These are major capital equipment acquisitions that are strategically significant. They are characterised by significant project and schedule management and high levels of technical difficulty, operating, support arrangements and commercial arrangements;
- ACAT III – These are major or minor capital equipment acquisitions that have a moderate strategic significance to the ADF. They are characterised by the application of traditional project and schedule management techniques and moderate levels of technical difficulty, operating, support arrangements and commercial arrangements; and
- ACAT IV – These are major or minor capital equipment acquisitions that have a lower level of strategic significance to the ADF. They are characterised by traditional project and schedule management requirements and lower levels of technical difficulty, operating, support and commercial arrangements.

As the complexity of a project will vary over its life cycle, Defence reviews project acquisition categories at defined milestones between entry into the Integrated Investment Program and project completion.

The ACAT framework provides a recognised, consistent and repeatable methodology for categorising projects and aligning project managers' certified experience and competencies to the complexity and scale of projects under management.

The ACAT level of a project is assessed against six project attributes:

- acquisition cost - the approved budget for the project;
- project management complexity - the complexity of project management necessary for its execution;
- schedule complexity - the inherent complexity brought about by delivery pressures on the project;

- technical difficulty - the complexities associated with technical undertakings such as design and development, assembly, integration, test and acceptance;
- operation and support - the complexity associated with preparing the organisation and environment in which the system will be operated, supported and sustained; and
- commercial experience - the readiness and capability of industry to develop, produce and support the required capability, and the complexity of the commercial arrangements being managed.

Appendix 4: Project Maturity

CASG's project maturity score quantifies the maturity of a project by way of a score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. This score is then compared against an ideal or benchmark score for that milestone. A project's maturity is assessed on 16 milestones across its lifecycle and for each of these milestones the ideal or benchmark condition is represented by a benchmark score as shown in Figure A1.

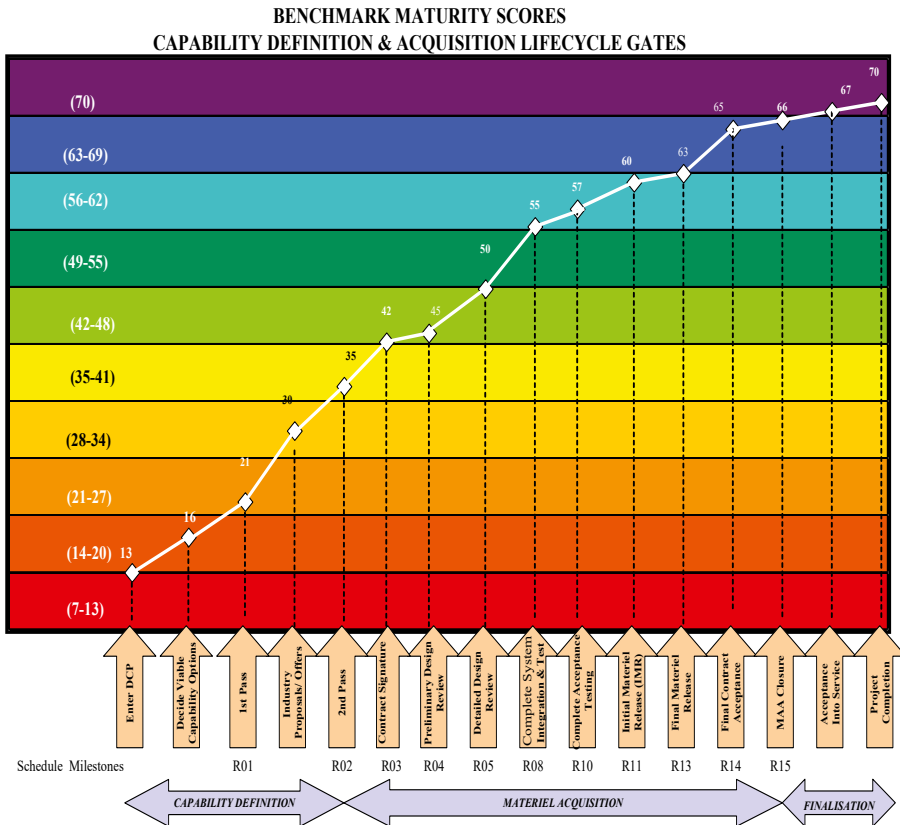
The project maturity score comprises a matrix of seven attributes:

- schedule;
- cost;
- requirement;
- technical understanding;
- technical difficulty;
- commercial; and
- operations and support.

The project manager assesses the level of maturity that a project reaches at a particular milestone for each of these attributes on a scale of 1 to 10. Score assessment is made by selecting the most appropriate description that fits the question under the attributes columns.

Project maturity scores provide a means of communicating in a simple fashion an indicative 'as is' versus a 'should be' condition to inform decision making for each project. The scores are not precise and are not intended to enable exact comparisons across projects. Following is a description of the project maturity score attributes.

Figure A1 - Benchmark maturity scores



Project maturity score matrix						
Attributes	Schedule	Cost	Requirements	Technical understanding	Technical difficulty	Operation and support
Delivery performance						
Maturity Score	How are the IMR & FMR milestones tracking against project approval?	How well is the cost tracking against project approval?	How well are the requirements defined in the MAA being realised?	Defence's understanding of the technical solution and arrangements to operate and support the capability.	How well are the design and its validation coming along?	How well prepared is the project to transition from Acquisition to Sustainment?
10	Achieved	Proven	Demonstrated	Fully understood	Proven	Operational
9	Confident	Contingency remains	Tested	Transferred	Tested	Transitioning
8	Acceptable	Confident	Designed	Arranged	Integrated	Integrated
7	In tolerance	Within contingency	Acceptable	Needs understood	Designed	Being procured
6	Manageable	Negotiated	Contracted	Provided for	Planned	Defined
Process maturity						
Maturity score	How realistic is the schedule?	What is the quality of the project estimate?	How well are the requirements defined and understood?	How well are the solutions understood?	How difficult is to integrate the component parts?	Is the impact on the existing operating and support environment understood?
5	Confirmed	Pre- endorsed capability	Endorsed	Understood	Manageable	Planned
4	Understood	Industry tested	Documented	Feasible	Feasible	Known
3	Feasible	Reasonable	Solution classes	Coalescing	Building blocks	Issues understood
2	Drivers known	Plausible	Scenarios identified	Minimal	Conceptual	Conceivable
1	Speculative	Speculative	Deficiency	Not at all	Not defined	Not identified

Project life cycle gates ¹³⁷	Represents	Benchmark maturity score
Enter Defence Integrated Investment Program	The stage at which a project is recommended to Government for inclusion in the Defence Integrated Investment Program	13
Decide viable capability options	The stage in the capability definition/ development process when 1 st Pass options that will be put to Government are decided by Chief CDG	16
1 st pass approval	The stage at which 1 st Pass options to be put to Cabinet are endorsed by the Defence Integrated Investment Program Committee	21
Industry proposals/ offers	The stage at which formal responses from industry to a request for price or request for tender have been received and evaluated	30
2 nd pass approval	The stage in the capability definition/development process when 2 nd pass approval is sought from Cabinet	35
Contract signature	On completion of contract negotiations and on concluding contract signature of a contract that has maximum influence on the project	42
Preliminary design review(s)	On completion of system requirements reviews and when preliminary design reviews are completed	45
Detailed design review(s)	On completion of detailed design reviews	50
Complete system integration and test	On completion of verification and validation activities at the system and subsystem levels	55
Complete acceptance testing	On completion of all contractual acceptance testing and associated testing activities nominated in the Test and Evaluation Master Plan	57
Initial materiel release	Occurs when the materiel components that represents the CASG contribution to initial operational release are ready for transition to the capability manager	60
Final materiel release	Occurs when all the products and services within the MAA have been transitioned to the capability manager.	63
Final contract acceptance	On final acceptance as defined in the contract.	65
MAA closure	Occurs when all of the actions necessary to finalise the MAA have been completed, including completion of all financial transactions and records, completion of contracts and transfer of remaining fund.	66
Acceptance into service	The point at which the capability manager accepts the materiel system, supplies and services for employment in operational service ¹³⁸	67
Project completion	Project closure is achieved when the project is financially closed, support arrangements have been transitioned and all MAA requirements have been demonstrated and transitioned.	70

¹³⁷ Defence is in the process of replacing this as the Capability Life Cycle implementation progresses. This will still be relevant for the historical data presented in the 2016-17 Major Projects Report.

¹³⁸ Where multiple elements of a mission system are involved (e.g. three surface combatants) this date represents Initial Operational Capability (IOC) of the initial Subset, including its associated operational support, i.e. when the IOC is achieved.

Appendix 5: Capability Life Cycle

The Capability Life Cycle commenced in April 2016 to address First Principles Review Recommendation 2, which called for Defence to “Establish a single end-to-end capability development function within the Department to maximise the efficient, effective and professional delivery of military capability”. The Capability Life Cycle is Defence’s response to this recommendation.

The Capability Life Cycle is an end-to-end delivery model, but has four key stages, as outlined in the Figure below. The projects in this year’s MPR are in the Acquisition stage, but refer to decisions made in the Risk and Requirement Setting stage. Details about the Gates and Passes are listed below.

Figure A2: Capability Life Cycle Model



- **Gate Zero:** is the decision point at which the Investment Committee considers an investment proposal developed by a Capability Manager. It may agree to a proposal to develop a range of options with agreed timeframes, requirements and financial commitments to proceed to a Gate 1 decision, or, agree a single option for accelerated proceed directly to Gate 2.
- **Gate One:** (if required) is the decision point where the Investment Committee considers the progress made since Gate 0. The Investment Committee either clears the proposal for Government consideration, or provides direction to remediate projects.
- **First Pass:** (if required) is the Government decision to select a specific option(s) and proceed with agreed timeframes, technical requirements and financial commitments to Gate 2.
- **Gate Two:** is the stage where the Integrated Project Manager initiates formal engagement with industry, in accordance with the agreed delivery strategy. The Investment Committee considers the updated proposal and either clears the proposal for Government consideration, or provides direction to remediate projects.
- **Second Pass:** is the Government decision to acquire a fully defined and costed capability.
- **Initial Operational Capability:** is the capability state relating to the in-service realisation of the first subset of a capability system that can be

employed operationally. Declaration of initial operating capability is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group(s) that the fundamental inputs to capability have been delivered.

- Final Operational Capability: is the capability state relating to the in-service realisation of the final subset of a capability system that can be employed operationally. Declaration of final operating capability is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group(s) that the fundamental inputs to capability have been delivered.

Appendix 6: Glossary

Acquisition Categories	See Appendix 1.
Additional Estimates	Where amounts appropriated at Budget time are required to change, the Parliament may make adjustments to portfolios through the Additional estimates process.
Australianised Military-off-the-shelf	An adapted military-off-the-shelf product where modifications are made to meet particular ADF operational requirements.
Capability	<p>The power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period.</p> <p>Capability is generated by the Fundamental Inputs to Capability.</p>
Capability manager	A capability manager (CM) has the responsibility to raise, train and sustain capabilities. In relation to the delivery of new capability or enhancements to extant capabilities through the Defence Integrated Investment Plan, CMs are responsible for delivering the agreed capability to Government, through the coordination of the fundamental inputs to capability. Principal CMs are Chief of Navy, Chief of Army, Chief of Air Force, and Chief of Joint Capabilities.
Capital equipment	Substantial end items of equipment such as ships, aircraft, armoured vehicles, weapons, communications systems, electronics systems or other armaments that are additional to, or replacements for, items in the Defence inventory.
Contract change proposal	This is a formal written proposal by the Commonwealth or the contractor, prepared in accordance with the terms and conditions of the contract, to change the contract after the effective date. After agreement by the parties, the contract is amended in accordance with the processes established in the contract.
Corporate governance	The process by which agencies are directed and controlled, and encompasses; authority, accountability, stewardship, leadership, direction and control.

Developmental	A product that is not available off-the-shelf and has to be developed specifically to meet the ADF's particular operational requirements.
Fixed price contract	A fixed price contract is unalterable in all respects for the duration of the contract, except where the parties agree to a contract amendment which alters that contract price.
Foreign Military Sales	The US Department of Defense's Foreign Military Sales program facilitates sales of US arms, Defense services, and military training to foreign governments.
Forward Estimates	The level of proposed expenditure for future years (based on relevant demographic, economic and other future forecasting assumptions). The Government requires forward estimates for the following three financial years to be published in each annual Federal Budget paper.
Function and performance specification	A specification that expresses an operational requirement in function and performance terms. This document forms part of the capability documentation.
Materiel Acquisition Agreement	An agreement between Defence and CASG which states in concise terms what services and products will be delivered, for how much and when.
Memorandum of understanding (MOU)	A memorandum of understanding is a document setting out an agreement, usually between two government agencies.
Minor Capital Acquisition Project	A Defence project in which the proposed equipment falls within the definition of capital equipment but does not meet the criteria in the definition of a major project.
Off-the-shelf	A system or equipment that is available for purchase, which is already established in-service with another military or government body or commercial enterprise and requires only minor, if any, modification to deliver interoperability with existing ADF assets.
Operational concept document	The primary reference for determining fitness-for-purpose of the desired capability to be developed. This document forms part of the Capability Definition Document.

Operational test and evaluation (OT&E)	Test and evaluation conducted under realistic operational conditions with representative users of the system, in the expected operational context, for the purpose of determining its operational effectiveness and suitability to carry out the role and fulfil the requirement that it was intended to satisfy.
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable elements within the ADF.
Portfolio Budget Statement	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence budget appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.
Prime system integrator	The entity that has prime responsibility for delivering the mission and support systems.
<i>Public Governance, Performance and Accountability Act 2013</i>	<i>The Public Governance, Performance and Accountability Act 2013</i> came into effect on 1 July 2014 and superseded the <i>Financial Management and Accountability Act 1997</i> . It is a Commonwealth Act about the governance, performance and accountability of, and the use and management of public resources by, the Commonwealth, Commonwealth entities and Commonwealth companies, and for related purposes.
Test concept document	The basis for the development of the Test and Evaluation Master Plan for a project, and is the highest level document that considers test and evaluation requirements within the capability systems' life-cycle. This document forms part of the Capability Definition Document.
Variable price contracts	Variable price contracts provide for the contractor to be paid a fixed fee for performance of the contract, subject to certain variations detailed in the contract. Variable price contracts may allow for variations in exchange rates, labour and/or material costs.

Part 3. Assurance by the Auditor-General and the Secretary of Defence



Auditor-General for Australia



PRIORITY ASSURANCE REVIEW – SECTION 19A(5) OF THE AUDITOR-GENERAL ACT 1997

INDEPENDENT ASSURANCE REPORT DEPARTMENT OF DEFENCE PROJECT DATA SUMMARY SHEETS

To the President of the Senate

To the Speaker of the House of Representatives

Conclusion

Based on the procedures I have performed and the evidence I have obtained, nothing has come to my attention that causes me to believe that the information in the 26 Project Data Summary Sheets in Part 3 (PDSSs) and the *Statement by the Secretary of Defence*, excluding the forecast information, has not been prepared in all material respects in accordance with the *2018–19 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.

The purpose of the Major Projects Report is to report on the performance of selected major Department of Defence (Defence) equipment acquisition projects (Major Projects), since Second Pass Approval, and associated sustainment activities (where applicable), managed by Defence.

I have undertaken a limited assurance review of the PDSSs, reporting on the status of the projects selected by the Joint Committee of Public Accounts and Audit, and the *Statement by the Secretary of Defence*, for the year-ended 30 June 2019. The following forecast information was excluded from the scope of this engagement:

- (a) Section 1.2 Current Status—Materiel Capability Delivery Performance and Section 4.1 Measures of Materiel Capability Delivery Performance;
- (b) Section 1.3 Project Context—Major Risks and Issues and Section 5 – Major Risks and Issues; and
- (c) forecast dates where included in each PDSS.

The forecast information has not been included in the scope of the engagement, due to the lack of Defence systems from which to provide complete and accurate evidence, in a sufficiently timely manner to facilitate the review. Accordingly, my conclusion does not provide any assurance in relation to this forecast information. However, material inconsistencies identified in relation to the forecast information are required to be considered in forming my conclusion.

Basis for Conclusion

I have undertaken a limited assurance review in accordance with the ANAO Auditing Standards, which include the relevant Standard on Assurance Engagements ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the Auditing and Assurance Standards Board.

I believe that the evidence I have obtained is sufficient and appropriate to provide a basis for my conclusion.

Responsibilities of the Secretary of Defence for the Project Data Summary Sheets

The Secretary of Defence is responsible for the preparation and presentation of the PDSSs for the 26 selected projects, and the *Statement by the Secretary of Defence*, in accordance with the Guidelines. This responsibility includes the design, implementation and maintenance of internal control that the Secretary determines is necessary to enable the preparation of PDSSs that are free from material misstatement, whether due to fraud or error. The Guidelines provide that the PDSSs and supporting evidence, provided to the ANAO for review, are complete and accurate.

Independence and Quality Control

I have complied with the independence and other relevant ethical requirements relating to assurance engagements, and applied Auditing Standard ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, Other Assurance Engagements and Related Services Engagements* in undertaking this assurance review.

Responsibilities of the Auditor-General

My responsibility is to express an independent limited assurance conclusion on the PDSSs and *Statement by the Secretary of Defence*, based on the procedures I have performed and the evidence I have obtained. ASAE 3000 requires that I plan and perform my procedures to obtain limited assurance about whether anything has come to my attention that the PDSSs and the *Statement by the Secretary of Defence* have not, in all material respects, been prepared in accordance with the Guidelines.

In a limited assurance engagement, the assurance practitioner performs procedures, primarily consisting of: making enquiries of managers and others within the entity, as appropriate; the examination of documentation; and the evaluation of the evidence obtained. The procedures selected depend on my judgement, including identifying areas where the risks of material misstatement are likely to arise. The procedures performed are detailed at paragraph 1.7 of **Part 1** of this report.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than those performed for, a reasonable assurance engagement. Consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly I do not express a reasonable assurance opinion on whether the PDSSs and the *Statement by the Secretary of Defence* are prepared in all material respects in accordance with the Guidelines.



Grant Hehir
Auditor-General
Canberra
10 December 2019

Independent Assurance Report

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Statement by the Secretary of Defence

The attached Project Data Summary Sheets (PDSS) for the 26 major projects included in this report have been prepared in accordance with the Guidelines developed by Defence in consultation with the Australian National Audit Office and endorsed by the Joint Committee of Public Accounts and Audit.

Project Status as at 30 June 2019

In my opinion, the Project Data Summary Sheets comply in all material respects with the Guidelines and reflect the status of the projects as at 30 June 2019.

Significant Events Occurring Post 30 June 2019

In stating this opinion that the PDSSs comply in all material respects with the Guidelines, I acknowledge the following material events have occurred post-30 June 2019:

AIR 6000 Phase 2A/2B - Joint Strike Fighter

Aircraft 17 and 18 were delivered in the United States of America during October 2019 and will be ferried to Australia in December 2019.

In July 2019 the United States Government suspended Turkey's involvement in the global F-35 Joint Strike Fighter Partnership in response to Turkey's acquisition of the Russian S-400 Missile Defence System.

AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System

Acceptance of the 3rd Mobile Tactical Operations Centre is expected in December.

As at November 2019, 11 aircraft have been accepted with the remaining aircraft to be delivered early in 2020, on time or ahead of schedule.

AIR 9000 Phases 2, 4, 6 – Multi-Role Helicopter

Testing of the Taipan Gun Mount has been partially conducted with further testing due by end 2019. This is one of the activities under the Projects of Concern remediation plan.

Service release of the Enhance Cargo Hook System and subsequent declaration of Operational Capability Milestone 2 has been delayed until mid-2020.

A Projects of Concern Summit was held on 3 December 2019.

SEA 1180 Phase 1 – Offshore Patrol Vessel

The Whole of Ship Detailed Design Review was completed on 18 November 2019.

AIR 5349 Phase 3 – EA-18 Growler Airborne Electronic Attack Capability

Milestone Release 5 is now expected to be achieved in July 2020 due to delays in the US Navy flight clearance of certain specific EA-18G Growler weapons configurations and delays in the supply of some components of CEA threat emulation systems. Air Force has been informed and sufficient mitigations are in place to minimise impact to capability.

JP 2048 Phase 3 – Amphibious Watercraft Replacement

The successful testing of heavy loads during Sea Series exercises was completed in July 2019.

Final Operational Capability was declared by Chief of Navy on 4 November 2019.

JP 2048 Phase 4A/4B – Amphibious Ships

Final Materiel Release was achieved on 18 October 2019, and Final Operational Capability declared by Chief of Navy on 4 November 2019.

LAND 121 Phase 4 – Protected Mobility Vehicle – Light

Thales Australia advised Defence that it had acquired Steyr Motors, with the sale finalised on 23 August 2019. Thales' procurement of Steyr Motors will ensure the continuity of engine supply and the long-term sustainability of the Hawkei program.

The Production Reliability Acceptance Test continues to inform vehicle reliability, with over 50 per cent of the total test distance completed.

Hawkei Maintainer Training commenced in the fourth quarter 2019 at the Army School of Electrical and Mechanical Engineers. The Integral Computing System Maintainer Training is expected to commence in early 2020.

LAND 121 Phase 4 has taken delivery of the first 138 Hawkei vehicles and trailers required for Initial Materiel Release.

AIR 8000 Phase 2 – Battlefield Airlifter

FMR was not achieved as scheduled in October 2019. Declaration of Final Operational Capability, scheduled for December 2019, is likely to be impacted by the delay to Final Material Release and is under review by the Chief of Air Force.

SEA 1654 Phase 3 – Maritime Operational Support Capability

NUSHIP *Stalwart* was launched on schedule on 30 August 2019.

AIR 5431 Phase 3 – Civil Military Air Management System

Contract Change Proposal 4 was executed in July 19 resulting in a delay to Initial Operational Capability from November 2022 to July 2023.

Final Operational Capability has been delayed from October 2025 to April 2026 due to previously undisclosed impacts associated with Contract Change Proposal 2.

Contract Change Proposal 5 was executed in October 2019 and incorporates the remaining Defence Collaboration initiatives. This has not introduced any Milestone impact.

AIR 7403 Phase 3 – Additional KC-30A Multi-role Tanker Transport

Contract Final Acceptance was achieved in September 2019.

Final Materiel Release was achieved in October 2019.

Final Operational Capability is expected to be achieved in December 2019.

SEA 1442 Phase 4 – Maritime Communications Modernisation

Initial Materiel Release and Initial Operational Capability is now planned to be achieved in quarter 3 of 2020.

SEA 1448 Phase 4B – ANZAC Air Search Radar Replacement

SEA1448 Phase 4B Initial Operational Capability is at high schedule risk primarily due to complexities in completing the United States Identification Friend or Foe (IFF) certification requirements.

LAND 53 Phase 1BR – Night Fighting Equipment Replacement

Material Release 3 was achieved on 21 November 2019.

JP 2008 Phase 5A – Indian Ocean Region UHF SATCOM

The risk of reaching Network Control System acceptance in December 2019 has increased significantly, and the milestone is now expected to be achieved in March 2020. This will delay Final Materiel Release to no later than September 2020. Final Operational Capability remains the same at December 2021.

SEA 1439 Phase 5B2 – Collins Class Communication and Electronic Warfare Improvement Program

SEA 1439 5B2 Initial Materiel Release and Initial Operational Capability claims were delayed due to finalising all applicable objective quality evidence and availability of safety assessment report and hazard safety controls to support an Initial Materiel Release and Initial Operational Capability claim. It is anticipated that Initial Operational Capability will now be achieved in quarter 1 of 2020.



Rebecca Skinner
Acting Secretary
Department of Defence
10 December 2019

Project Data Summary Sheets

Project Data Summary Sheets

New Air Combat Capability	133
Air Warfare Destroyer Build	151
Maritime Patrol and Response Aircraft System	163
Multi-Role Helicopter.....	177
Offshore Patrol Vessel	189
EA-18G Growler Airborne Electronic Attack Capability.....	197
Medium Heavy Capability, Field Vehicles, Modules and Trailers	209
Future Naval Aviation Combat System Helicopter	221
Amphibious Ships (LHD).....	231
Protected Mobility Vehicle – Light	241
Battlefield Airlift – Caribou Replacement.....	253
Maritime Operational Support Capability	263
Civil Military Air Traffic Management System	273
Battlespace Communications Systems 2B	285
Additional KC-30A Multi-role Tanker Transport	297
ANZAC Anti-Ship Missile Defence 2B.....	305
Collins Class Communications and Electronic Warfare Improvement Program	313
Pacific Patrol Boat Replacement	321
Helicopter Aircrew Training System	329
Collins Class Submarine Reliability and Sustainability	337
Night Fighting Equipment Replacement	347
Maritime Communications Modernisation.....	355
Battlespace Communications System 2A	365
ANZAC Air Search Radar Replacement	373
Indian Ocean Region UHF SATCOM.....	381
Amphibious Watercraft Replacement.....	391

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹³⁹

Project Number	AIR 6000 Phase 2A/2B
Project Name	NEW AIR COMBAT CAPABILITY
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Acquisition Type	Developmental
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Nov 06
Government 2nd Pass Approval	Nov 09 (Stage1) Apr 14 (Stage 2)
Budget at 2 nd Pass Approval	\$13,264.1m
Total Approved Budget (Current)	\$16,522.6m
2018-19 Budget	\$1,977.6m
Project Stage	Integration and Test
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The AIR 6000 **Phase 2A/2B** project aims to introduce the F-35A Joint Strike Fighter (JSF) capability that will meet Australia's air combat needs out to 2030 and beyond. Phase 2A/2B of the project is approved to acquire seventy-two Conventional Take Off and Landing (CTOL) F-35A JSF aircraft to establish three operational squadrons, a training squadron and necessary supporting/enabling elements to replace the F/A-18A/B Hornet capability.

Lockheed Martin is contracted to the United States (US) Government for the development and production of the F-35A JSF. The aircraft and associated support systems are being procured through a government to government co-operative agreement with the US and JSF partner nations, comprised of the United Kingdom, Canada, Italy, Denmark, Norway, Netherlands and Turkey. **Outside the partnership**, Japan, Israel, the Republic of Korea **and Belgium are procuring the F-35 JSF via US Foreign Military Sales (FMS).**

1.2 Current Status

Cost PerformanceIn-year

30 June 2019 – The underspend is primarily due to delays in billing against Initial Spares, Training and the Reprogramming Laboratory. This was partially offset by an increase in billing against Aircraft.

Project Financial Assurance Statement

In consideration of risks disclosed at Section 5.1, as at 30 June 2019, Project AIR 6000 Phase 2A/2B has reviewed the approved scope and budget for those elements required to be delivered by the project **In 2018 the project obtained Government approval to move enabling scope to redistribute key project elements between AIR6000 program phases. The approved changes have not increased funding for AIR 6000 PH2A/2B or other associated programs phases.** Defence considers, there is sufficient budget, including contingency, remaining for the project to deliver the revised scope. **The project will continue to address cost risks in the annual update to Government in late 2019.**

Contingency Statement

The project has not applied contingency in the financial year.

¹³⁹ Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report by the Auditor-General* in **Part 3** of this report.

<p>Schedule Performance</p> <ul style="list-style-type: none"> Initial Operating Capability (IOC) remains on track as planned for 2020. <p>The first two aircraft to be permanently based in Australia arrived in Williamtown on 10 December 2018, as planned in the schedule established at 2014 approval. In the 2018/19 financial year Australia accepted delivery of eight aircraft bringing the total fleet to fourteen. This completed the aircraft delivery approved by Government in the Stage 1 project approval of 2009. At 30 June 2019, ten of these aircraft were operating at the Luke Air Force Base Pilot Training Centre in support of pilot training and four were based at Williamtown to conduct the Australian Verification and Validation (V&V) program.</p> <p>Thirteen Australian pilots have been trained to Instructor Qualification standard, via US based training, and a further eight are currently undergoing pilot training. US based academic training of Australian maintainers at Eglin Air Force Base ceased in 2018 because training commenced at the Integrated Training Centre at RAAF Base Williamtown in 2019. On the Job Training of RAAF maintainers is planned to occur at Luke Air Force Base through until December 2020. Transition of training to Australia has commenced. All maintenance training aids have been installed in the Australian Integrated Training Centre and four Full Mission Simulators installed for pilot training.</p> <p>The Australia Canada United Kingdom Reprogramming Lab (ACURL) building at Eglin Air Force Base was accepted on 16 July 2018 and the initial software tools accepted at Fort Worth, Texas in November 2018. This system is currently being installed into the ACURL building. In addition, a contract has been awarded to Lockheed Martin for the commencement of Initial Design Activity for the mature ACURL Phase 2 design solution.</p> <ul style="list-style-type: none"> Facilities construction at RAAF Base Williamtown is largely complete. The land acquisition process has delayed the ability for the full length of the runway extension to be operational. Consequently, a Defence Area has been declared, encompassing the area to maintain project schedule to achieve full operation by October 2020. Regional Warehouse at Williamtown and Forward Operating Bases are in the design phase. Construction work at RAAF Base Tindal is well underway. <p>Sustainment of the global F-35 fleet is provided through the Global Support Solution (GSS), which is still maturing as the global fleet grows. The 2014 US Government assignment of regional Airframe and Engine Maintenance, Repair, Overhaul and Upgrade responsibilities to Australia has assisted in the planning of Australian sustainment. In November 2016 the US Government assigned the regional maintenance and repair of 64 Tier 1 components to four Australian companies and in February 2019, 343 Tier 2 components to seven Australian companies. Sovereign sustainment requirements have been defined and JSF Division is working closely with the F-35 Joint Program Office and industry on the planning and execution of these requirements.</p>
<p>Materiel Capability Delivery Performance</p> <p>The project is confident that the F-35A JSF Air Vehicle will meet Initial Operating Capability (IOC) in 2020. Production is on schedule for the Royal Australian Air Force to accept thirty-three aircraft by December 2020. Williamtown facilities are largely complete and support capabilities required for IOC are maturing. The V&V Program is underway and is established to mitigate remaining risks to IOC, and FOC.</p> <p>Most of the capability requirements of FOC are delivered by the extant integrated F-35 System and new developments are on track for incorporation in production Lots 13-15. AIR 6000 Phase 2A/B will continue to contribute to JSF Program developments to enable Australia to consider capability options and upgrades. AIR 6000 Phase 2A/B has options to deliver Maritime Strike capabilities in a timeframe closely following that of the United States Navy. AIR 6000 Phase 2A/B will also continue to invest in F-35A development where available to pressure advanced Maritime Strike options open for consideration under AIR 3023 in the context of a Joint Maritime Strike strategy.</p>
<p>Note</p> <p>Forecast dates and capability assessments are excluded from the scope of the review.</p>
<p>1.3 Project Context</p>
<p>Background</p> <p>Project AIR 6000 was established in 1999 to replace the air combat capabilities provided by the F/A-18A/B and F-111 fleets. In 2002 Government identified the Lockheed Martin F-35A JSF as the preferred option and joined the System Development and Demonstration (SDD) phase of the JSF Program as one of nine Partner Nations. At this time the project discontinued the competitive evaluation under AIR 6000. The subsequent decision by Government to acquire the F-35A JSF has been taken progressively, including:</p> <ul style="list-style-type: none"> Providing First Pass Approval in November 2006, which included agreement to join the next phase of the JSF Program and funded project AIR 6000 Phase 1B to conduct detailed definition and analysis activities to support Government Second Pass Approval for AIR 6000 Phase 2A/2B. Signing the multilateral Production, Sustainment and Follow-on Development (PSFD) Memorandum of Understanding (MoU) in December 06 to allow entry into the next stage of the JSF Program. AIR 6000 Phase 2A/2B Stage 1 Approval in November 09 to acquire 14 CTOL F-35A JSF aircraft and associated support and enabling elements necessary to establish the initial training capability in the US, commencing in 2014, and to allow commencement of Operational Test in the US and Australia. AIR 6000 Phase 2A/2B Stage 2 was approved by Government in April 14 to acquire an additional 58 CTOL F-35A JSF aircraft and enabling elements. The combined acquisition of 72 aircraft will achieve Final Operating Capability (FOC) in 2023 comprising of three operational squadrons of fifth generation F-35A JSF to replace the F/A-18A/B Hornet aircraft. In 2017 Defence advised Government of emerging issues associated with AIR 6000 Phase 2A/2B affordability. In 2018 Government agreed to Defence proposals to defer key project scope to later AIR 6000 program phases, some of which are yet to be approved. In addition to significantly reducing AIR 6000 Phase 2A/2B known cost risks, this aligned Australian delivery schedules with the global JSF development program. The approved changes have not

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

increased or reduced funding for Phase 2A/B or other associated program phases. As the changes have minimal impact on overall delivery schedule of the project, AIR 6000 Phase 2A/B plans for FOC in 2023 remain unchanged. Some level of known cost risk remains with a possibility that further scope transfers may be required.

Uniqueness

The JSF Program was established by the US Government as the first international collaborative development program for a US military aircraft. The program includes initial design, production, follow-on development and through life support of the JSF global fleet.

The JSF Program is expected to deliver over 3,000 aircraft to the nine MoU Partners (with the US to acquire approximately 75 per cent of the total) with the potential for significant additional aircraft procurements by Foreign Military Sales (FMS) customers.

The JSF is characterised by a low observable (stealth) design, internal weapons and fuel carriage, advanced electro-optical and infrared sensors (long range), the ability to employ a wide range of air-to-surface and air-to-air weapons, advanced communications suite to enable network centric operations, state of the art prognostics and health management, a single interchangeable engine and reduced support requirements.

Due to strict US export restrictions imposed on the JSF Air System, direct commercial sale is not permitted. JSF aircraft and associated supporting systems will be acquired by Australia under the PSFD MoU arrangements. Key factors are:

- The US Government has contracted with Lockheed Martin and Pratt & Whitney on Australia's behalf in accordance with US contracting laws, regulations and procedures.
- The F-35 Joint Program Office (JPO) acquisition strategy is to commence with eleven annual Low Rate Initial Production (LRIP) contracts transitioning from a Fixed Price Incentive Fee to a Firm-Fixed Price at the appropriate time.
- Each contract requires a separate Partner Procurement Request (PPR) from each partner nation defining their requirements for that buy. PPRs are submitted two years ahead of contract and four years ahead of delivery.
- F-35A JSF Aircraft to be delivered under AIR 6000 Phase 2A/2B are acquired under annual contracts. Lots 12 to 14 production contracts procurements leverage off a Block Buy initiative, with Australia's commitment remaining on an annual basis. The Australian F-35A JSF capability will be supported via a F-35 Global Support Solution that is progressively being implemented and a range of Australian sovereign sustainment contracts, with all arrangements planned to be performance-based.

As well as providing capability and programmatic benefits, a key aim of Australia's participation in the JSF Program is to embed Australian industry in the JSF global supply and support chain for the life of the JSF Program. The Commonwealth continues to work with the prime contractor Lockheed Martin, its JSF industry partners and their sub-contractors to achieve long term industry outcomes for Australia.

The Cooperative Partnership will continue to progressively enhance the capability of the entire F-35A Air System over its life of type under the auspices of the Follow On Modernisation program.

Major Risks and Issues

There are no significant issues facing the AIR 6000 Phase 2A/2B Project. The following are risks being managed by the Project.

The F-35 Joint Program is large and complex with varying challenges. As a Partner Nation, Australia actively supports the program to overcome existing and emergent technical challenges; however, these are primarily the responsibility of the US Government to resolve with Lockheed Martin and the Partner Nations.

Major risks being managed by the AIR 6000 Phase 2A/2B Project are:

- The F-35A capability may be impacted by failure to deliver air system elements to meet the capability requirements of Air Force as a result of a technical deficiency or a delay in delivery schedule. F-35A air system elements include aircraft/engine, weapons, Autonomous Logistics Information System (ALIS) system, reprogramming enterprise and the training system.
- The ongoing viability of the F-35A system to meet emerging Government direction and Air Force capability requirements may be impacted by the failure to adequately resource and manage the currently unapproved AIR6000 project phases including additional support elements and follow-on modernisation.
- The Australian F-35 capability relies on a cohesive Joint Strike Fighter Cooperative Program to develop and sustain the F-35 system. Significant changes to the program support organisation may impact Australia's and the F-35 Partners ability to influence the program.
- The Australian F-35A sustainment solution may be impacted by the Joint Program Offices (JPO) ongoing development and evolution to a mature and effective Global Support Solution (GSS), leading to an impact on Australia's GSS performance effectiveness.
- Australia's standing and reputation in the international F-35 Co-operative partnership maybe compromised due to inadequate security and cyber protection leading to potential disclosure of sensitive information to potential adversaries. Stakeholders include Department of Defence, Industry, Supply Chain, USA armed forces and the F-35 enterprise.
- Acquisition and operation of the F-35A capability may be affected by overall funding or programming issues arising from internal cost growth / forecasting accuracy and external budget constraints, leading to an impact on capability and schedule.
- The F-35 Program may not provide the required industry benefit and Australian industrial capability and capacity, targets and goals for resulting contracts will not be realised, or will be delayed. Australian industry may not be able to meet Global Support Solution (GSS) performance, cost or schedule requirements. Australian industry assignment MRO&U activation may impact on the performance outcomes of F-35 GSS Enterprise.
- Failure to effectively employ and manage the maturation of Military, Government employee and supporting Defence Industry workforce may impact the effectiveness and efficiency of the Australian F-35A program.
- The capability requirements for an integrated 5th generation Air Force may be impacted due to delays in delivery or service release of training devices and equipment, workforce provisioning and contractual arrangements resulting in possible delays to capability outcome declarations.

Other Current Related Projects/Phases

AIR JSF SDD – Participation in the JSF System Development and Demonstration (SDD) Program: In November 2018, Australia closed the Materiel Acquisition Agreement for AIR JSF SDD – Participation in the JSF System Development and Demonstration (SDD) Program, as all AIR JSF SDD financial milestones were completed. The US expects to formally complete the F-35 program SDD phase, following Operational Test and Evaluation and a Department of Defense decision to go into full-rate aircraft production.

AIR 6000 Phase 5 - Air Combat Capability Air-to-Air Weapons: This project was approved by Government in March 2016 and will acquire reserve stocks of air-to-air Within-Visual-Range (WVR) and Beyond-Visual-Range (BVR) missiles for the Air Combat Capability including the F-35A Joint Strike Fighter.

AIR 6000 Phase 3 - Air Combat Capability Air-to-Surface Weapons: This project was approved by Government in May 2018 and will acquire the reserve stocks of **air to ground** weapons, **new countermeasures and ammunition** for the F-35 Joint Strike Fighter (JSF).

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance**2.1 Project Budget (out-turned) and Expenditure History**

Date	Description	\$m	Notes
	Project Budget		
Nov 09	Original Approved	2,751.6	
May 12	Real Cost Decrease	(204.4)	1
Sep 12	Real Cost Increase	201.5	1
Jun 14	Government Second Pass Approval – Stage 2	10,515.4	2
	Total at Second Pass Approval	13,264.1	
Apr 18	Real Variation – Transfer	(8.4)	3

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Jul 10	Price Indexation		351.0	4
Jun 19	Exchange Variation		2915.9	
Jun 19	Total Budget		16,522.6	
	Project Expenditure			
Prior to Jul18	Contract Expenditure – US Government – LRIP 10 Production	(777.3)		5
	Contract Expenditure – US Government – LRIP 6 Production	(258.1)		5
	Contract Expenditure – US Government – LRIP 11 – Production	(256.3)		5
	Contract Expenditure – US Government – PSFD MoU (FY14/15 – 22/23)	(193.2)		5
	Contract Expenditure – US Government PSFD MoU (FY 09/10 – 13/14)	(181.0)		5
	Contract Expenditure – US Government – LRIP 10 Propulsion	(131.3)		5
	Contract Expenditure – US Government – Reprogramming Laboratory Phase 1	(91.4)		5
	Contract Expenditure – US Government – LRIP 8 – Production and Non-Annualised Sustainment	(71.7)		5
	Contract Expenditure - US Government (Block Buy Contract Production)	(51.1)		5, 6
	Contract Expenditure – US Government – LRIP 6 Propulsion	(49.6)		5
	Contract Expenditure – US Government – FMS Case AT-D-YAF, AT-P-AMN (Weapons)	(36.8)		5
	Contract Expenditure – US Government - FY 17 Air Vehicle Initial Spare	(22.8)		5
	Contract Expenditure – US Government - LRIP 10 Non-Annualised Sustainment Contract	(20.4)		5
	Contract Expenditure – US Government - LRIP 11 – Propulsion	(16.5)		5
	Contract Expenditure - US Government (Block Buy Contract Propulsion)	(8.9)		5, 6
	Other Contract Payments / Internal Expenses	(503.2)		7
			(2,669.6)	
FY to Jun 19	Contract Expenditure - US Government (Block Buy Contract Production)	(685.4)		5,6
	Contract Expenditure – US Government – LRIP 11 – Production	(569.4)		5
	Contract Expenditure – US Government – LRIP 11 – Propulsion	(102.4)		5

	Contract Expenditure – US Government - LRIP 10 Production	(88.9)	5
	Contract Expenditure – US Government PSFD MoU (FY 14/15 – 22/23)	(86.5)	5
		(52.9)	
	Contract Expenditure - US Government (Block Buy Contract Propulsion)	(52.9)	5
	Contract Expenditure – US Government – LRIP 10 Non-Annualised Sustainment		6
			5
	Contract Expenditure – US Government - FY 17 Air Vehicle Initial Spare	(37.0)	5
	Contract Expenditure – US Government – FMS Cases AT-D-YAF, AT-P-AMN (Weapons)	(25.1)	5
	Contract Expenditure – US Government – LRIP 11 Non-Annualised Sustainment	(19.6)	5
	Contract Expenditure – US Government – Reprogramming Laboratory Phase 1	(19.5)	5
	Contract Expenditure – US Government – LRIP 8 – Production and Non-Annualised Sustainment	(14.9)	5
	Contract Expenditure – US Government - LRIP 10 Propulsion	(5.9)	
			5
	Contract Expenditure – US Government – LRIP 6 Production	(3.3)	5
	Contract Expenditure – US Government – LRIP 6 Propulsion	(0.3)	5
	Other Contract Payments / Internal Expenses	(178.0)	8
		(1,942.0)	
Jun 19	Total Expenditure	(4,611.6)	
Jun 19	Remaining Budget	(11,911.0)	
Notes			
1	A May 12 budget adjustment (\$204.4m) was applied to AIR 6000 Phase 2A/2B based on an incorrect interpretation of the Government's decision to vary the New Air Combat Capability (NACC) Program. In September 12, a budget adjustment correction was applied (\$201.5m), using an updated exchange rate. As a result, the project's total approved budget has remained the same as intended by Government.		
2	Government approved AIR 6000 Phase 2A/2B Stage 2 in April 14 for an additional 58 CTOL F-35A JSF aircraft.		
3	Transfer to Estate and Infrastructure Group following request for funding scope changes for RAAF Base Tindal Joint Strike Fighter facilities.		
4	Up until July 10, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$70.3m. In addition to this amount, the impact on the project budget as a result of out-turning was		

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	a further \$280.8m having been applied to the remaining life of the project.
5	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
6	Previously reported as a single Block buy Contract that combined the expenditure of the Production and Propulsion.
7	Other expenditure for the period prior to July 18 is associated with Support Systems (\$282.0m) which comprises of software capability for the reprogramming lab, facilities, support & test equipment, information communications technology and ALIS; mission systems (\$89.3m) comprising of FMS cases, weapons & aircraft; Project Office services (\$71.2m) comprising of Project Office services (travel, contract support services) & contract administration in relation to the Joint Project Office; NACC Operating Expenditure (\$59.5m) comprising of Project Office expenses, initial support & maintenance, US pilot training and NACC ISP Grants Program; and monitoring (\$1.2m) which includes Diminished Manufacturing Supply (DMS).
8	Other expenditure for the period July 18 to June 19 is associated with Support Systems (\$97.6m) comprising of software capability for the reprogramming lab, facilities, support and test equipment, information communications technology, training simulators, spares and the ALIS; Mission Systems (\$45.1m) comprising of FMS cases, weapons and aircraft; Project Office services (\$20.8m) comprising of Project Office services (travel, contract support services) and contract administration in relation to the Joint Project Office NACC operating expenditure (\$13.1m) comprising of Project Office expenses, initial support and maintenance, US pilot training and the NACC ISP Grants Program; and non-standard mission system (\$1.4m) for the Ferry activities.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
1,821.1	1,933.3	1,977.6	PBS – PAES: This project is being delivered as planned, with the forecast variation primarily attributable to foreign exchange updates. PAES – Final Plan: The acquisition is as now forecast in PBS 2019-20. The variation is largely due to an in-year budget change at BE's Round 2 and an additional re-profiling exercise from FY2019-20 into FY2018-19.
Variance \$m	112.2	44.3	Total Variance (\$m): 156.5
Variance %	6.2	2.3	Total Variance (%): 8.6

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	30 June 2019 – The underspend is primarily due to delays in billing against Initial Spares, Training and the Reprogramming Laboratory. This was partially offset by an increase in billing against Aircraft.
		(35.6)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
1,977.6	1,942.0	(35.6)	Total Variance	
		(1.8)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
US Government PSFD MoU (FY 09/10 – 13/14)	Dec 06	167.1	181.0	Various	MoU	1, 12, 13
US Government PSFD MoU (FY 14/15 – 22/23)	Dec 06	253.1	614.9	Various	MoU	2, 12, 13
US Government (LRIP 6 Production)	May 11	22.0	273.9	Fixed Price Incentive	USG Contract	3, 12, 13
US Government (LRIP 6 Propulsion)	Aug 11	5.8	51.0	Fixed Price Incentive	USG Contract	4, 12, 13
US Government (LRIP 10 Production)	Dec 14	79.2	902.4	Fixed Price Incentive	USG Contract	5, 12, 13
US Government (LRIP 10 Propulsion)	Mar 15	13.4	146.0	Fixed Price Incentive	USG Contract	6, 12, 13
US Government	Mar 15	119.0	138.3	Fixed Price Incentive	USG	7, 12, 13

(Reprogramming Laboratory Phase 1)					Contract	
US Government (LRIP 8 Production and Non-Annualised Sustainment)	Jun 15	99.9	112.3	Fixed Price Incentive	USG Contract	8, 12, 13
US Government (LRIP 11 Production)	Dec 15	88.2	899.2	Fixed Price Incentive	USG Contract	9, 12, 13
US Government (AT-D-YAF)	Jun 16	111.9	110.4	Reimbursement	FMS	12, 13
US Government (LRIP 10 Non-Annualised Sustainment)	Jun 16	31.8	221.5	Various	USG Contract	12, 13, 16
US Government (AT-P-AMN)	Jul 16	132.3	141.4	Reimbursement	FMS	12, 13
US Government (LRIP 11 Propulsion)	Jul 16	14.2	167.0	Fixed Price Incentive	USG Contract	12, 13, 15
US Government (Block Buy Contract Production)	Feb 17	236.3	1,170.7	Various	USG Contract	10, 12, 13
US Government (FY17 Air Vehicle Spares & ACURL Spares)	Mar 17	114.4	109.5	Fixed Price Incentive	USG Contract	11, 12, 13
US Government (Block Buy Contract Propulsion)	Aug 17	39.6	298.2	Various	USG Contract	10, 12, 13
US Government (LRIP 11 Non-Annualised Sustainment)	May 18	57.5	163.8	Various	USG Contract	12, 13, 16
Notes						
1	Contribution to PSFD MoU shared costs based on proportionality principle: i.e. number of aircraft purchased as a percentage of entire partner fleet. Commitment via MoU signature in December 06 with price re-baselined from 2002 to 2012 per US Government update. Covers period from 2009–10 to 2013–14 as approved by Government in November 09 and is now complete. The PSFD MoU 'contract' is a 'variable' priced 'contract' in that it is updated annually to reflect both estimated shared costs and escalation.					
2	Contribution to PSFD MoU shared costs based on proportionality principle: i.e. number of aircraft purchased as a percentage of entire partner fleet. Commitment via MoU signature in December 06 with price re-baselined from 2002 to 2012 per US Government update. Covers period from 2014–15 to 2022–23 as approved by Government in April 14. The PSFD MoU 'contract' is a 'variable' priced 'contract' in that it is updated annually to reflect both estimated shared costs and escalation. Contract Price increase since signature due to increased tooling replacement cost not previously included; inclusion of scope previously considered country unique; and updated estimates for shared sustainment, Follow-on Development and F-35 Joint Program Office administration.					
3	LRIP 6 Production contract for Australia's first two F-35A aircraft including initial Long Lead items, support equipment and other hardware and services. This contract is progressively modified with approved work scope and forms the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'.					
4	LRIP 6 Propulsion contract for two engines for installation on Australia's first two F-35A aircraft. Also includes one spare engine and initial Long Lead items. This contract is progressively modified with approved work scope and forms the basis of the propulsion contract for the complete system – per Section 1.3 'Uniqueness'.					
5	LRIP 10 Production contract for Australia's next tranche of eight F-35A aircraft for initial Long Lead items. This contract is progressively modified with approved work scope and forms the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'.					
6	LRIP 10 Propulsion contract for eight engines for installation on Australia's next tranche of eight F-35A aircraft. This contract is progressively modified with approved work scope and forms the basis of the propulsion contract for the complete system – per Section 1.3 'Uniqueness'. Subsequent to full funding being awarded for this contract further modifications (contract changes) have occurred. These include: (1) Long Lead funding for LOT 12 (15 aircraft), (2) initial sparring for operating units, maintenance depots and the Global Pool and (3) the migration of ALIS propulsion data.					
7	Contract for Phase 1 Reprogramming Laboratory hardware and software tools.					
8	LRIP 8 Production and Non Annualised Sustainment contract for the provision of training devices, support equipment, non-aircraft spares and an aircrew fitting service.					
9	LRIP 11 Production contract for Australia's next tranche of eight F-35A aircraft. This contract includes Long Lead items and is progressively modified, forming the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'. This contract has met Full Funding award with the increase in contract value a result of the staged					

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	procurement and provision of funding for the F-35 production line to build the aircraft.			
10	<p>Lots 12-14 Production and Propulsion are procured under separate Block Buy Contracts, Air Vehicle Production via Lockheed Martin and Propulsion via Pratt & Whitney. Both contracts encompass Long Lead items for the procurement of aircraft under Lots 12-14 and Economic Order Quantities for the production contract only. Both production and propulsion are also contracted under Undefined Contract Action for Lot 12.</p> <p>These contracts were previously combined and reported previously combined and reported as a single Block Buy Contract. Australia will commit to aircraft purchases on an annual basis via these two contracts, subject to annual approvals by Government.</p>			
11	FY17 Air Vehicle Initial Spares & ACURL Spares contract for Australia's Deployable Spares Pack (DSP), Australia's contribution to F-35 global spares pool and spares for the Reprogramming Lab.			
12	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates. This includes adjustments for indexation (where applicable).			
13	The scope of these contracts is explained further below.			
14	The project has reviewed the list of major contracts reported in the PDSS to ensure it reflects only the most significant contracts of the project. This has resulted in some contracts previously reported separately now being reported as part of other contract payments/internal expenses and being removed from the list of major contracts.			
15	LRIP 11 Propulsion contract for eight engines for installation on Australia's tranche of eight F-35A aircraft being procured through the LRIP 11 Production Lot. This contract is progressively modified with approved work scope and forms the basis of the propulsion contract for the complete system – per Section 1.3 'Uniqueness'.			
16	LRIP 10 and 11 Non-Annualised (NA) Sustainment contracts consist of one-time tasks and infrastructure stand up activities. The contracts undergo discrete modifications for each individual good and/or service being procured which in turn dictates the 'type' of contract. The majority of each discrete procurement is acquisition related, examples being initial non-aircraft spares, site activation, depot stand-up, hardware procurement and delivery, training systems, support equipment and ALIS.			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 19		
US Government (PSFD MoU)	N/A	N/A	Australia's contribution to shared costs from 2010 to 2023 based on the purchase of 100 aircraft. Includes contribution to production tooling, US overhead cost of running program, follow on development and shared sustainment activities.	1
US Government (LRIP 6 Production)	2	2	Procurement of the first two Australian F-35A aircraft including Advanced Acquisition items and services and progressive associated work scope.	
US Government (LRIP 6 Propulsion)	3	3	Provision of engines for installation on Australia's first two F-35A aircraft plus one spare engine.	
US Government (LRIP 10 Production)	8	8	Procurement of Advanced Acquisition items associated with the next eight F-35A aircraft procurement.	
US Government (LRIP 10 Propulsion)	8	8	Procurement of Advanced Acquisition items and spares associated with propulsion systems for the next eight F-35A aircraft procurement. This contract has also been modified to include Long Lead items to support Lot 12 aircraft.	
US Government (Reprogramming Laboratory Phase 1)	N/A	N/A	Reprogramming Laboratory Hardware and Software tools.	
US Government (LRIP 8 Production and Non-Annualised Sustainment)	N/A	N/A	Training devices, support equipment and non-aircraft spares.	
US Government (LRIP 11 Production)	8	8	Procurement of Advanced Acquisition items associated with the next eight F-35A aircraft procurement.	
US Government (AT-D-YAF)	N/A	N/A	Procurement of Small Diameter Bombs (SDB 1) and associated racks.	
US Government (AT-P-AMN)	N/A	N/A	Procurement of Radio Frequency Countermeasures.	

US Government (Block Buy Contract Production)	N/A	N/A	Procurement of Long Lead items and Economic Order Quantities for Lots 12-14 and Undefined Contracting Action for Lot 12. Leading to full funding contract award in Quarter 4 2019 for procurement of 45 F-35A aircraft, pending Government approval of Lot 14.	2
US Government FY17 Air Vehicle Initial Spares & ACURL Spares	N/A	N/A	F-35 global spares pool, Deployable Spares Pack and spares for the Reprogramming Lab.	
US Government (Block Buy Contract Propulsion)	N/A	N/A	Procurement of Long Lead items for Lots 12-14 and Undefined Contracting Action for Lot 12. Leading to full funding contract award in Quarter 4 2019 for procurement of 45 F135 propulsion systems, pending Government approval of Lot 14.	2
US Government (LRIP 11 Propulsion)	8	8	Procurement of propulsion systems required for the eight F-35A aircraft being procured through the LRIP 11 Production Lot.	
US Government (LRIP 10 Non-Annualised Sustainment Contract)	N/A	N/A	Procurement of initial non-aircraft spares, site activation, depot stand-up, hardware procurement and delivery, training systems, support equipment and ALIS.	
US Government (LRIP 11 Non-Annualised Sustainment)	N/A	N/A	Procurement of initial non-aircraft spares, site activation, depot stand-up, hardware procurement and delivery, training systems, support equipment and ALIS.	
Major equipment received and quantities to 30 June 19				
Fourteen F-35A aircraft have been received by Australia, of which ten remain in the USA to support training.				
Notes				
1	No equipment delivered as part of this contract.			
2	These contracts were previously reported as Lot 12 Long Lead and EOQ.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	JSF Air System (CTOL Variant)	Mar 03	N/A	Jul 03	4	1
Critical Design	JSF Air System (CTOL Variant)	Apr 04	Feb 06	Feb 06	22	2
Notes						
1	Aircraft weight was the major issue that delayed the closure of the Preliminary Design Review (PDR) by four months.					
2	Additional design effort was required to achieve the weight savings expected after PDR. The CTOL Critical Design Review (CDR) was delayed as a result from April 04 to February 06 until the re-design was complete and included the 'roll up' of many lower-tiered reviews.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/F orecast	Variance (Months)	Notes
System Integration	Block 2B Fleet Release (against IMS7 Baseline)	Jun 15	Jun 15	Jul 15	1	1
	Block 3i Initial Release to support LRIP 6 (against IMS7 Baseline)	Mar 14	Nov 14	Sep 14	6	2
	Block 3F Fleet Release (against IMS7 Baseline) – for F-35A (full envelope with weapons)	Aug 17	Oct 17	Aug 17	0	3, 4, 5

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Acceptance	Accept and deliver two (LRIP 6) aircraft to US Pilot Training Centre	Mar 14	Nov 14	Nov 14	8	6
	Accept and deliver aircraft 3-14	Dec 16	Jun 19	Jun 19	30	7
	Accept and deliver aircraft 15-72	Dec 23	Sep 23	Aug 23	(4)	8
Notes						
1	Block 2B supported the United States Marine Corps IOC declaration which occurred on 31 July 15.					
2	Block 3i Initial Release software provides initial pilot training capability for the LRIP 6 aircraft configuration. The six month variance was due to delays in earlier software deliveries and compounded by integration into the updated computer architecture delivered in LRIP 6 aircraft.					
3	F-35 aircraft software is developed and released in capability blocks. Block 3F software is the final release under the System Development and Demonstration (SDD) phase of the program and is the requirement for Australian IOC declaration. It is noteworthy; all Block 3F software is developed to support full Australian weapons requirements, where Australia's weapons approval is dependent on US and Australian clearances.					
4	Block 3F software was fleet released August/October 17 onto late LRIP 9 US and Partner aircraft. Fleet release dates indicate software has finished development, while the release of partner nation specific loads follows with minor adjustments to meet sovereign requirements. The priority for the release of partner specific loads is driven by a nation's aircraft delivery schedules.					
5	Australia accepted its first three Block 3F aircraft March 18. Acceptance, initially planned February 18 as contracted Bed Down Plan, was delayed to remediate non-software related production issues. All new aircraft are to be accepted in Block 3F (or later) configuration.					
6	The March 14 original delivery date was based on Australian IOC in December 18. The November 14 delivery date reflects a deferral in production to align with the US re-baselining of JSF production, and verification of a new software load for LRIP 6 aircraft to assure an appropriate training capability.					
7	1) The final remaining 12 Stage 1 aircraft were originally scheduled for delivery by December 16 leading to Australian IOC in 2018. In March 10, the JSF Program experienced a Nunn-McCurdy breach of the critical cost growth statutory threshold. Based on subsequent delays to SDD completion and the US aircraft buy profile, the Australian Government initiated a two year deferral in production and IOC, with Aircraft (14) accepted in June 19. This will achieve a revised Australian IOC by December 20.					
8	2) Variance is due to the expected completion of Aircraft 72 production in July 23, resulting in Aircraft 72 early acceptance and ferry to Australia in August 23.					

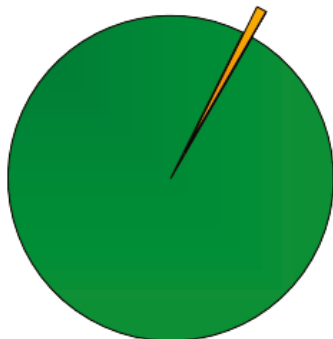
3.3 Progress toward Materiel Release and Operational Capability Milestones

3.3 Progress toward Materiel Release and Operational Capability Milestones				
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Oct - Dec 20	Dec 20	(0)	
Initial Operational Capability (IOC)	Dec 20	Dec 20	(0)	
Final Materiel Release (FMR)	Oct - Dec 23	Sep 23	(3)	1
Final Operational Capability (FOC)	Dec 23	Oct 23	(2)	2
Notes				
1	FMR date currently forecast as 3 months early. The driving activity for this date is the arrival of the last tranche of Australian aircraft from the US.			
2	FOC date currently forecast for 2 months early. Extra month is administrative time allowance for Air Force to declare FOC post FMR.			
Schedule Status at 30 June 2019				
<p>The chart displays two horizontal bars representing project schedules from June 2013 to June 2024. The top bar, 'Schedule Plan at Government Approval', shows a long grey 'Approval' period from Jun-13 to Jun-20, followed by IMR (blue) from Jun-20 to Jun-21, IOC (green) from Jun-21 to Jun-22, FMR (orange) from Jun-22 to Jun-23, and FOC (red) from Jun-23 to Jun-24. The bottom bar, 'Schedule Plan at 30 June 2019', shows a similar approval period from Jun-13 to Jun-20, but with IMR (blue) from Jun-20 to Jun-21, IOC (green) from Jun-21 to Jun-22, FMR (orange) from Jun-22 to Jun-23, and FOC (red) from Jun-23 to Jun-24. The 2019 plan shows earlier completion for IMR, IOC, and FMR compared to the approval plan.</p>				
Note				
Forecast dates in Section 3 are excluded from the scope of the review.				

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Delivery Capability Performance



Green:

The Project expects to meet the majority of capability requirements as expressed in the Materiel Acquisition Agreement and supporting suite of Capability Definition Documentation, with delivery in accordance with requirements of the relevant Technical Regulatory Authorities.

Amber:

AIR 6000 Phase 2A/B has options to deliver Maritime Strike capabilities in a timeframe closely following that of the United States Navy. Phase 2A/B will also continue to invest in F-35A development where available to pressure advanced Maritime Strike options open for consideration under AIR 3023 in the context of a Joint Maritime Strike strategy.

Red:

Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Acceptance and delivery of 33 aircraft to RAAF Base Williamtown between 2018 and 2020 to support Australian V&V and stand-up of No.3 Squadron (SQN) and No.2 Operational Conversion Unit (2OCU); 3SQN facilities fully fitted, accredited, staffed and ready to support flying operations. Materiel delivery, V&V, training, support and transition activities required for IOC completed. IMR is expected to be achieved October to December 20.	Not yet achieved
Initial Operational Capability	The JSF system shall, be capable of performing and sustaining one squadron capable of Defensive Counter Air (DCA), and Offensive Counter Air (OCA) roles (though not concurrently) for a 30 day period. The JSF system shall be deployable to Forward Operating Bases within Australia and Overseas. Aircraft are available to support the start of pilot training in Australia. Initial Operational Capability is expected to be achieved in December 2020.	Not yet achieved
Final Materiel Release (FMR)	Delivery of final aircraft between 2021 and 2023, resulting in all 72 F-35A aircraft in Australia. All aircraft will be upgraded in accordance with the Continuous Capability Development and delivery (C2D2) plan (noting that this is an ongoing program of capability enhancement). Delivery and acceptance, commissioning or contracting in Australia of the aircraft, spares, support systems, and personnel, training, weapons, equipment, contracts and facilities necessary for ongoing operations of three Operational Squadrons and one training Squadron at FOC. Materiel delivery, V&V, training, support and transition activities required for FOC completion. FMR is expected to be achieved September 2023.	Not yet achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Final Operational Capability	The JSF system shall, be capable of performing and sustaining three operational squadrons and one training squadron; as per strategic and capability guidance. FOC is expected to be achieved in December 2023.	Not yet achieved
------------------------------	---	------------------

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)		
Description	Remedial Action	
There is a chance that the sustainable and airworthy system will be affected by elements of Fundamental Input to Capability (FIC) not in place, leading to an impact on the integration of F-35A enterprise systems and existing Australian Defence Force (ADF) systems.	JSF Division is to lead the proactive coordination between all organisations responsible for certifying, operating with, integrating and sustaining the F-35A Air System to exploit the full 5th generation capabilities across the ADF FIC. This risk is now being managed within the Air System Delivery emergent risk.	
3) There is a chance that because the Autonomous Logistics Information System (ALIS) is so fundamental to F-35A capability it is by nature a critical vulnerability that will require ongoing development and cyber protection.	Ongoing engagement is required between JSF Information Systems staff, the Joint Program Office (JPO) and key stakeholders to ensure Information Communication Technology (ICT) systems development and integration are synchronised with the broader JSF program, including facilities. This engagement needs to include design influence and sharing of system data to support the protection of Australian networks and to meet the National systems and accreditation requirements. This risk is now being managed within the Air System Delivery emergent risk.	
There is a chance that F-35A capabilities originally anticipated to be available will be late to Australian need resulting in a delay to, or redefinition of, capability milestones and that elements of the Fundamental Inputs to Capability (FIC) will not be in place to create a battleworthy system due to a failure to integrate F-35A enterprise systems and existing Australian Defence Force (ADF) systems.	Joint Strike Fighter Division; in consultation with the Capability Manager is to lead ADF stakeholders engagement to identify the minimum essential F-35A capabilities and their need date, ensuring their incorporation into the Joint Program Office (JPO) led Continuous Capability Development and Delivery (C2D2) development roadmap. Capability gaps resulting from late delivery of essential F-35A capabilities, thereby impacting battleworthiness, are to be addressed through coordinated efforts across extant ADF capabilities and systems. Furthermore AIR 6000 Phase 2A/B has options to deliver Maritime Strike capabilities in a timeframe closely following that of the United States Navy, and will also continue to invest in F-35A development where available to pressure advanced Maritime Strike options open for consideration under AIR 3023 in the context of a Joint Maritime Strike strategy. This risk is now being managed within the Air System Delivery emergent risk.	
The Australian F-35A sustainment solution may be impacted by the Joint Program Offices' (JPO) ongoing development and evolution to a mature and effective Global Support Solution (GSS), leading to an impact on Australia's GSS performance effectiveness.	JSF Division will continue to engage the JPO and participate in GSS forums to ensure knowledge on programmatic issues is captured and understood. Advice to JSF DIV Senior Executives will continue to be provided, allowing them to effectively influence F-35 Enterprise decisions, where required. Australia will continue to source updates and attend forums that provide an avenue to provide consolidated national comments and feed these into future plans. JSF Division will continue to support the Joint Executive Steering Board and Autonomic Logistics Advisory Council oversight of the maturing of the GSS and will maintain close liaison with Air Combat Transition Office and Air Combat Support Program Office to monitor lower performance rates that may result in spares shortages and develop mitigation strategies as needed.	

There is a chance that the F-35 reprogramming enterprise will be affected by the timeliness and scope leading to an impact on capability delivery.	Improve understanding of technical and programmatic issues via Australian participation in initial development of the Joint Reprogramming Laboratory solution with the UK. Australia is co-chair of a steering group to manage reprogramming development; mitigation plans are being developed with steering group oversight. This participation has improved our understanding of technical and programmatic issues. While Reprogramming Phase 1 is an interim and limited capability, Reprogramming Phase 2 requirements are being developed to meet full capability needs at Final Operating Capability , including the need to support multiple aircraft configurations (Follow On Modernisation.) This risk is now being managed within the Air System Delivery emergent risk.
4) Acquisition and operation of the F-35A capability may be affected by overall funding or programming issues arising from internal cost growth / forecasting accuracy and external budget constraints, leading to an impact on capability and schedule.	JSF Division will conduct on-going engagement with the F-35 Joint Program Office and major project suppliers to facilitate improved cost data to allow the F-35 project to meet budgeting and programming expectations along with proactive management of cost risk identification and engagement with the Capability Manager to prioritise requirements to deliver project capability within the approved project budget. Acquisition and cost models will be refined with benchmarking against United States and Australian costs. Options maybe developed for Capability Manager consideration to achieve project affordability by aligning project expenditure with the Defence Integrated Investment Program capacity in any specific year.
The F-35 Program may not provide the required Australian industry benefit and industrial capability and capacity and targets for resulting contracts maybe delayed or not realised.	JSF Division will conduct coordinated activities with Defence Industry Division and maintain the close working relationship with Centre for Defence Industry Capability Defence Industry Innovation Centre, utilisation of the New Air Combat Capability program that provides financial support for industry capacity and capability growth, and JSF Division advocacy on behalf of Australian Industry with Joint Program Office, United States Prime Contractors and Original Equipment Manufacturers.
Failure to effectively employ and manage the maturation of Military, Government employee and supporting Defence Industry workforce may impact the effectiveness and efficiency of the Australian F-35A program.	The Australian F-35A program is evolving with dynamic personnel resource requirements; requiring various skills and experiences. The integrated workforce requirements are monitored and adjusted to meet the evolving project needs. The Workforce Reviews engage Defence, the Australian Public Service Workforce Planning Agencies and Industry; thereby assuring appropriate workforce coverage to meet the evolving program needs.
The capability requirements for an integrated 5th generation Air Force may be impacted due to delays in delivery or service release of training devices and equipment, workforce provisioning and contractual arrangements resulting in possible delays to capability outcome declarations.	The JSF Training System is evolving and work continues with the key stakeholders on understanding the capabilities and aligning expectations. Additional personnel have been engaged to deliver the Australian Training System and the associated support contracts. Influential representation by Defence at critical and essential Joint Program Office meetings and Periodic Technical Interchange Meetings with Lockheed Martin will burn-down the risk through persistent and consistent education.
Emergent Risks (risk not previously identified but has emerged during 2018-2019)	
Description	Remedial Action
The ongoing viability of the F-35A system to meet emerging Government direction and Air Force capability requirements may be impacted by the failure to adequately resource and manage the currently unapproved AIR6000 project phases including additional support elements and follow-on modernisation.	JSF Division has established the Future Phases Directorate using internal resources. The Future Phases Directorate will work with the Capability Manager's representative to prepare documentation seeking Government approval. The Futures Phases Directorate will conduct detailed engagement with Air Force Headquarters and other Air Force entities to define Scope by Phase and then provide Capability Development Documentation efforts to support Government decision of each phase.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

The Australian F-35 capability relies on a cohesive Joint Strike Fighter Cooperative Program to develop and sustain the F-35 system. Significant changes to the program support organisation may impact Australia's and the F-35 Partners ability to influence the program.	Defence will maintain cohesive working relationships with enterprise stakeholders, maintain Government to Government engagement in the program, and continue to engage in multilateral and bilateral discussions with F-35 partners, continue representation in at strategic fora and where appropriate take the lead on influencing the F-35 Partners with the Joint Program Office and a future F-35 sustainment organisation.
The F-35A capability may be impacted by failure to deliver air system elements to meet the capability requirements of Air Force as a result of a technical deficiency or a delay in delivery schedule. F-35A air system elements include aircraft/engine, weapons, the Autonomous Logistics Information System, the Reprogramming Enterprise and the training system.	JSF Division has established a risk management framework to ensure that any risks to establishing a credible air combat capability are identified and resources can be allocated to mitigate these risks to ensure these do not impact the System which is being delivered. The air system elements are monitored and controlled within the integrated master schedule and the Project Performance Review process. The inclusion of Cooperative Partner Personnel positions within the Joint Program Office will give Australia early insight into emergent potential issues. The Capability Manager is a key informed stakeholder in this process which will ensure the systems being delivered will meet Air Forces evolving capability needs.
Australia's standing and reputation in the international F-35 Co-operative partnership maybe compromised due to inadequate security and cyber protection leading to potential disclosure of sensitive information to potential adversaries. Stakeholders include Department of Defence, Industry, Supply Chain, USA armed forces and the F-35 enterprise.	JSF Division will continue to train, practice and promote efficient application of security policy, practices and procedures across the physical, information and personnel security domains and ensure that effective and appropriate mitigations are deployed to address any identified issues. Robust security compliance assurance control activities are continually conducted within Defence and our broader industry partners. In addition to the promotion and enforcement of the Defence Industry Security Program, engagement continues with Defence and Government cyber security agencies to develop an Information and Communications Technology Protection Program which would assist our industry partners.

5.2 Major Project Issues

Description	Remedial Action
The Maintenance Weapon Loading Small Group Try Outs were delayed as a result of schedule slip of the Weapons Load Trainer installation.	This issue was retired as the overall impact was limited due to Joint Program Office provision of Memorandum for Record alternate training procedure resulting in maintenance training being successfully commenced. Small Group Try Outs were executed with minimal schedule slippage.
The design of the F-35A ejection system has been identified as having a greater risk exposure compared to legacy ejection systems.	The risk reduction modification for incorporation has now been released and modifications are occurring throughout the fleet. Full fleet modification has now been achieved on Australian aircraft. There is some residual risk as Australian pilots continue to train in partner aircraft that are scheduled to be modified. This risk is now managed as part of the 'F35-A System Capability' risk in Section 5.1.
The proposed Continuous Capability Development & Delivery (C2D2) framework increases Australia's contribution to total development costs, including infrastructure costs). Revised embodiment (forward fit / retrofit) cost estimates have not been disclosed as yet. This has produced an additional cost pressure on the AIR 6000 Ph2A/2B budget.	This issue has been mitigated through identification of options to deliver required capability, with lower cost pressures on project budget. The issue is being cost-planned and managed within the new Future Phases directorate as part of the 'F-35A Future Evolution' risk in Section 5.1.
Verification & Validation events and Initial Operating Capability have been affected by the delay to software upgrades to the Full Mission Simulator.	Extensive engagement with the Joint Program Office, Lockheed Martin and their stakeholders was conducted; combined with consistent communication with Air Force to manage expectations, obtain guidance and assess impacts. This issue was retired and is continued to be managed as part of 'Aircrew Training Devices' risk Section 5.1.
The timeframe for the Follow On Modernisation upgrades have not delivered an F-35A capability that satisfies Air Force's Final Operating Capability requirements or timeframe.	JSF Division is working with Air Force to determine a variety of alternative options to deliver the Final Operating Capability requirements. The issue is being cost-planned and managed as in the new Future Phases directorate as part of the 'F-35A Future Evolution' risk in Section 5.1.

The delivery schedule for the Beyond Line of Sight (BLOS) communications capability does not satisfy Air Force's Final Operating Capability requirements or timeframe.	JSF Division is working with Air Force to determine an alternative option to deliver the required Final Operating Capability. The BLOS capability has been deferred to a future phase of the project where it will be delivered as a common capability candidate.
Delivery of the F-35A Enterprise Architecture Management has been affected by the level of support available by for the primary software application.	JSF Division prioritised engagement and resolution of this issue with Directorate Technical Regulatory Architecture Group and Commonwealth Information Officer Group. F-35A Enterprise Architecture workflow was adjusted to limit any significant impact to schedule or delivery of capability milestones and the issue was retired with these controls in place.
Delayed provision of Interim Contractor Support Training Workforce has affected capability milestone delivery.	JSF Division continues to work with Lockheed Martin and the Joint Program Office to establish training system support services. Interim support is being established through existing contracts and Air Combat Office Support Office are arranging follow-on contracts to meet full capability needs limiting the impact to capability delivery. This issue is being managed as part of the 'F-35A Training System' risk in Section 5.1.
The F-35 future sustainment affordability has been affected by an increase in through-life sustainment cost estimates.	The Sustainment Affordability sub project Stage 1 and Stage 2 to alleviate ambiguity and provide controls. Stage 1 delivers a Single Cost Model for future sustainment cost estimates, validated against current planned functional outcomes. The sustainment affordability activity aims to reduce the consequences of this issue by resourcing the activity with sufficient staff to ensure a new and accurate baseline is established with a model that can provide timely advice to the executive using analysed and defensible source information. Stage 2 will address efficiency considerations such as the Joint Program Office (JPO) Joint Affordability Model (JAM) as well as confidence assessments through broad scope heuristics. This issue is being closely managed within Affordability and Budget Reprogramming risk in Section 5.1.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Integration and Testing	Project Status	8	7	7	7	8	8	7	52
	Explanation	<ul style="list-style-type: none"> Requirement: The final SDD Block 3 capability was delivered in early 2018, however elements of the support system remain to be fully proven and the additional capabilities continue to be developed. Technical Understanding: The JSF Air System is an extremely complex weapon system that will drive significant change in how Australia supports and conducts air combat operations. The initial air vehicle design is mature with Critical Design Review completed in 2006 and the final SDD Block 3 capability delivered in early 2018. However elements of the support system remain to be fully proven and the additional capabilities are in development. The risks and issues experienced to date are not unexpected in a development program of this complexity. Operations and Support: The Global Support Solution continues to be developed by the Joint Strike Fighter Program Office, with significant oversight from the JSF Executive Steering Board. Australia is progressively developing its own sovereign plans for operating and supporting the F-35A capability. This includes ongoing cost modelling and analysis to better understand operating and support costs through the life of type of the Australian F35A. 							

Project Stage	2017-18 MPR Status (Dashed)	2018-19 MPR Status (Dotted)
Enter DCP	13	
Decide Viable Capability Options	16	
1st Pass Approval	21	
Industry Proposals / Offers	30	
2nd Pass Approval	35	
Contract Signature	42	
Preliminary Design Review(s)	45	
Detailed Design Review(s)	50	
Complete Sys. Integ. & Test		53
Complete Acceptance Testing		57
Initial Material Release (IMR)		60
Final Material Release (FMR)		63
Final Contract Acceptance		65
MAA Closure		66
Acceptance Into Service		67
Project Completion		70

2017-18 MPR Status - - - - - 2018-19 MPR Status

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
JSF is a complex program that requires a robust Program Management framework to be established early in the life of the program lifecycle.	Governance
JSF is a collaborative program that requires active engagement to ensure national requirements are met.	Requirements Management
JSF Production, Sustainment and Follow-on Development Memorandum of Understanding is run by the Joint Program Office and it is difficult to predict cost, schedule and associated budgeting impact on ADF processes and procurement.	Governance
Integration of JSF into ADF systems of systems has been underestimated.	Requirements Management
The collaborative environment of the JSF program introduces additional stakeholder complexity due to the engagement of the nine partner nations.	Governance
Allowing industry to come up with innovative solutions, without the Commonwealth being too prescriptive in requirements definition, can provide improved outcomes. Through the Turbine Engine Maintenance Facility negotiations TAE came up with a proposal to renovate a disused Masters hardware facility rather than building a new facility on a green field site. This resulted in significant schedule reduction.	Requirements Management
The disadvantages of conducting staged facility handover / takeover (HOTO) activities outweigh the advantages. Traditional HOTO activities should be conducted.	Requirements Management
Having a dedicated ICT SME team (CIOG) embedded within the Project Office was a significant contributor to reducing ICT risks.	Requirements Management
The ongoing sustainment costs of ICT intensive projects is expensive - hardware refresh, software licensing, upgrades, personnel (administrators) - and cannot be underestimated.	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	AVM Leigh Gordon
Branch Head	AIRCDRE Damien Keddie
Project Director	GPCAPT Guy Adams
Project Director	WGCDR Steve Unwin (Acting)
Project Director	GPCAPT Rodney Srinivasan

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁴⁰

Project Number	SEA 4000 Phase 3
Project Name	AIR WARFARE DESTROYER
First Year Reported in the MPR	2008-09
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	May 05
Government 2nd Pass Approval	Jun 07
Budget at 2 nd Pass Approval	\$7,207.4m
Total Approved Budget (Current)	\$9,103.7m
2018-19 Budget	\$226.6m
Project Stage	Initial Materiel Release
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

This project will acquire three Hobart Class Air Warfare Destroyers (AWD) and their support system for the Australian Defence Force (ADF). The capability provided by the AWDs will form a critical element of the ADF's joint air warfare defence capability and will contribute to a number of other joint warfare outcomes.

1.2 Current Status

Cost Performance

In-year

The AWD SEA 4000 Phase 3 Program was underspent by \$27.7 against the approved budget in FY 2018-19.

The underspend variation is due to the Defence Finance Group deferring June 2019 payments of the AWD invoices and paying them in July 2019.

The unpaid invoices in FY 2018/19 predominantly relate to the Alliance Based Target Incentive Agreement contract along with some minor Program Management Office costs.

Project Financial Assurance Statement

Notwithstanding the issues disclosed at Section 5.2, as at 30 June 2019, SEA 4000 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the program. Having reviewed the current financial and contractual obligations of the program, current known risks and estimated future expenditure, Defence considers, as at the reporting date, and following the completion of the AWD Reform strategy in December 2015, which included a Real Cost Increase of \$1.2 billion to the AWD budget, being approved in July 2015 and provided in September 2015, there is sufficient budget remaining for the Project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

On 6 September 2012, following a stakeholder review of resource considerations and support for a schedule extension, the then Minister for Defence announced that the AWD schedule had been re-baselined. The revised AWD delivery dates were:

- HMAS *Hobart* (Ship 1) – March 2016;
- HMAS *Brisbane* (Ship 2) – September 2017; and
- HMAS *Sydney* (Ship 3) – March 2019.

These delivery dates represented delays of 15, 18 and 21 months respectively against the dates contracted in October 2007.

Following further concerns with AWD delivery, the delivery schedule has been further re-baselined as part of the AWD Reform.

140 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

The post-Reform contracted delivery dates **were**

- HMAS *Hobart* (Ship 1) – June 2017;
- HMAS *Brisbane* (Ship 2) – July 2018; and
- HMAS *Sydney* (Ship 3) – December 2019.

These delivery dates represent delays of 30, 28 and 30 months respectively against the dates contracted in October 2007.

The AWD Alliance was contracted to undertake the AIR 9000 Aviation Upgrade Program for Ship 3 NUSHIP *Sydney* while in Adelaide. The increase in scope has moved the date for Provisional Acceptance to February 2020. This represents a delay of 32 months against the contracted dates in October 2007. This represents a delay of 32 months against the contracted dates in October 2007.

Since July 2018 the following major events have occurred:

- **July 2018 – Ship 2 achieved Provisional Acceptance**
- **September 2018 – Ship 3 commenced Combat System Light Off**
- **October 2018 – Chief of Navy declares Operational Release for NUSHIP *Brisbane***
- **October 2018 – HMAS *Brisbane* commissioned for Service with the Royal Australian Navy**
- **November 2018 – HMAS *Hobart* successfully completes Combat System Sea Qualification Trials in the USA**
- **December 2018 – Chief of Navy declares Initial Operating Capability for HMAS *Hobart***

Due to the AIR 9000 Aviation Upgrade Program in NUSHIP *Sydney*, Final Materiel Release (FMR) for Ship 3 is now estimated to be March 2020.

Materiel Capability Delivery Performance

All significant government specified capability, with the exception of Radar-Electronic Attack, (R-EA) is currently planned to be achieved and in some warfare areas, the capability will be exceeded. Procurement of the R-EA sub-system has been deferred as currently available technology does not represent a cost-capability benefit. The R-EA budget has been preserved to support a more capable system being installed in the AWD when available.

The Capability Manager has agreed to use part of the quarantined funds to accelerate technical feasibility and early development of an indigenous Electronic Attack system by another Program for potential use in the Hobart Class and other Navy vessels.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

In May 2005 the Government granted first pass approval to the Program, allowing commencement of Phase 2, the Design phase. Phase 2 oversaw the development of two platform designs:

- The 'Existing' design based upon a modified version of the Navantia designed and built F-100 warship as the Australianised military off-the-shelf option; and
- The 'Evolved' design produced by Gibbs & Cox developed from an in-house design utilising design features of the US Navy class of Aegis Guided Missile Destroyers.

In May 2005, the Government selected ASC AWD Shipbuilder Pty Ltd as the shipbuilder for the AWD Program and determined that the ships should be built in Adelaide. Raytheon Australia Pty Ltd was chosen as the Combat System Systems Engineer.

In October 2005, Defence sought and received Government approval to acquire three Aegis Weapon Systems to provide the core air warfare capability of the AWD. The Commonwealth subsequently entered into a United States (US) Foreign Military Sales (FMS) agreement for the acquisition of the Aegis weapons system and associated engineering services and integrated logistic support.

In June 2007, at Second Pass, the Government granted approval to commence construction of the Hobart Class AWD utilising the existing design. This decision initiated the current phase of Project SEA 4000 Phase 3, the construction phase.

Phase 3 includes detailed design, procurement, ship construction, and set to work of the Aegis Combat System and the F-100 based Platform Systems. This culminates in the delivery of three Hobart Class AWDs together with the ships support systems including initial spares and ammunition outfits, and initial crew training.

Phase 3 concludes with the delivery to the Royal Australian Navy (RAN) of the third AWD, HMAS *Sydney*.

At Second Pass, the Government approved Defence's proposal to close SEA 4000 Program Phase 2, Design, and Phase 3.1, Aegis acquisition activities, and combine the remaining Phase 2 and Phase 3.1 scope and funding with SEA 4000 Program Phase 3.

The Government announced the implementation of an AWD Reform Strategy on 4 June 2014 following an Independent Review of the AWD Program and heightened concern regarding program schedule and forecast cost increases. These concerns resulted in the Program being designated a Project of Concern in June 2014.

As part of the Reform strategy, the Commonwealth entered into agreements with both BAE Systems and Navantia to participate in the Reform Interim Phase from December 2014 until 31 July 2015.

On 22 May 2015, the Minister for Finance and the then Minister for Defence jointly released a media statement suggesting that the project will require an additional \$1.2 billion. This funding was approved in July 2015 at the expense of other Defence acquisitions.

A limited tender process was initiated on 29 May 2015 seeking proposals to either insert a managing contractor into ASC AWD Shipbuilder Pty Ltd for the remainder of the AWD build, or to further enhance ASC capability through a partnering agreement.

After completion of the Reform Interim Phase the Departments of Finance and Defence conducted a Limited Tender for Shipbuilding

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

<p>Management Services (SMS) and jointly agreed that Navantia was the preferred company to provide an experienced shipbuilding management team for insertion into ASC AWD Shipbuilder Pty Ltd.</p> <p>The Departments of Finance and Defence worked together to implement Long-Term Arrangements (LTAs) (in the form of Shipbuilding Management Services) aimed at ensuring the successful completion of the AWD Program with greater efficiency and effectiveness and consistent with international productivity levels.</p> <p>The SMS contract was signed on 5 December 2015 and is a subcontract under ASC AWD Shipbuilder Pty Ltd.</p> <p>Concurrently with the AWD build program, the AWD Transition Support Period (TSP) arrangements strategy is underway. Contract signature was achieved in December 2016 and the TSP Managing Contractor is working onsite with the Commonwealth sustainment office.</p> <p>Ship 1 was Provisionally Accepted by the Department of Defence on 16 June 2017 and Initial Materiel Release was achieved on 18 September 2017. HMAS Hobart was commissioned on 23 September 2017. After successful Combat System Ship Qualification Trials conducted in the US, Chief of Navy declared Initial Operation Capability for HMAS Hobart on 14 December 2018.</p> <p>Minister for Defence and Minister for Defence Industry announced the removal of SEA 4000 Phase 3 from the Projects of Concern list on 1 February 2018.</p> <p>Ship 2 was Provisionally Accepted by the Department of Defence on 27 July 2018. Initial Operational Release 2 was achieved on 11 October 2018. HMAS Brisbane was commissioned into the Royal Australian Navy on 27 October 2018.</p>
<p>Uniqueness</p> <p>The SEA 4000 Air Warfare Destroyer Program is currently one of Australia's largest and most technically complex Defence projects. The AWDs have been designated by the RAN as Hobart Class Guided Missile Destroyers (DDGs) and will be the RAN's first Aegis capable ships.</p> <p>The AWDs are being delivered through an Alliance based contract arrangement involving ASC AWD Shipbuilder, Raytheon Australia, and the Commonwealth, represented by Defence.</p>
<p>Contractual Framework</p> <p>The Alliance based contract arrangement was signed in October 2007. Key features of the AWD Alliance and the operations of the Alliance based contract arrangement include:</p> <ul style="list-style-type: none"> • The Alliance Industry Participants (Raytheon Australia and ASC AWD Shipbuilder) are jointly and severally responsible for the delivery of the three ships and their support system. Each party remains individually responsible for compliance with all statutory requirements. • The Alliance is neither a legal body, nor a joint venture. • The legal and commercial basis for the Alliance is established through the Alliance Based Target Incentive Agreement (ABTIA) contract signed by all three participants. This establishes a virtual organisation under the governance of the AWD Alliance Board. <p>The Commonwealth entered into a Platform System Design contract with Navantia, the ship designer, in October 2007. This contract is managed by the AWD Alliance under the Alliance based contract arrangement.</p> <p>The Aegis combat system is being procured by the Commonwealth under the FMS agreement with the US Navy. This agreement is also managed within the AWD Alliance project team.</p> <p>While Navantia and the US Navy (and its equipment supplier, Lockheed Martin) are not part of the Alliance, they work closely with the Alliance and are treated in an alliance like manner.</p>
<p>Major Risks and Issues</p> <p>The major challenges the project faces are:</p> <ul style="list-style-type: none"> • Completing the integration of the sonar system into the Hobart Class Combat System; • Managing non-conformances and regulatory compliance to ensure acceptance of the capability; • Providing support to DDG SPO and Maritime Services Division in maintaining the Hobart Class; • Potential costs of remediating issues discovered during Combat System Ship Qualification Trials for Ships 2 and 3; • Supporting the shipbuilding workforce as it transitions to ASC Shipbuilding; and • Ensuring knowledge and skills are retained as AWD Program Management Office transitions to Naval Construction Branch.
<p>Other Current Related Projects/Phases</p> <p>SEA 4000 Phase 3.2 – Standard Missile SM-2 Missile conversion and upgrade. The conversion of the missiles will allow them to be used in the AWDs and provide an enhanced anti-aircraft and anti-ship missile defence capability. This project is managed by Joint Systems Division within Defence.</p> <p>SEA 4000 Phase 3.3 – This project is to deliver a tailored 20 week United States Navy (USN) Combat System Sea Qualification Trials (CSSQT) activity for each of the three AWDs. The project is to deliver the services component of the Hobart Class CSSQT which requires use of USN range facilities, analysis and assets. The USN CSSQT is a component of the SEA 4000 Operational Test and Evaluation program being executed by the Royal Australian Navy.</p> <p>AIR 9000 Phase 8 – This project is to fund modifications of the Hobart Class for interoperability with the MH-60R Seahawk 'Romeo' helicopter. Ship modifications to HMA Ships Hobart and Brisbane will be completed in-service, while modifications to Ship 3 Sydney will be completed during the build program and before delivery to Navy.</p>
<p>Notes</p>
<p>Major risks and issues are excluded from the scope of the review.</p>

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Jun 07	Original Approved (Second Pass Approval)	7,207.4	
Jan 14	Real Variation – Transfer	(109.9)	1
Sep 15	Real Variation – Real Cost Increase	1,199.5	2
		1,089.6	
Jul 10	Price Indexation	1,173.2	3
Jun 19	Exchange Variation	(366.5)	
Jun 19	Total Budget	9,103.7	
Project Expenditure			
Prior to Jul 18	Contract Expenditure – AWD Alliance	(5,603.5)	
	Contract Expenditure – US Government	(1,172.3)	
	Contract Expenditure – Navantia	(437.4)	
	Contract Expenditure – NATO Consortium	(72.4)	
	Other Contract Payments / Internal Expenses	(300.8)	4
		(7,586.4)	
FY to Jun 19	Contract Expenditure – AWD Alliance	(121.9)	
	Contract Expenditure – US Government	(24.5)	
	Contract Expenditure – Navantia	(6.7)	
	Other Contract Payments / Internal Expenses	(45.8)	4-5
		(198.9)	
Jun 19	Total Expenditure	(7,785.3)	
Jun 19	Remaining Budget	(1,318.4)	
Notes			
1	In January 2014, a real cost decrease was approved to transfer project funds to Defence Estate and Infrastructure Group which has responsibility for AWD facilities related deliverables.		
2	In September 2015, following advice and approval from Government in July 2015, a revised Budget Approval Notice was provided authorising the Real Cost Increase to the AWD Budget. Included in the RCI was an estimated \$167.0m to cover indexation costs.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$854.8m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$318.4m having been applied to the remaining life of the project.		
4	Other Contract Payments/Internal Expenses budget comprises: Operating, minor contract and other capital items not attributable to the listed contracts.		
5	Other Contract Payments/Internal Expenses expenditure comprises: Contractors (\$25.4m), Staff costs (\$5.7m) and other minor expenditure not attributable to the listed contracts (\$14.7m).		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
375.9	226.2	226.6	PBS-PAES: The variation is due to reprogramming Project costs to align with anticipated expenditure as a result of outcomes achieved as part of the AWD Reform. The majority of the reductions have been rephrased in financial years 2021/22 and 2022/23. PAES-Final Plan: The variation relates to an update of budget exchange rates from 2018-19 MYEFO to 2019-20 PBS.
Variance \$m	(149.7)	0.4	Total Variance (\$m): (149.7)
Variance %	(39.8)	0.2	Total Variance (%): (39.8)

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(27.2)	Australian Industry	The AWD SEA 4000 Phase 3 Program was underspent by \$27.692 against the approved budget in FY 2018/19. The underspend variation is due to the Defence Finance Group deferring June 2019 payments of the AWD invoices and paying them in July 2019.
		(13.7)	Foreign Industry	
			Early Processes	
		(11.0)	Defence Processes	
		24.2	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
226.6	198.9	(27.7)	Total Variance	The unpaid invoices in FY 2018/19 predominantly relate to the Alliance Based Target Incentive Agreement contract along with some minor Program Management Office costs.
		(12.2)	% Variance	

2.3 Details of Project Major Contracts

3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 2019 \$m			
US Government	Oct 05	842.7	1,102.2	FMS	FMS	1, 2
AWD Alliance (ABTIA)	Oct 07	4,323.1	7,160.3	Variable with Pain/Gain Share	Alliance	3
Navantia (PSD)	Oct 07	373.6	603.2	Fixed with indices escalation	Alliance based	3
NATO Consortium	Dec 09	78.5	72.4	FMS (NATO)	FMS (NATO)	2
Notes						
1	The FMS Case established pre-Second Pass involved three contractual steps (initial version and two amendments); October 2005 for initial engineering services, April 2006 for long lead items and July 2006 for three ship sets of core Aegis Combat System Equipment. The resulting scope was in accordance with Government approval of SEA 4000 Phase 3.1. Post-Second Pass, there have been five further amendments to the FMS Case for additional equipment and services for both the AWD Program and the AWD Alliance. These amendments are in accordance with Government approval at Second Pass for the full scope of SEA 4000 Phase 3. The Price at Signature excludes \$167.5m spent in previous phases of the project. The Price at 30 June 2019 includes an increase of USD \$20m as per Amendment 10 of the LOA and excludes a current Alliance cost of \$208.2m for the purchase of FMS equipment to be supplied under the ABTIA contract.					
2	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
3	As a result of the AWD Reform Strategy, the AWD Alliance (ABTIA) and Navantia (Platform System Design) contracts were renegotiated and new contracts signed in December 2015. The price is the value as per the new contract in out turned dollars (as at June 2019) using the Commonwealth cumulative escalation indices and includes ABTIA Direct Project Costs, Target Fee, Procurement Fee and the Shipbuilding Management Services costs.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
US Government	3	3	Aegis Combat System			
AWD Alliance	3	3	Air Warfare Destroyer			
Navantia	N/A	N/A	Platform System Design and Services			
NATO Consortium	Classified	Classified	Evolved Sea Sparrow Missiles (ESSM)	1		
Major equipment received and quantities to 30 Jun 19						
Ship 1, HMAS Hobart, was provisionally accepted by Defence in June 2017. Ship 2, HMAS Brisbane, was provisionally accepted in July 2018. The Aegis Combat System for all three ships has been delivered. All ESSM procurement have been receipted and finalised by Maritime Explosive Ordnance Branch within Joint System Division (CASG).						
Notes						
1	Quantity being acquired is classified.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AWD Program	Mar 08	N/A	Apr 08	1	
Preliminary Design	AWD Program	Dec 08	N/A	Feb 09	0	1
Critical Design	AWD Program	Dec 09	N/A	Feb 10	0	2
Support System Detailed Design Review	AWD Program	Jun 10	N/A	Aug 10	0	3
Notes						
1	The Preliminary Design Review (PDR) was conducted as scheduled in December 2008 and resulting actions completed as scheduled by February 2009.					
2	The Critical Design Review (CDR) was conducted as scheduled in December 2009 and resulting actions completed as scheduled by February 2010.					
3	The Support System Detailed Design Review (SSDDR) was conducted as scheduled in June 2010 and resulting actions completed August 2010.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Ship 1 – Complete Hull Integration	Dec 12	Mar 14	Mar 14	15	1, 3
	Ship 1 – Start Combat System Light Off	Dec 13	Nov 15	Nov 15	23	2, 3, 4
	Ship 2 – Complete Hull Integration	Mar 14	Dec 15	Dec 15	21	3, 4
	Ship 2 – Start Combat System Light Off	Mar 15	Apr 17	Apr 17	25	3, 4
	Ship 3 – Complete Hull Integration	Jun 15	Aug 17	Jul 17	25	3, 4
Acceptance	Ship 3 – Start Combat System Light Off	Jun 16	Sep 18	Sep 18	27	3, 4
	Ship 1 – Commencement of Category 5 Trials	Aug 14	Sep 16	Jan 17	29	3, 4
	Ship 1 – Provisional Acceptance	Dec 14	Jun 17	Jun 17	30	3, 4, 5
	Ship 2 – Commencement of Category 5 Trials	Nov 15	Dec 17	Mar 18	28	3, 4
	Ship 2 – Provisional Acceptance (Materiel Release 2)	Mar 16	Jul 18	Jul 18	28	3, 4, 6
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Oct 19	Oct 19	32	3, 4, 7
	Ship 3 – Provisional Acceptance (Materiel Release 3)	Jun 17	Feb 20	Feb 20	32	3, 4, 8
Notes						
1	Complete Hull Integration was achieved when the last erection joint was completed and has been structurally inspected and accepted.					
2	Start Combat System Light Off verified the readiness of the first set of installed combat system equipment for CAT 4 testing.					
3	In 2010 difficulties were encountered in relation to the engineering and construction of some of the first AWD hull blocks. This resulted in the reallocation of block work between BAE, Forgacs and Navantia and a revision to the delivery schedule. On 6 September 2012, the then Minister for Defence announced, that the AWD schedule would be re-baselined and that the revised AWD delivery dates would be March 2016, September 2017, and March 2019.					
4	In May 2015, following a Comprehensive Cost Review conducted by the AWD Alliance held in February, the then Minister for Defence announced that the delivery schedule had been changed to June 2017, September 2018 and March 2020 respectively. With the introduction by Navantia of an expert shipbuilding management team into the shipyard as part of the AWD Reform Long Term Arrangements for the AWD Reform, the delivery schedule for Ships 2 and 3 was brought forward by up to three months from prior schedule extension.					
5	Ship 1 Provisional Acceptance was achieved on 16 June 2017, followed by Initial Materiel Release (IMR) in September 2017.					
6	Ship 2 Provisional Acceptance was achieved on 5 July 2018, followed by Initial Operational Release 2 (IOR2) in October 2018.					
7	Docking required to investigate and repair shaft vibration has delayed Ship 3 Category 5 sea trials by three months.					
8	Chief of Navy has approved the AWD Alliance to conduct the AIR 9000 upgrade program on Ship 3. Provisional Acceptance moves from December 2019 to February 2020.					

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Progress Toward Materiel Release and Operational Capability Milestones																												
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes																								
Initial Materiel Release (IMR)	Dec 14	Sept 17	33	1, and see also Note 3 and 4 above																								
Initial Operational Capability (IOC)	Dec 15	Dec 18	36	1, and see also Note 3 and 4 above																								
Final Materiel Release (FMR)	Dec 17	Mar 20	27	2																								
Final Operational Capability (FOC)	May 18	Jun 21	37	2, 3																								
Notes																												
1	The IMR, FMR and FOC dates have been reviewed and have been approved with the release of a revised Materiel Acquisition Agreement 2.0 in March 2018. Variances are directly attributable to the revised AWD delivery dates that were agreed as a result of the AWD reform strategy.																											
2	Incorporation of AIR 9000 Aviation Upgrade Program scope in Ship 3 causes Provisional Acceptance to move from December 2019 to February 2020, and FMR from January 2020 to March 2020.																											
3	Declaration of FOC by Chief of Navy will occur after Combat System Ship Qualification Trials.																											
Schedule Status at 30 June 2019																												
<table border="1"><caption>Schedule Status at 30 June 2019</caption><thead><tr><th>Scenario</th><th>Approval</th><th>IMR</th><th>IOC</th><th>FMR</th><th>FOC</th></tr></thead><tbody><tr><td>Schedule Plan at Government Approval</td><td>Jun-07</td><td>Jun-15</td><td>Jun-16</td><td>Jun-18</td><td>Jun-18</td></tr><tr><td>IMR/FMR introduced in FY 2010-11</td><td>Jun-07</td><td>Jun-14</td><td>Jun-18</td><td>Jun-18</td><td>Jun-18</td></tr><tr><td>Schedule Plan at 30 June 2019</td><td>Jun-07</td><td>Jun-17</td><td>Jun-19</td><td>Jun-20</td><td>Jun-21</td></tr></tbody></table>					Scenario	Approval	IMR	IOC	FMR	FOC	Schedule Plan at Government Approval	Jun-07	Jun-15	Jun-16	Jun-18	Jun-18	IMR/FMR introduced in FY 2010-11	Jun-07	Jun-14	Jun-18	Jun-18	Jun-18	Schedule Plan at 30 June 2019	Jun-07	Jun-17	Jun-19	Jun-20	Jun-21
Scenario	Approval	IMR	IOC	FMR	FOC																							
Schedule Plan at Government Approval	Jun-07	Jun-15	Jun-16	Jun-18	Jun-18																							
IMR/FMR introduced in FY 2010-11	Jun-07	Jun-14	Jun-18	Jun-18	Jun-18																							
Schedule Plan at 30 June 2019	Jun-07	Jun-17	Jun-19	Jun-20	Jun-21																							
Note																												
Forecast dates in Section 3 are excluded from the scope of the review.																												

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	Green: The Program is currently meeting materiel capability requirements, other than Radar – Electronic Attack , as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: This project will not deliver a Radar - Electronic Attack capability. Funding will be used to help develop an indigenous Electronic Attack system for use in the Hobart Class and other Navy vessels.
Note This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	One Hobart Class Ship System with up to Category 5 (sea acceptance) trials, testing and certification completed. Initial sustainment arrangements in place to support IOC. Training of the Hobart Class Systems for the commissioning crew to support IOC. IMR was achieved in September 2017.	Achieved.
Initial Operational Capability (IOC)	Ship 1 Hobart can be employed operationally, realised on attainment of all capability release milestones. Completion of Navy Operational Test and Evaluation. Compliance with the Operational Concept Document. Completion of Combat System Ship Qualification Trials, and the declaration that all Fundamental Inputs to Capability have been delivered. IOC was achieved in December 2018.	Achieved.
Final Materiel Release (FMR)	All three Hobart Class Ship Systems with up to Category 5 (sea acceptance) trials, testing and certification completed. Combat System Through Life Support Facility delivered and ready for support. Training on the Hobart Class systems for the commissioning of crew 3. All sustainment arrangements in place to provide materiel support to the Hobart Class. FMR is expected to be achieved in March 2020 .	Not yet achieved.
Final Operational Capability (FOC)	Ships 01, 02 and 03 are assessed as capable of sustainably performing all the requirements detailed in the Operational Concept Document. FOC is expected to be achieved in June 2021.	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
1. There is a chance that the Integrated Sonar System Sonar will be affected by design issues leading to an impact on capability.	Issues with the Integrated Sonar System during Ship 2 sea trials have led to equipment being returned to the supplier for redesign and upgrade. After testing, this should be ready for installation on Ships 1 and 2 in mid-2019. If successful, full power testing to be conducted during Ship 3 sea trials should support final verification of sonar system performance.
2. Capability Acceptance: Certification requirements are unclear for some equipment, and treatment of non-conformances could delay ship acceptance.	The Alliance has put in place a Quality Assurance process to manage non-conformances, and a Project Certification Plan has been agreed with the RAN. Risk has been reduced with the successful acceptance of Ship 1 and Ship 2, but there remains risk to the timely acceptance of Ship 3.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
3. Requirement to remediate non-conformances on Ships 2 and 3 post Combat System Ship Qualification Trials.	The Program will provide support if problems are discovered during upcoming Trials.
4. Increased costs of worker redundancies as period of obligation increased, with Government mandated sale of ASC Shipbuilding to BAE Systems.	With the closure of the AWD program and transfer of workforce to AWD Shipbuilding, the Program is providing support for compensation and redundancy programs.

5.2 Major Project Issues

Description	Remedial Action
1. The delivery of FMS elements of the AWD supplies may not be possible, or may be delayed or compromised in integrity, due to the budget for FMS Engineering and Technical Assistance (ETA) not being sufficient.	After successful completion of Combat System Sea Trials on HMAS Hobart this issue has been retired. Any future deliveries of FMS equipment is now managed by the Combat Management and Payload System in Ships Division, in CASG.

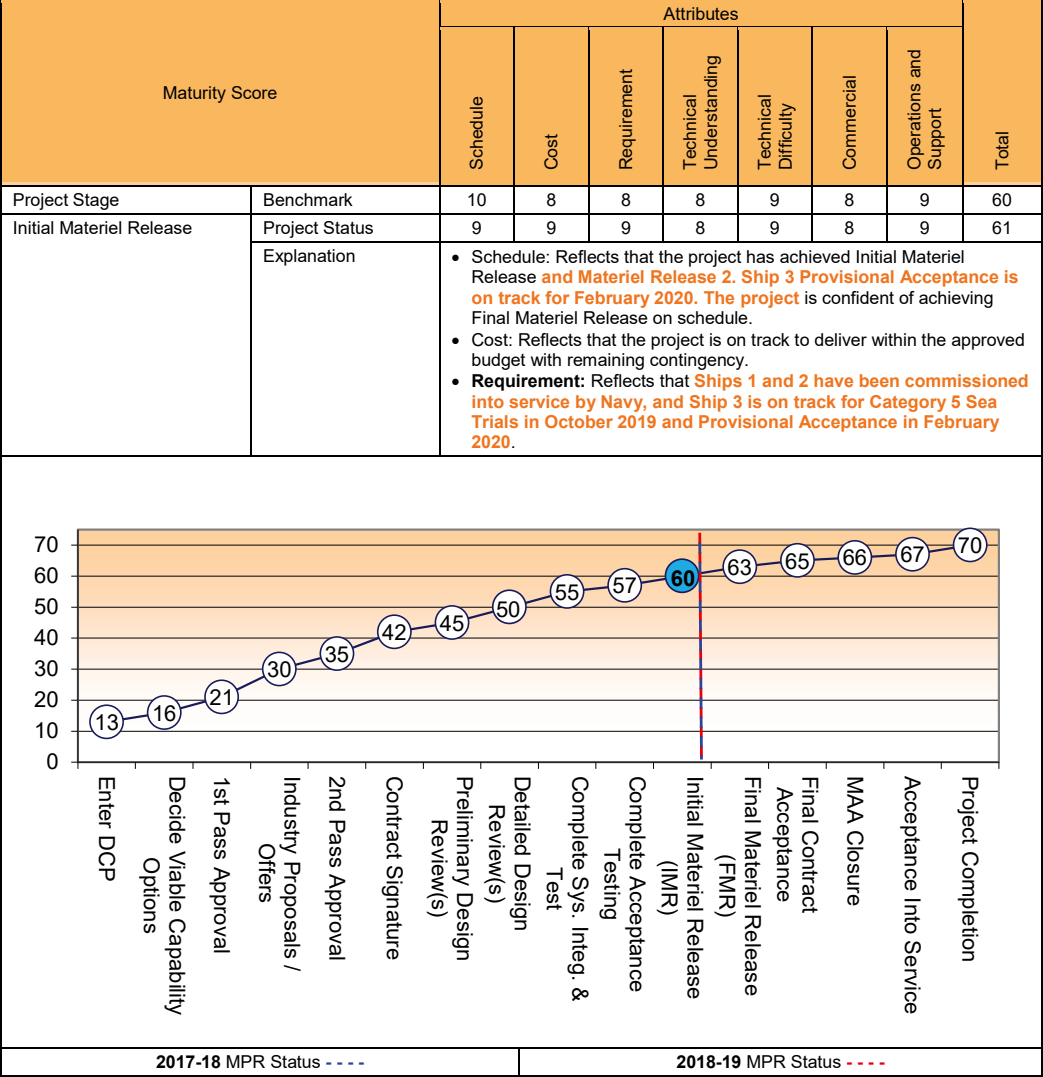
Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

<p>2. Change Management: Change introduced to the existing platform design as a result of:</p> <ul style="list-style-type: none"> • Legislative or regulatory requirements, • Safety requirements, and • Equipment obsolescence, and • Interrelated projects (e.g. AIR9000) <p>Will impact cost and possibly schedule. Severity of the cost and schedule impacts to the Commonwealth will be dependent on the scope and timing of the change implementation relative to Ship completion.</p>	<p>This issue has now been retired. The AWD Safety Case has been approved, and two AWDs have been accepted, with the third ship due for Acceptance in February 2020, following the successful introduction of the AIR 9000 Aviation Upgrade program.</p>
<p>3. Maintenance of the Hobart Class ships is expected to be disrupted with the upcoming closure of the AWD program, with issues relating to sparing, data transfer, and the incorporation of engineering change post Acceptance.</p>	<p>The AWD project is providing support to mitigate issues not resolved during the set-up and management of the DDG SPO, to maintain operational readiness days.</p>
<p>4. Loss of skills and expertise as the AWD program closes.</p>	<p>Support is being provided to maintain shipbuilding knowledge base as the AWD Program Office transitions to Naval Construction Branch to manage naval construction programs.</p>
<p>Note</p>	
<p>Major risks and issues in Section 5 are excluded from the scope of the review.</p>	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
The AWD Reform has been successful and the key reason is due to implementing an experienced Management Team into the Shipbuilding Program who have previously built and designed the ship. First of Class ship build programs should have this support when building the first ship, allowing the local Australian workforce to be better prepared and trained to build the remaining ships.	Governance
The Hobart Class Combat System operation and performance has been proven on HMAS Hobart and NUSHIP Brisbane through acceptance tests at sea. The first-time success of this complex integration is due to thorough design and architecture early in project, along with the extensive use of on-shore test facilities closely replicating the ship environment. Close cooperation and regular dialogue with United States Navy colleagues were also important to ensure integration with the AEGIS weapon system.	Contract Management

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

The interpretation of the requirements of fitness for purpose of drawings is different between contracting parties. A review of all product types prior to contract and interrogation of the delivery schedule to confirm sufficient time for reviews and incorporation of comments is necessary.	Contract Management
The shipbuilding capacity of shipyards involved in a project like AWD needs to be assessed in detail in terms of precise capacity to undertake production engineering as well as the workload constraints of facilities, production supervision and overall workforce numbers taking into consideration the total contracts conducted at the shipyard in parallel.	Resourcing First of Type Equipment
The schedule that plans the transition from design to production needs detailed evaluation by the designer(s) and the production shipyard(s) to ensure the balance between commencing production and completing very detailed design is appropriately balanced and agreed.	Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Ms Sheryl Lutz
Program Manager	CDRE Steven Tiffen, RAN
Deputy Program Manager	Mr Greg McPherson

Project Data Summary Sheet¹⁴¹

Project Number	AIR 7000 Phase 2B
Project Name	MARITIME PATROL AND RESPONSE AIRCRAFT SYSTEM
First Year Reported in the MPR	2014-15
Capability Type	Replacement
Acquisition Type	MOTS
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Jul 07
Government 2nd Pass Approval	Feb 14
Budget at 2 nd Pass Approval	\$3,577.7m
Total Approved Budget (Current)	\$5,375.7m
2018-19 Budget	\$472.6m
Project Stage	Initial Materiel Release
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

AIR 7000 Phase 2B seeks to acquire the materiel elements of the Maritime Patrol and Response Aircraft (MPRA) weapon system, including a Through Life Support (TLS) system, as partial replacement of the AP-3C Orion aircraft.

Twelve P-8A Poseidon aircraft will be purchased for the Royal Australian Air Force (RAAF) through a Cooperative Program (CP) with the United States Navy (USN). The scope of the CP includes the Production, Sustainment and Follow-on Development (PSFD) of the United States Navy and RAAF P-8A Poseidon fleet.

1.2 Current Status

Cost Performance

In-year

The project has an **underspend** for this financial year, achieving \$472.4m at **30 June 19** against a planned in-year budget of \$472.6m, a variance of \$0.2m.

Project Financial Assurance Statement

As at **30 June 19**, the AIR 7000 Phase 2B Project Office has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

In August 2014, an Advanced Acquisition Contract (AAC) was signed by the USN, on behalf of Australia, for the first four RAAF P-8A aircraft. The AAC for the second set of four P-8A aircraft was signed in June 2015. The AAC for the third set of four P-8A aircraft was signed in May 2016. The AAC allows the Prime Contractor, Boeing, to acquire long lead items in order to ensure that all required components are available on time for assembly of the P-8A aircraft. The USN placed the full aircraft production contract for the first four Australian P-8A aircraft with Boeing in August 2015. The contract for the second set of four aircraft, Lot 7, was placed in January 2016 and the third set of four aircraft, Lot 8, was placed in March 2017 (total of 12 aircraft).

The third set of four aircraft was approved by government in February 2016 with a budget of \$1,295.4m. The additional aircraft and budget has increased the AIR 7000 Phase 2B project scope. As a result of the increased scope, an update to the Materiel Acquisition Agreement (MAA) and Schedule has occurred.

The Royal Australian Air Force (RAAF) accepted the first aircraft in October 2016 ahead of schedule. Since this delivery, positive schedule performance has continued, **with eight aircraft accepted as at 30 June 2019**. The USN have advised that **the remaining four aircraft will be delivered on time. Aircrew and maintenance training systems were delivered in time to support**

141 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

<p>commencement of in-country training by 92 Wing at RAAF Base Edinburgh from July 2018.</p> <p>Final Materiel Release (FMR) and Final Operational Capability (FOC) dates have been revised to June 2022.</p> <p>Materiel Capability Delivery Performance</p> <p>The P-8A Poseidon is being developed under a spiral development program by the USN. The spiral development consists of an evolution of increments, each of which has a number of Engineering Change Proposals (ECP) that define the maturing configurations of the increment. The variant of the first P-8A acquired under the scope of Phase 2B is defined as Increment 2, ECP 2.</p> <p>AIR 7000 Phase 2C proposes to be the first major upgrade of the aircraft purchased under AIR 7000 Phase 2B (predominantly a Mission System upgrade delivered in the later ECPs of Increment 3) subject to future government approval.</p> <p>The USN declared Initial Operational Capability (IOC) for the Increment 2, ECP 1 aircraft in October 2014, and declared IOC for the Increment 2 ECP 2 aircraft in August 2016. Through the CP, Australia has had significant insight into, and influence on Search and Rescue Kit and Harpoon 1G integration, the work being undertaken on the Increment 2, ECP 2 configuration, and has high confidence that the aircraft (and supporting systems) will provide the capability required by the MAA.</p> <p>The Materiel Release 2 milestone was achieved in January 2019. This milestone relates predominantly to delivery of the necessary capability elements for 92WG to commence training of aircrew and maintenance personnel in Australia, along with provision of spares and explosive ordnance elements. Air Force subsequently declared achievement of the Operational Capability 2 milestone in February 2019.</p> <p>Note</p> <p>Forecast dates and capability assessments are excluded from the scope of the review.</p>
--

1.3 Project Context

<p>Background</p> <p>Project AIR 7000 Phase 2B is an ACAT II project, seeking to acquire the P-8A Poseidon MPRA capability, as partial replacement for the AP-3C Orion capability, under a CP with the USN. IOC was announced in January 2018, supporting the planned withdrawal of the AP-3C Orion to occur in FY18/19.</p> <p>In December 2011, Government approval was provided to participate in the CP for development of P-8A aircraft and, in March 2012, the Project entered into an initial 10-year Memorandum of Understanding (MoU) with the USN for P-8A PSFD. The MoU defines Australia's contribution towards the joint costs for PSFD, and the separate funding of Australian-unique deliverables and effort.</p> <p>The Increment 3 Project Arrangement was signed in September 2012 to enable Australia to participate in the incremental upgrade to Phase 2B. This upgrade will be incorporated under AIR 7000 Phase 2C.</p> <p>In February 2014, Government Second Pass Approval was for the Project to acquire eight P-8A Poseidon aircraft, along with associated support and training systems. The Government approved the acquisition of an additional four (4) aircraft in February 2016.</p> <p>The Project Office issues Procurement Requests (PRs) to advise the CP of Australia's intent to acquire materiel through the CP. After an appropriate scope, schedule and cost have been advised by the CP, the Project Office issues a Letter of Authority (LOA) which provides Australia's financial commitment for the acquisition. The Project formally submitted its first PR through the CP in June 2014, which covered aircraft, aircrew training devices, aircraft spares, aircraft support and test equipment, transition training and other support elements.</p> <p>On 4 September 2014, Defence signed a LOA authorising the USN to procure Australian P-8A initial aircraft spares.</p> <p>In May 2015, the USN signed the contract for Australia's P-8A Aircrew Training Devices to be delivered in 2017-18.</p> <p>Sustainment and in-service support will provide opportunities for Australian Industry involvement. Further opportunities exist for Australian Industry in facilities and infrastructure development.</p> <p>In accordance with the approved acquisition strategy, opportunities for Australian Industry participation in the broader USN P-8A Global program will exist on a competitive contracting basis throughout the life-cycle of the P-8A. Opportunities include component manufacture, component repair, and research and design services.</p> <p>AIR 7000 Phase 2B also seeks to generate Australian industry participation in the acquisition, sustainment and follow-on development phases of the program through the Australian Industry Capability and Boeing Global Supply Chain.</p> <p>Uniqueness</p> <p>The RAAF P-8A aircraft will be identical to the USN P-8A aircraft, except for minor configuration differences due to national requirements (such as different aircraft marking schemes). Other support elements, such as training devices and spares, will also be kept as common as technically possible.</p> <p>AIR 7000 Phase 2B is acquiring, and sustaining, the P-8A capability through a Government to Government CP with the USN. This arrangement is distinctly different from the traditional Foreign Military Sales (FMS) or Direct Commercial Sales (DCS) arrangements. The benefits of a CP include significantly enhanced insight and influence over the development of the weapon system, better awareness and control of project costs drivers and risks, better access to technical and sustainment data, and access to the USN wholesale spares warehouse.</p> <p>There are 16 Commonwealth personnel embedded in the USN Program organisations to provide input, insight and influence across the P8 program. These embedded team members are referred to as Cooperative Program Personnel (CPP).</p> <p>Major Risks and Issues</p> <p>The Project is currently mitigating schedule risks associated with the Mk 54 Torpedo delivery and UNIPAC III (Objective) Search and Rescue kit development.</p> <p>MR2 was declared to Air Force with minor spares (Fly Away Kit) deficiencies and an outstanding qualification requirement for the Operational Flight Trainer (pilot simulator). Neither of these deficiencies represented an operational impact, resulting in Air Force declaring OC2 in February 2019. The Project Office is working to remediate these deficiencies.</p>
--

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

All other previously reported major risks and issues have been either retired, downgraded or transferred to sustainment to manage.

The Project Office relocated to Surveillance and Response SPO at RAAF Base Edinburgh in January 2019. Since this time, the Project has conducted a review of all risks and issues.

Other Current Related Projects/Phases

Project AIR 7000 Phase 1B received Second Pass approval in June 2018 to acquire a High Altitude Long Endurance, Remotely Piloted Aircraft System for patrol and surveillance purposes. The selected aircraft was the MQ-4C Triton platform, procured through a Cooperative Program with the United States Navy, similar to the P-8A acquisition. The Triton forms a critical aspect of the 'Family of Systems' approach, to replace the AP-3C Orion Capability. The Australian Government announced the investment decision through a joint media release statement on 26 June 18.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Nov 07	Original Approved	144.1	1
Jul 10	Real Variation – Real Cost Decrease	(21.7)	2
Dec 11	Real Variation – Transfer	(38.0)	3
Apr 12	Government Intermediate Consideration	83.5	4
Feb 14	Government Second Pass Approval	3,409.8	5
	Total at Second Pass Approval	3,577.7	
Mar 16	Real Variation – Scope	1,295.4	6
Jun 18	Real Variation – Transfer	1.0	6
		1,296.4	
Jul 10	Price Indexation	20.5	7
Jun 19	Exchange Variation	481.1	
Jun 19	Total Budget	5,375.7	
Project Expenditure			
Prior to Jul 18	Contract Expenditure – Aircraft Acquisition Payments – Lot 6	(775.3)	8
	Contract Expenditure –Aircraft Acquisition Payments – Lot 7	(552.9)	
	Expenditure – Aircraft Acquisition Payments – Lot 8	(546.3)	
	Contract Expenditure – Aircrew Training System Contract	(268.8)	
	Contract Expenditure – Aircraft Government Furnished Equipment	(186.4)	
	Contract Expenditure – Aircraft Retail Spares	(122.2)	9
	Contract Expenditure – PSFD MoU Contributions	(111.9)	
	Contract Expenditure – Increment 1 Contribution	(66.0)	
	Other Contract Payments/Internal Expenses	(800.6)	9,10
	Other adjustments to cash reporting	2.4	
		(3,428.00)	
FY to Jun 19	Contract Expenditure – Aircraft Acquisition Payments – Lot 7	(231.3)	
	Contract Expenditure Aircrew Training System	(89.6)	
	Contract Expenditure – Aircraft Acquisition Payments –Lot 8	(48.7)	
	Contract Expenditure – PSFD MoU Contributions	(9.4)	
	Other Contract Payments/Internal Expenses	(93.4)	11
		(472.4)	
Jun 19	Total Expenditure	(3,900.4)	
Jun 19	Remaining Budget	1,475.3	
Notes			

1	Government First Pass Approval to initiate the Project and progress the project to Intermediate Consideration. At First Pass, AIR 7000 entered the Spiral 1 MoU with the USN for development of the P-8A weapon system.
2	Hand back of contingency funding due to retirement of specific Increment 1 MoU risks.
3	Reallocation of funding to Defence Support and Reform Group to develop AIR 7000 Phase 2B facilities requirements.
4	Government Intermediate Consideration Funding Approval required to progress the project to 2nd Pass Government approval. Includes costs of project planning documentation development and contractor project support services.
5	Government Second Pass Approval to fund the acquisition of eight P-8A aircraft, and associated support systems and sustainment arrangements.
6	Government Second Pass Approval to fund the acquisition of an additional four P-8A aircraft and associated support systems. Whilst funding approval was provided under AIR7000 Phase 2D, funds have been merged with AIR7000 Phase 2B for administration and reporting purposes as it relates to the delivery of one capability. \$1m was transferred from DST Group due to surplus funds in FY2017-18.
7	Until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$17.4m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$3.1m having been applied to the remaining life of the project.
8	Amounts differ from the previous year due to a revalidation of life to date expenditure.
9	Reclassification of "Contract Expenditure – Aircraft Retail Spares" due to prior year (FY17/18) error. Figure reported in USD instead of AUD increase of AUD \$10.7m offset by a reduction in "Other Contract Payments".
10	Other expenditure to 30 June 2018 was comprised of Maintenance Training Device scoping and acquisition costs of \$102.4m , Increment 3 contributions of \$84.1m , Wholesale Spares Pool of \$39.2m, Operational Load Management \$39m, Aircrew Maintenance and Training costs of \$36.6m , MK 54 acquisition costs of \$36.6m , Sonobuoys acquisition cost of \$37.2m , Commonwealth Project Personnel (CPP) expenses of \$22m, Mission Support System (MSS) of \$21.2m, DIRCM spares of \$20.3m, Tactical Operational Centre/Mobile Tactical Operational Centre (MTOC) scoping and acquisition costs of \$19.5m, Engine Spares \$16.8m, Support and Test Equipment (S&TE) acquisition costs of \$21.6m , Search and Rescue (SAR) Kit \$11.8m , CIOG Single Integration Environment of \$13.6m , ICT Co-operative Solution payment of \$4.9m, Field Service Representative (FSR) payments of \$4.6m, Training System Support Services/Spares of \$20.7m , Sustainment Transition \$29.2m , SNS Reliability Retrofit \$24.7m , Spare Engine \$23.4m , Strategic Support Partnership Contract (SSPC) \$15.7m , Air to Air Refuelling \$14m , Transportation Training Systems \$9.9m , Training Systems Support \$4.6m , Ordnance \$2.9m and other operating expenditure not attributable to the listed major contracts of \$124.1m .
11	Other expenditure to 30 June 19 was comprised of Objective Search and Rescue (SAR) store Integration Services \$0.8m , Aircraft Retrofit costs \$4.2m , Air to Air Certification Services \$5.7m , Objective SAR Kit development and delivery \$1.9m , Air to Air Refuelling certification \$0.2m , Spares Sonobuoys \$4.7m , Ordnance Equipment \$8.8m , Strategic Support Partnership (SSPC) and Major Service Provider Contracts (MSP) \$11.8m , PSFD MoU Inc 3 Payment \$14.2m , Support and Test Equipment (S&TE) \$10.1m , Spares \$0.6m , CIOG ICT Integration \$7.5m , Maintenance Training Devices LoA 27 \$11.3m and other operating expenditure not attributable to the listed major contracts of \$11.6m .

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
592.3	408.9	472.6	<p>PBS – PAES: The reduction of \$183.4m is due to: Bringing forward Aircraft Payments in FY17/18 from FY18/19 value \$150m and deferring \$33.4m of procurement to future years in-line with CFO strategic AMCIP funding guidance.</p> <p>PAES – The variance is due to delays of payments to FY19/20 for Aircraft payments of \$37m, Training System Sustainment contract of \$10m, Training System Spares of \$11m, and CIOG ICT Integration payments of \$5m. In addition, \$125m was brought forward from FY19-20 for Aircraft Payments, resulting in an increase to the budget.</p>
Variance \$m	(183.4)	63.7	Total Variance (\$m): (119.7)
Variance %	(31)	15.6	Total Variance (%): (20.2)

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	Minor variances in some costs incurred during FY18/19.
			Foreign Industry	
			Early Processes	
		(0.2)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
472.6	472.4	(0.2)	Total Variance	
		0	% Variance	

2.3 Details of Project Major Contracts

3.5 Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
PSFD MoU - Contributions (US Government)	Mar 12	130.4	133.3	Cost Ceiling (Capped)	MoU	1, 8
Aircraft Government Furnished Equipment (GFE) (US Government)	Apr 14	142.9	234.9	Variable	MoU	2,7,8
AAC and Aircraft Production Lot 6 (US Government)	Aug 14	159.0	775.3	Variable	MoU	3,7,8,10
Retail Aircraft Spares (US Government)	Sep 14	122.1	122.2	Variable	MoU	4,7,8
Aircrew Training Systems (US Government)	Dec 14	275.4	358.4	Variable	MoU	5,7,8,10
AAC and Aircraft Production Lot 7 (US Government)	Jun 15	182.5	784.3	Variable	MoU	6,7,8
AAC and Aircraft Production Lot 8 (US Government)	May 16	139.0	735.4	Variable	MoU	8, 9
Notes						
1	PSFD MoU shared contributions are limited to a cost ceiling, which can only be changed upon mutual written consent of the Participants. Australia is responsible for paying a proportion of the total costs based on the relative number of Australian aircraft in the overall fleet.					
2	Aircraft GFE to be procured via contract arrangements between the USN and various suppliers for Lot 6, Lot 7 and Lot 8 aircraft. Price represents the total value of contracts expected to be awarded and for which Section 23 Commitment Approval has been obtained. The USN are procuring the GFE on behalf of Australia as part of a consolidated US Government purchase.					
3	Lot 6 Aircraft AAC – signature allowed the prime contractor, Boeing, to procure long-lead aircraft components prior to entering into fully defined contract arrangement. Lot 6 production contract for acquisition of the first four aircraft was signed on 21 August 2015.					
4	Retail aircraft spares requirements to be procured via US Naval Supply Systems Command (NAVSUP) contracts, from USN inventory or via other US Government agency arrangements. The majority of retail spares are to be procured via NAVSUP.					
5	Aircrew Training Devices - signature allowed the prime contractor, Boeing, to acquire the required long-lead parts, commence engineering and program management activities in support of Australian P-8A training device production. A fully defined contract was signed May 2015.					
6	Lot 7 Aircraft AAC – signature allowed the prime contractor, Boeing, to procure long-lead aircraft components prior to entering into fully defined contract arrangement. Lot 7 production contract for acquisition of the second set of four aircraft was signed in January 2016.					
7	'Contract signature' dates in this table are based on the date each LoA was issued by AIR 7000 Phase 2 project office. LoAs are issued by the project formally authorising the commitment and/or obligation of funds for contract execution or efforts to satisfy Australian-unique requirements.					
8	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current budget exchange rates.					
9	Lot 8 Aircraft AAC – signature allowed the prime contractor, Boeing, to procure long-lead aircraft components prior to entering into fully defined contract arrangement. Lot 8 production contract for acquisition of the third set of four aircraft was signed in March 2017.					
10	These contract values have changed due to the separation of LOT 6 and LOT 8 contract reporting.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				

PSFD MoU - Contributions (US Government)	N/A	N/A	Australia's contribution to shared costs from 2012-13 to 2021-22 based on the original purchase of eight aircraft. Includes contribution to production, sustainment and follow-on development for common efforts, and project overhead and administration costs.	1
Aircraft Government Furnished Equipment (GFE) (US Government)	Various	Various	Items to be procured in support of production of Lot 6 (aircraft 1-4), Lot 7 (aircraft 5-8) and Lot 8 (aircraft 9-12).	2
AAC Lot 6 (US Government)	Various	Various	Four Lot 6 aircraft and long-lead P-8A aircraft components.	3
Retail Aircraft Spares (US Government)	Various	Various	Initial spares buy for the first eight aircraft.	
Aircrew Training Systems (US Government)	Various	Various	Training Systems Support Centre, Weapons Tactics Trainers, Part Task Trainer, Operational Flight Trainers, Mission Systems Desktop Trainers and Training Support.	
AAC Lot 7 (US Government)	Various	Various	Four Lot 7 aircraft and long-lead P-8A aircraft components.	4
AAC Lot 8 (US Government)	Various	Various	Four Lot 8 aircraft and long-lead P-8A aircraft components.	5
Major equipment received and quantities to 30 Jun 19				
To date, eight aircraft and two Mobile Tactical Operations Centres (MTOCs) have been delivered.				
Notes				
1	No equipment delivered as part of this MoU.			
2	GFE delivery will be to prime contractor for aircraft production.			
3	The contract for acquisition of the first four aircraft was signed in August 2015, with all four aircraft being delivered.			
4	The contract for acquisition of the second four aircraft was signed in January 2016, with all four aircraft being delivered.			
5	No equipment has been delivered as part of this contract. The contract for the acquisition of the third set of four aircraft was signed in March 2017.			

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Component Advance Development	Multi-Mission Maritime Aircraft (subsequently called the P-8A Poseidon)	N/A	N/A	2002	N/A	1
System Design Development (SDD) - Milestone B	P-8A SDD	May 04	May 04	May 04	0	2
Design Readiness Review	P-8A SDD	Jul 07	Aug 07	Aug 07	1	
Milestone C	P-8A SDD	May 10	Aug 10	Aug 10	3	3
FRP Decision	P-8A Increment 2	Apr 13	Dec 13	Jan 14	8	4,5
Notes						
1	Component Advance Development was a competitive award to multiple contractors to define alternative Multi Mission Aircraft concept system architectures and evaluate associated risks and proposed mitigations.					
2	SDD phase was used to design, develop and test the P-8A system.					
3	Milestone C represents Low Rate Initial Production (LRIP) Approval and entry into the Production and Deployment Phase.					
4	US Defense Acquisition Board approved the deferral of the Full Rate Production (FRP) decision from the original planned to allow for completion of the testing and subsequent reporting as well as adding an additional LRIP (Lot IV).					
5	AIR 7000 Phase 2B relies on the Design Review processes of the USN.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	Fleet Release 30 (Increment 2 ECP 1)	Apr 14	Dec 14	Dec 14	8	1
	Fleet Release 40 (Increment 2 ECP 2)	Aug 15	Aug 16	Aug 16	12	1,2
	Fleet Release 46 (Increment 2 ECP 3)	Apr 17	Oct 17	Nov 17	7	1,3
Acceptance	Accept and deliver Lot 6 Aircraft (1-4)	Nov 16 – Sep 17	Nov 16 – Aug 17	Oct 16 - Jul 17	(2)	4, 7
	Accept and deliver Lot 7 Aircraft (5-8)	Dec 17 – Sep 18	Dec 17 – Aug 18	Oct 17 – Jun 19	10	5, 7
	Accept and deliver Lot 8 Aircraft (9-12)	Aug 19 – Feb 20	Aug 19 – Feb 20	Aug 19 – Feb 20	0	6, 7
	MTOC and two Deployable MTOCs	Sep 16 – Aug 18	Nov 16 – Dec 19	Feb 17 – Dec 19	16	8
	Training System	Jan 18 – Mar 18	Mar 18 – Jun 18	Mar 18 – Jul 18	4	9
Notes						
1	Fleet Releases are the final configurations for the incremental builds of the P-8A Weapon System. Increment 2 is being delivered through a number of smaller Engineering Change Proposals. Variance from original planned dates are due to changes in the Boeing / USN schedule.					
2	Due to data disclosure issues FR 40 was updated to 40.1 and finalised in November 2016.					
3	Fleet Release 50 was re-titled Fleet Release 46 to align with the management of the Lot 8 production contract. The capabilities planned were unchanged as the change was solely based on nomenclature. The release of this variant was delayed by seven months due to developmental issues in the new capabilities to be incorporated.					
4	Australian Lot 6 aircraft were delivered in October 2016, February 2017, April 2017, and July 2017.					
5	Australian Lot 7 aircraft were delivered in October 2017, January 2018, May 2018, and June 2019.					
6	Australian Lot 8 aircraft are scheduled for delivery in August 2019, September 2019, October 2019, and February 2020.					
7	Australia adopted a model of Recognition of Prior Acceptance for Aircraft certification.					
8	Variance is due to an additional Mobile Tactical Operations Centre (MTOC 32) being added to project scope. Further, the delay from February 2019 to December 2019 is due to a reprogramming of MTOC32 delivery with the US Navy.					
9	Variance from original planned date is due to the inability of the Original Equipment Manufacturer (OEM) to deliver the full Training System as per the contract. All training devices are contracted to be delivered prior to the commencement of the first conversion training courses.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Materiel Release 1 (MR1)	Jan 17	May 17	4	1, 2
In Service Date (ISD)	Nov 16	May 17	6	1
Initial Materiel Release (IMR)	Jan 18	Nov 17	(2)	3

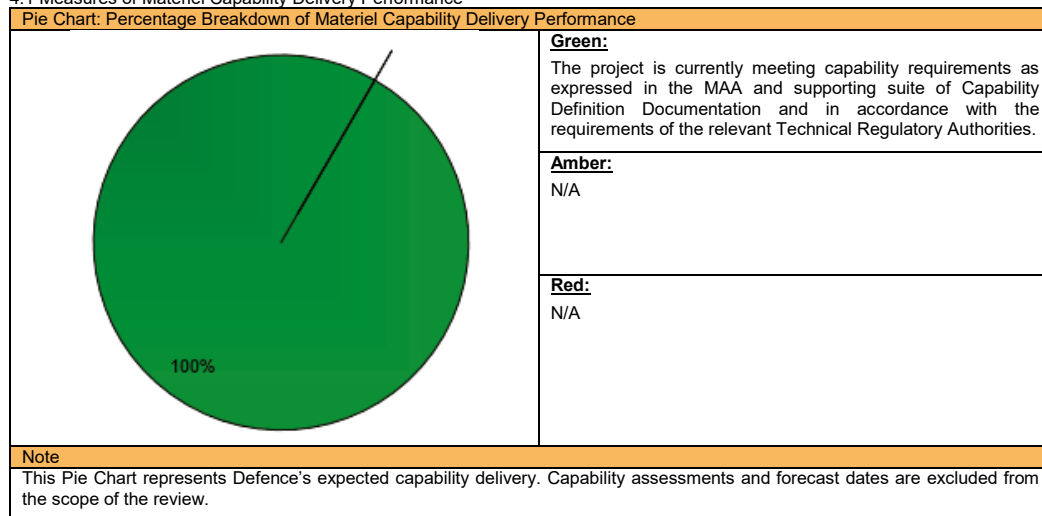
Initial Operational Capability (IOC)	Feb 18	Jan 18	(1)	3
Materiel Release 2 (MR2)	Dec 18	Jan 19	1	4
Operational Capability 2 (OC2)	Jan 19	Feb 19	1	6
Materiel Release 3 (MR3)	Dec 19	Dec 19	0	
Operational Capability 3 (OC3)	Jan 20	Jan 20	0	
Final Materiel Release (FMR)	Oct 19	Jun 22	32	5
Final Operational Capability (FOC)	Jan 20	Jun 22	29	5
Notes				
1	Variance due to the delay in accepting the first MTOC actually occurring in February 2017.			
2	When declaring MR1, CASG acknowledged the Threshold Search and Rescue Store capability would not be delivered until IMR. This was achieved, at the completion of Operational Test & Evaluation (OT&E) activities late in November 2017.			
3	Due to positive schedule performance across all areas of the project all requirements for IMR were delivered prior to forecast date, enabling Air Force to claim IOC on schedule.			
4	Variance of one month is due to time taken for CASG and Air Force to perform analysis of minor MR2 deficiencies. This was necessary to confirm that P-8 capability would not be affected by these minor deficiencies.			
5	FMR & FOC dates have slipped to accommodate the purchase of four additional aircraft, and internal project replanning.			
6	Air Force declared OC2 despite two minor MR2 deficiencies relating to spares (Fly Away Kit) and Operational Flight Trainer (pilot simulator) qualification. The Project Office is working to remediate these deficiencies.			
<div>Schedule Status at 30 June 2019</div> <div><div><div>Schedule Plan at Government Approval</div><div>Schedule Plan at 30 June 2019</div></div><div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>Approval</div></div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>IMR</div></div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>IOC</div></div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>FMR</div></div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>FOC</div></div></div></div>				
Note				
Forecast dates in Section 3 are excluded from the scope of the review.				

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none"> 4 x P-8A aircraft delivered to RAAF Edinburgh (EDN). 2 x MTOCs (previously delivered) in the following configurations: <ul style="list-style-type: none"> 1 x MTOC installed within Main Operating Base (MOB) temporary facility (not readily deployable). 1 x MTOC temporarily installed at Forward Operating Base (FOB) either within interim fixed facility or deployable shelters. 7 x trained aircrews. 3 x trained Mission Support System teams. 7 x trained maintenance teams. Delivery of spares, Ground Support Equipment (GSE) and Support and Test Equipment (S&TE) to support MOB and FOB operations. Publications to support supply, maintenance and operations for IOC. Network Connectivity between all delivered P-8A aircraft and Australian Single Information Environment. Delivery of Threshold Search and Rescue (SAR) store capability. <p>IMR was achieved in November 2017.</p>	Achieved
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> Delivery of 4 P-8A aircraft able to deliver up to 1,000hrs Flying Rate of Effort; Minimum of 4 mission capable crews in MISR missions Trained and authorised maintenance and support staff to conduct MOB and FOB (Darwin) operations Delivery of spares, GSE and S&TE to support MOB and FOB (Darwin) operations Delivery of 2 MTOCs: MOB and FOB (Darwin) with Single Information Environment (SIE) interface 	Achieved

	<ul style="list-style-type: none"> Established training arrangements in place to conduct ongoing transition, conversion and sustainment training Completion of Initial Operational Test & Evaluation (IOT&E) Award of Australian Military Type Certificate (AMTC) and Service Release <p>IOC achieved in January 2018.</p>	
Final Materiel Release (FMR)	<ul style="list-style-type: none"> 12 x P-8A aircraft delivered to EDN. All spares, GSE and S&TE to support the additional Rate of Effort (6,600 hours) at both MOB and FOB. One MTOC to be semi-permanently installed and operational in Darwin, totalling 3 MTOCs delivered and installed. Three Media Fly Away Kits delivered and interfaced with SIE sufficiently to allow organic deployment to non-MTOC supported bases. <p>FMR is expected to be achieved in June 2022.</p>	Not yet achieved
Final Operational Capability (FOC)	<ul style="list-style-type: none"> 12 x P-8A aircraft 3 x Fly Away Kit MTOC with SIE interface Support systems in place to enable the delivery of the full 6,600hrs of annual Flying Rate of Effort Additional spares to support 6,600hrs annual Flying Rate of Effort <p>FOC is expected to be achieved in June 2022.</p>	Not yet achieved
Note		

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
The Project identified schedule risks associated with the Mk 54 torpedo.	<ul style="list-style-type: none"> The Project is working collaboratively with the FMS case manager, the Capability Managers and the USN, to ensure the risk is avoided.
The Project identified schedule risks associated with the UNIPAC III (objective) Search and Rescue Kit.	<ul style="list-style-type: none"> The Project has increased resources to identify and assist with program remediation actions, including enhanced collaboration with supplier and working closely with USN to approve and deliver this capability. This risk has a low impact on capability as the interim Search and Rescue capability approved and is in place.
The project has identified a capability risk, in that the USN Interactive Electronic Technical Manuals (IETM) may not be integrated with Defence systems by required date.	<ul style="list-style-type: none"> This is no longer a risk due to the stand-alone IETM solution being introduced into service March 2019. The risk has been retired and will no longer be reported.
There is a chance that the HAAWC capability will be delivered post FMR leading to failure to achieve the MAA milestone.	<ul style="list-style-type: none"> The HAAWC capability has been de-linked from the FMR milestone. While this capability remains within the scope of AIR 7000 Phase 2, the Risk has been retired and will no longer be reported.
The ICT solutions established to provide Engineering and Maintenance support systems for ADF P-8A fleet, may be affected by COA projects external to AIR7000. This may affect the automated processing of data, crucial to the USN in providing Integrated Logistics Support to the ADF fleet.	<ul style="list-style-type: none"> COA agencies are using an alternate solution to transfer data; using manual methods. A Data Issue Working Group (DIWG) has been created to ensure the requirement within the Outstanding Phase 2 Cooperative ICT deliverables accurately reflect the USN requirements and therefore this risk is unlikely to be realised. The risk has been retired and will no longer be reported.
KC-30 AAR data may not releasable to Boeing, restricting the ability to implement the high fidelity simulation required in the aircraft flight simulator. This poses a risk to the effectiveness of aircrew training.	<ul style="list-style-type: none"> Data has been provided and aero modelling incorporated. The next upgrade is due to commence in July 2019 with testing to follow. Qualification activity in November 2019 will provide fidelity of simulated AAR capability.

Project Data Summary Sheets

Auditor-General Report No.19 2019–20
2018–19 Major Projects Report

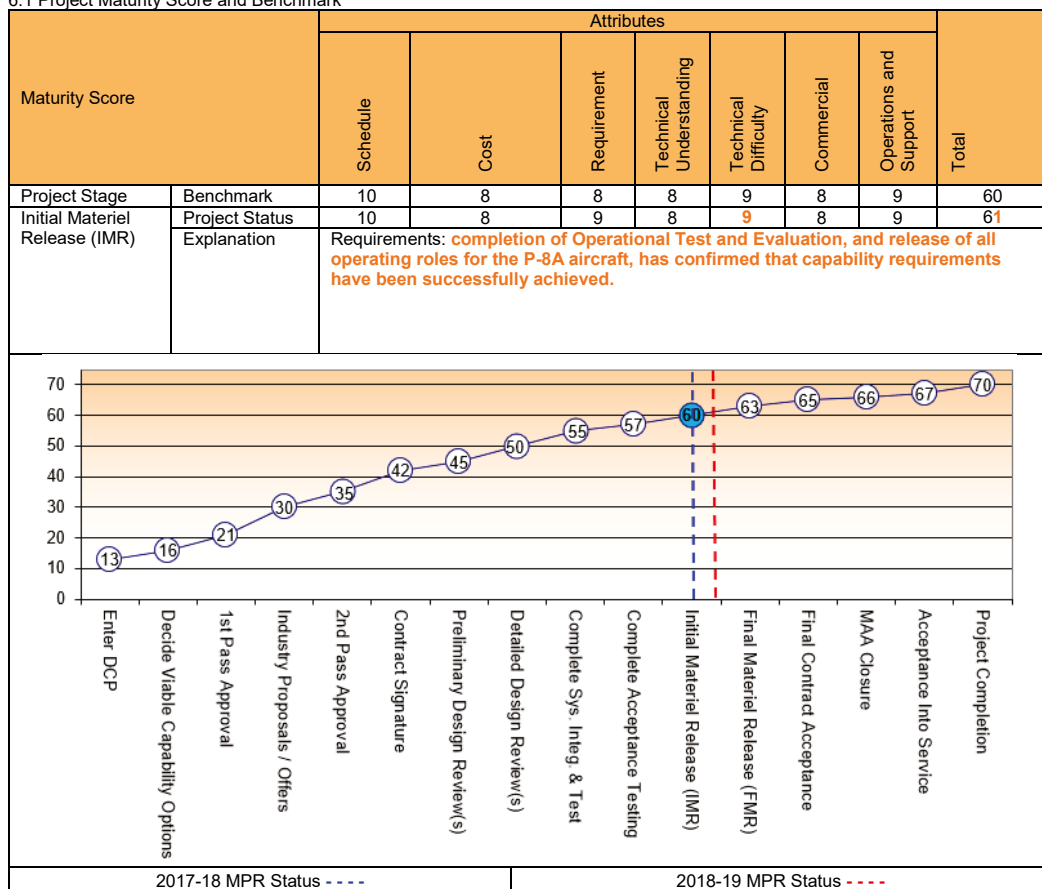
	<ul style="list-style-type: none"> • Risk has been downgraded to Low and will no longer be reported.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
Unexpected fatigue testing results. During a contracted Wing-Fuselage Full Scale Fatigue Test, Boeing discovered unexpected signs of structural fatigue. USN expect this to be a localized issue affecting a finite number of components that will likely require some additional maintenance or replacement during scheduled depot overhauls, but that would not be expected to have widespread consequences for P-8A fleet operations or fleet longevity.	<ul style="list-style-type: none"> • Ongoing engagement between Australian and USN subject matter experts to understand the causes of the unexpected signs of fatigue and a suitable Structural Management strategy. • Incorporation of an Operational Loads Monitoring System on aircraft eight scheduled for delivery in October 2018. • Issue has been transferred to Sustainment Management Unit and is being tracked by P-8A System Safety with risk communication and acceptance via an Airworthiness Issues Paper. • NAVAIR continue to investigate results from full scale fatigue test and implement appropriate inspections to ensure the integrity of the aircraft structure through life of type. • Aircraft Structural Integrity managers from Joint Program Office oversee NAVAIR's work and ensure Australia is included in any/all structural integrity programs for P-8A. • The issue will no longer be reported.
An issue has arisen in which the Operational Flight Trainer (OFT) cannot obtain the required Level D qualification.	<ul style="list-style-type: none"> • The Project Training Systems Management Plan (TSMP) did not predict a Level D OFT until PCU19/RAAF3 which is due for delivery in 2021. The issue has been retired and will no longer be reported. A new medium Risk has been raised to reflect the current assessment and manage resolution of the MR2 deficiency relating to OFT qualification.
Releasability of aircrew courseware has led to delays in the initial delivery. This is creating inefficiencies in the conduct of the in country training program, but did not delay the train systems in service date.	<ul style="list-style-type: none"> • Issue of courseware releasability has been resolved with USN, however will continue to be closely tracked to ensure future deliveries are complete and on time. The issue has been retired and will no longer be reported. A new medium Risk has been raised to focus on the coming upgrades.
ADF Integrated Logistics Support systems may not provide the depth of data required by the USN to allow for effective support to the ADF fleet.	<ul style="list-style-type: none"> • This is no longer an issue as the Logistics Engineering Maintenance Management System (LEMMS) component of the project is delivering the necessary data to the USN. The issue has been retired and will no longer be reported.
Directed Infra-Red Countermeasure (DIRCM) deficiency: The P-8A self-protection capability comprises multiple elements, which were installed and tested in December 2018. The DIRCM processor is required to allow full functionality, including missile detection and automatic flare dispensing. Currently, the DIRCM processor is not able to load a critical software file; this problem affects the global fleet.	<ul style="list-style-type: none"> • This Issue was resolved by the US Navy and accepted by Air Force in June 2019. The item will no longer be reported.
Fly Away Kit deficiency: The global supply chain for P-8A sustainment is still being refined, resulting in a global shortage of a number of spare parts and GSE.	<ul style="list-style-type: none"> • Minor deficiencies against the MR2 spares requirement are being actioned by the Joint Project Office. • This item is being managed as a Caveat.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
The signed PSFD MoU does not provide explicit detail on those activities which will be undertaken in the interests of both nations by the CP (paid for by shared funding) and those which are Australian unique (paid for in addition to the shared financial contribution). Clearer definition of this division in the MoU would have avoided the post-signature negotiation required to resolve this ambiguity.	Contract Management
The CP model has allowed Australia to work closely with the USN in the future requirements definition and planning for the P-8A. This has been to the significant mutual benefit of both the USN and Australia.	Requirements Management
Precision of description about what is included under the PSFD MoU.	Contract Management
Greater focus in regards to Australian Industry involvement within MoU.	Requirements Management
Scope of the MoU, does not contemplate other USN organisations (NAVSUP, SPAWAR). Consider how support from other US agencies can be assured.	Contract Management
Use of a US Cooperative Program contract support model should be used with caution, if the activity will be subcontracted primarily back to Australian Industry to support. Consider direction contract arrangements within Australia, with reachback to US CONUS OEM as required if IP, export and data support can be assured.	Contract Management
Airworthiness Certification of USN product may not meet Australian WHS requirements. Consider what SFARP approach needs to be taken when introducing into service.	Requirements Management
Export controls need to be closely monitored to ensure the articles receive appropriate Congressional approval in time for shipment, particularly for classified items.	Contract Management

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

When interfacing with US ICT organisations, it is very difficult to arrange access with the correct subject matter experts. Consider strong relationships under a cooperative program to ensure the right people are making decisions.	Requirements Management
Procurements through different parts of the USN organisation have different schedules and may take significantly longer than others. Ensure the contracting processes and timelines for the organisation conducting the contract management are well understood, before beginning the Procurement Process.	Contract Management
SATCOM connectivity and who pays for each segment is rarely clear. Ensure ownership of each data segment is well understood.	Requirements Management
SPAWAR manages a large number of components in the TOC across the USN, of which only a small number are needed for an aircraft platform. As a consequence, large numbers of "common" TOC components may be changed as part of a suite of TOC upgrades across the USN fleet, and rolled into what was a relatively minor air vehicle change. This may well hold up delivery of a new mission system software drop while awaiting the software regression testing to be complete on the overall configuration build change for the TOC.	Requirements Management
Consider co-location or moving of Acquisition Project staff to the Sustainment organisation as part of standing up the Sustainment Management Unit (SMU) . This will ensure a better flow of knowledge transfer and ownership of the history of a particular requirement. Co-location of the Project Office with the SMU in January 2019 has already yielded benefits in terms of information transfer and cooperation in capability delivery.	Resources
Ensure the transition plan is approved well in advance of the first aircraft delivery (12 months or more).	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE David Scheul
Program Director	Mr Nigel Linnett
Project Manager	WGCDR Andrew Marriott

Project Data Summary Sheet¹⁴²

Project Number	AIR 9000 Phase 2, 4 and 6
Project Name	MULTI-ROLE HELICOPTER
First Year Reported in the MPR	2008-09
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy and Chief of Army
Government 1st Pass Approval	Apr 06 (Phases 4 and 6)
Government 2nd Pass Approval	Aug 04 (Phase 2), Apr 06 (Phases 4 and 6)
Budget at 2 nd Pass Approval	\$3,522.8m
Total Approved Budget (Current)	\$3,771.1m
2018-19 Budget	\$133.7m
Project Stage	Initial Materiel Release
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The Multi-Role Helicopter (MRH) Program is a key component of the Australian Defence Force (ADF) Helicopter Strategic Master Plan that seeks to rationalise the number of helicopter types in ADF service. The MRH Program consists of three phases of AIR 9000. Phase 2 (12 helicopters) is the acquisition of an additional Squadron of troop lift aircraft for the Australian Army, Phase 4 (28 helicopters) will replace Army's Black Hawk helicopters in the Air Mobile and Special Operations roles, and Phase 6 (6 helicopters) will replace Royal Australian Navy (RAN) Sea King helicopters in the Maritime Support Helicopter role. All three phases are grouped under the AIR 9000 MRH Program.

1.2 Current Status

On 28 November 2011, the Minister for Defence announced this project as a Project of Concern.

Cost Performance

In-year

The project has spent **\$104.8m** against a budget of **\$133.7m to June 2019**. The **\$28.9m** underspend to **June 2019** is primarily due to net adjustments to payment phasings across the Prime Acquisition and reduced spend against contracts for other minor procurement requirements. The timing of the end of year payment processing centrally by Defence and positive spend on operating requirements contributes to the remaining variance.

Project Financial Assurance Statement

As at 30 June 2019, project AIR 9000 Phase 2, 4 & 6 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget, including contingency remaining for the project to complete against the agreed scope.

Contingency Statement

The project has applied contingency in the financial year primarily for the treatment of various supportability and performance risks such as a replacement Mission Management System (including engineering support, MRH Mission Data Converter (MDC) and Mission Planning Component (MPC)), Eurogrid Preparation and Loading Facility (EPLF), Mini Gun system, Aeromedical Evacuation Mature System (Phase 1), replacement Cargo Hooks, Helicopter Aircrew Respiratory System (HARS), ISU Containers, additional C17 Transportation kits, Heavy Stores Carriers (HSCs) and External Auxiliary Fuel Tanks (EAFTs) Packaging, Flare Separation Modelling, Taipan Gun Mount Government Furnished Equipment and Skilled Workforce. The application of Contingency is directly in support of the transition of the MRH90 into 6Avn Regt.

142 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

Schedule Performance

As a result of the Deed 2 negotiations with the contractor, the final delivery of aircraft was rescheduled to July 2017; this, and ongoing technical deficiencies, have resulted in delays to the Final Materiel Release (FMR) and Final Operational Capability (FOC) milestones. However, a number of capability milestones have been declared, including Army Initial Operational Capability (IOC) in December 2014, Navy IOC in February 2015, first Operational Capability Land (OCL1) in September 2015, second and third Operational Capability Amphibious (OCA2/3) in December 2015, the second Operational Capability Land (OCL2) in March 2016 and the third Operational Capability Land (OCL3) in February 2018. The FMR and FOC dates **have been updated to June 2021 and December 2021** to support a revised Materiel Acquisition Agreement.

Forty-seven aircraft have been accepted into service with the final aircraft accepted in July 2017. The first thirteen aircraft required an in-service retrofit to bring them up to the full Phase 2, 4 & 6 capability baseline with the final retrofit completed in March 2016.

Both Full Flight Mission Simulators have been accepted (the first in August 2013 and the second in October 2014).

Remediation to rectify concerns regarding configuration management issues of production aircraft slowed the acceptance of production aircraft in 2015, this in turn slowed the rate of capability growth.

The Chief of Army delayed the introduction of MRH90 into 6Avn Regt by 3 years, because of reliability and design shortfalls and subsequently extended the Black Hawk fleet to 2022 to mitigate the risk to capability. The delayed introduction to 6th Avn Regt resulted in the growth in total MRH90 flying hours temporarily stabilised below the planned mature rate.

In September 2017, Chief of Army's Senior Advisory Committee (CASAC) endorsed and CA agreed to continue the transition of MRH90 into 6Avn Regt **which commenced in January 2019 and will conclude with the withdrawal of the Black Hawk helicopters and 6Avn Regt taking on full Special Operations capability by the end of 2021.**

Materiel Capability Delivery Performance

Following achievement of In-Service Date (ISD) with agreed partial achievement of the contracted MRH capabilities, there has been significant work by both Industry and the Commonwealth to define and implement a series of capability block enhancements to bring the MRH90 to contracted standards. This included a retrofit program to progressively bring all aircraft up to the contracted standard. **FMR has been reviewed and is now forecast to be achieved in June 2021** as the technical and supportability issues are resolved to meet the final operational capability. **At this time it is expected that FMR will include the transfer of Project funding and contract management responsibilities concerning the completion of the remaining long lead time acquisition activities for Aero Medical Evacuation Equipment (AMEE) and an Aircraft Maintenance Trainer (AMT) to the Army Aviation System Program Office (AASPO)**

MRH achieved 90.3% of its planned 2018/19 Financial Year Rate Of Effort. This represents hours actually flown, compared to planned flying hours. Any achievement above 90% is considered "green performance".

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Additional Troop Lift project was first foreshadowed in the Defence White Paper 2000.

The MRH Program consists of Phases 2, 4 & 6. Phase 2 was approved initially, providing 12 additional Troop Lift helicopters for Army. Phases 4 & 6 were approved subsequently with Phase 4 which provided 28 helicopters as the replacement of the Australian Army's fleet of 34 S-70A-9 Black Hawk helicopters, again for troop lift capability, and Phase 6 provided six helicopters as the replacement of the RAN's fleet of six Sea King helicopters, providing maritime support capability for Navy. The delivery of a 47th MRH90 was negotiated as part of Deed 2. This enables the use of one airframe as a Ground Training Device without impacting the operational fleet.

In total, the AIR 9000 MRH Program will acquire 47 MRH90 aircraft and support systems. Support capabilities, such as Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, will be acquired along with training systems and in-service support.

The Phase 2 Acquisition Contract was signed with Airbus Australia Pacific (Airbus AP) in June 2005 with the subsequent Sustainment and Program Agreement contracts signed in July 2005.

In November 2005 the Defence Capability and Investment Committee agreed that the way forward was to seek a combined first and second pass approval for both Phases 4 and 6 as part of a single approval process.

Cabinet endorsement was gained in April 2006 in a combined first and second pass process for Phase 4 and Phase 6. The agreed method of procurement, a two stage Contract Change Proposal (CCP), resulted in the execution of options contained in the Program Agreement for the procurement of additional aircraft approved under Phases 4 and 6. Initial CCPs for the Acquisition, Sustainment and Program Agreement Contracts were signed in June 2006.

The three AIR 9000 Phase 2, 4 & 6 contracts (Program Agreement Contract, Acquisition Contract and Sustainment Contract) incorporate the above CCPs. On acceptance of two MRH90, appropriate training, maintenance and supply support, an In-Service Date of December 2007 was achieved with aircraft operating under a Special Flight Permit granted by the Chief of Air Force. This triggered the Sustainment Contract to come into effect and all three contracts are now currently active.

The Commonwealth suspended acceptance of aircraft from Airbus AP in November 2010; deliveries recommenced in November 2011 after negotiations of a remediation plan (Deed of Agreement and CCPs) to address a number of engineering and reliability issues. Concurrent with the recommencement of aircraft acceptance in November 2011, the Minister for Defence announced that the project would be listed as a Project of Concern citing schedule, aircraft technical deficiencies and Airbus AP's performance.

The Commonwealth has conducted negotiations with the prime contractor to review and settle commercial, technical and schedule issues resulting in a variation to the original contract signed on 9 May 2013, which has been termed 'Deed 2'. Deed 2, which came into effect on 1 July 2013 re-baselined the delivery schedule and addressed commercial and technical issues.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

<p>Uniqueness</p> <p>The MRH90 aircraft is based upon the German Army variant of the NH90 Troop Transport Helicopter. The MRH90 design uses well established aerospace technologies, but will introduce new technologies into Army and Navy, primarily in the areas of composite structure, helmet mounted sight and display and fly-by-wire flight control systems.</p> <p>The MRH Program is providing an MRH90 capability to two main users - Army and Navy. The capability delivery complexity this introduces has been mitigated through an agreement between Chief of Army and Chief of Navy. This provides the project with a single interface for introduction into service issues.</p> <p>The MRH Program Office Design Acceptance Strategy is dependent upon the French Military Airworthiness Authority's (Direction Générale de l'Armement (DGA)) prior acceptance of the NH90 variants and certification recommendation for the MRH90. The DGA and other National Qualification Organisations' prior acceptance of European NH90s provide confidence for the ADF to leverage off common certification evidence for the MRH90.</p>
<p>Major Risks and Issues</p> <p>Aircraft system lack of maturity has affected the certification schedule of the MRH90 and subsequently the declaration of capability milestones.</p> <p>Risks and issues include the need for additional spares, the designs of the Cargo Hook, Fast Roping and Rappelling, and self-protection weapons systems, and required upgrades to facilities are being managed within the Project. The Ground Mission Management System has experienced incompatibility and integration issues. Issues with the Flight Mission simulator and delays to FMR are either retired or being remediated through the sustainment organisation.</p> <p>The remediation of the deficiencies and issues through replacement or re-design, will draw upon significant engineering, logistic and commercial resources and will therefore form the critical path toward achieving the Final Materiel Release and enable the introduction of the MRH90 into 6Avn Regt.</p> <p>There is a risk that the project may not be able to retain sufficient levels of experienced and skilled manpower to achieve the required rate of Acquisition deliverables. In addition, there is also a risk that Industry may not be able to retain sufficient workforce, prior to Acquisition Project closure, to sustain the timely delivery of the remaining capability elements.</p>
<p>Other Current Related Projects/Phases</p> <p>AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS): HATS will be an important link in the training continuum for inductees to the MRH 90 training system.</p> <p>AIR 9000 Phase 8 Future Naval Aviation Combat System: The acquisition of 24 helicopters to enable the Navy to deploy at least eight Seahawks embarked at sea across the ANZAC class frigates and the new Hobart class Air Warfare Destroyers.</p> <p>AIR 90 Identification Friend or Foe (IFF): AIR 90 will upgrade the MRH90 to the Mode 5 IFF waveform to maintain interoperability with US and NATO secure combat identification systems.</p>
<p>Note</p> <p>Major risks and issues are excluded from the scope of the review.</p>

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Apr 04	Original Approved	3.3	1
Aug 04	Government Second Pass Approval (Phase 2)	953.9	
Jun 06	Real Variation – Scope (Second Pass Phase 4 and 6)	2,565.6	2
	Total at Second Pass Approval	3,522.8	
Oct 06	Real Variation – Transfer	(219.0)	3
Oct 08	Real Variation – Transfer	(20.0)	4
Oct 08	Real Variation – Scope	31.5	5
Sep 17	Real Variation – Budgetary Adjustment	(87.4)	6
Nov 18	Real Variation - Transfer	(0.2)	10
		(295.1)	
Jul 10	Price Indexation	679.8	7
Jun 19	Exchange Variation	(136.4)	
Jun 19	Total Budget	3,771.1	
	Project Expenditure		
Prior to Jul 18	Contract expenditure – Airbus AP	(2,688.1)	
	Contract expenditure – CAE Australia	(172.0)	
	Contract expenditure - Leonardo Helicopters	(3.9)	
	Other Contract Payments / Internal Expenses	(247.2)	8
		(3,111.2)	
FY to Jun 19	Contract expenditure – Airbus AP	(56.5)	

	Contract expenditure – CAE Australia	(4.6)	
	Contract Expenditure – Leonardo Helicopters	(6.4)	
	Other Contract Payments / Internal Expenses	(37.3)	9
		(104.8)	
Jun 19	Total Expenditure	(3,216.0)	
Jun 19	Remaining Budget	555.1	
Notes			
1	This project's original budget amount is that prior to achieving Second Pass Government Approval.		
2	Incorporation of AIR 9000 Phase 4 (Black Hawk Upgrade/Replacement) and AIR 9000 Phase 6 (Maritime Support Helicopter).		
3	The funding related to facilities elements of the project was managed by Defence Estate and Infrastructure Group (DE&IG).		
4	Transfer to DE&IG for Facilities Infrastructure.		
5	Real Cost Increase funding for Full Flight Mission Simulator.		
6	Real Variation for Budget Adjustment (\$87.4m). This was offset and corrected by CFO by a subsequent Exchange Adjustment in the BORIS Bi-Annual update.		
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$556.1m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$123.7m having been applied to the remaining life of the project.		
8	Other expenditure: \$247.2m for operating expenditure, contractors, consultants, and other capital expenditure not attributable to the aforementioned contracts.		
9	Other expenditure: \$37.3m which includes \$30.1m for capability re-design expenditure, \$5.1m for contractors and consultants, \$1.1m for other capital expenditure not attributable to the aforementioned contracts, \$0.9m for operating expenditure and \$0.016m for GFM freight costs.		
10	Budget transfer to DE&IG of \$0.201m for temporary amenities at 6 Aviation Regiment		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
185.5	147.7	133.7	The variation reflects the re-prioritisation of delivery of key capabilities to support integration of MRH90 into 6 Avn Regt, with non-essential elements being delayed. The variance between PAES and Final Plan estimates primarily reflects the reprogramming of capability funding and a net foreign exchange funding decrease.
Variance \$m	(37.8)	(14.0)	Total Variance (\$m): (51.8)
Variance %	(20.4)	(9.5)	Total Variance (%): (27.9)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(29.8)	Australian Industry	The \$28.9m underspend reflects the delayed release of cash payments at year end, net adjustments to payment phasings across the Prime Acquisition Contract, and against contracts for other minor procurement requirements. Positive spend on operating requirements contributes to the remaining variance.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
		0.9	Effort in Support of Operations	
			Additional Government Approvals	
133.7	104.8	(28.9)	Total Variance	
		(21.6)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Airbus AP	Jun 05	846.3	2,945.2	VARIABLE	ASDEFCON (Strategic)	1, 2, 3, 4
CAE Australia	Dec 07	180.5	176.5	VARIABLE	ASDEFCON (Complex)	4, 5
Leonardo Helicopters	Apr 18	16.3	16.7	VARIABLE	Deed	4, 6
Notes						

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

1	This contract also includes an Electronic Warfare Self Protection Support System, MRH Software Support System, MRH Instrumented System and 23 Ground Mission Management System (GMMS) (4 Fixed GMMS, 7 Deployable GMMS, 1 Reduced, 9 Light and 2 Interim GMMS). Contract Base date is January 2004.			
2	The MRH Instrumented System includes an airborne instrumentation pallet, some ground based instrumentation and three aircraft (from the total fleet of 47) that have provisions to have the instrumentation pallet installed.			
3	The increase from the original contract value is predominantly due to the increase in aircraft ordered and associated systems following government approved scope changes as described in Section 1.3. Since 1 July 2018, there have been key CCPs processed for an Aeromedical Evacuation Mature System (Phase 1), replacement Cargo Hooks and Heavy Stores Carriers (HSCs) and External Auxiliary Fuel Tanks (EAFTs) Packaging.			
4	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).			
5	The Commonwealth conducted negotiations with the Contractor, to review and settle commercial and technical issues, in December 2015.			
6	The Commonwealth entered into contract with Leonardo Helicopters for the establishment of a helicopter transmission repair and overhaul facility.			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 19		
Airbus AP	12	47	MRH90 Aircraft	1
CAE Australia	2	2	Full Flight and Mission Simulator	
Leonardo Helicopters	N/A	N/A	Repair and overhaul capability for helicopter transmission, including a repair facility, initial spares, personnel costs, and cargo pallets.	
Major equipment received and quantities to 30 Jun 18				
Forty-seven MRH aircraft have been accepted to date. Both Full Flight Mission Simulators have been accepted by the Commonwealth.				
Notes				
1	The delivery of a 47th MRH90 was negotiated as part of Deed 2. This enables the use of one airframe as a Ground Training Device without impacting the operational fleet.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MRH aircraft - Phase 2	Aug 05	Oct 05	Sep 05	1	1
	MRH aircraft - Phase 4/6	Apr 07	Apr 07	May 07	1	1
	MRH Software Support Centre	N/A	Mar 07	Apr 07	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 05	N/A	
	Ground based Mission planning and Management System	Oct 05	Oct 05	Feb 07	16	2
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	May 08	Nov 08	Mar 09	9	3
System Design	Full Flight and Mission Simulators	Oct 08	Mar 09	Jun 09	8	3
Preliminary Design	MRH aircraft - Phase 2	Jan 06	Jan 06	Apr 06	3	
	MRH aircraft - Phase 4/6	N/A	N/A	Jun 08	N/A	
	MRH Software Support Centre	N/A	Jun 07	Jun 07	0	
	Electronic Warfare Self Protection Support System	Mar 06	Mar 06	May 06	2	
	Ground based Mission planning and Management System	Jul 06	Apr 07	Jun 07	11	2
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	Feb 09	Sep 09	Oct 09	8	3
Critical Design	MRH aircraft - Phase 2	May 06	May 06	Jun 06	1	
	MRH aircraft - Phase 4/6	Aug 08	N/A	Oct 08	2	
	MRH Software Support Centre	N/A	Oct 07	Sep 07	(1)	
	Electronic Warfare Self Protection Support System	Sep 06	Sep 06	Oct 06	1	
	Ground based Mission planning and Management System	Nov 06	Nov 07	Jul 08	20	2
	MRH Instrumented System	N/A	Jun 08	Jun 08	0	
	Full Flight and Mission Simulators	Aug 09	Feb 10	Apr 10	6	3
Notes						

1	Delays in the Systems Engineering process have resulted from the more developmental nature of the aircraft system, with the MRH90 variant being unique in some ways.
2	Ground Mission Management System software delays are directly attributable to aircraft schedule delivery slip.
3	Full Flight Mission Simulators design review delays stem primarily from slow Contractor derivation of requirements into a suitable System and Subsystem Specification. This was compounded by delays in the prime contractor establishing a vital subcontract with the aircraft manufacturer.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRH aircraft - Phase 2	Jul 06	Nov 06	Dec 06	5	
	MRH aircraft - Phase 4/6	N/A	N/A	N/A	N/A	1
	MRH Software Support Centre	N/A	Oct 08	Nov 08	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 07	N/A	
	Ground based Mission planning and Management System	N/A	N/A	N/A	N/A	2
	MRH Instrumented System	Nov 08	May 09	Dec 09	13	3
	Full Flight and Mission Simulators	Jun 11	Sept 11	Sept 11	4	4
Acceptance	Type Acceptance Review Special Flight Permit 1	Oct 07	N/A	Dec 07	2	5
	Australian Military Type Certificate	Dec 08	Dec 10	Apr 13	52	6
	Full Flight and Mission Simulator #1	Jul 12	Aug 13	Aug 13	13	7
	Full Flight and Mission Simulator #2	Jan 13	Oct 14	Oct 14	21	7
	Ground based Mission planning and Management System Lot 1	Feb 09	Sep 09	Dec 09	10	8
	Ground Mission planning and Management System Lot 2	Feb 09	Dec 09	Apr 10	14	8
	Ground Mission planning and Management System Lot 3	Sep10	Sep10	Mar 13	30	8
	MRH Software Support Centre	Feb 09	Feb 09	Dec 08	(2)	
	Electronic Warfare Self Protection Support System	Dec 07	Dec 07	Dec 07	0	
	MRH Instrumented System	Mar 10	Jun 10	Sept 11	18	9
	MRH aircraft #01 (First aircraft)	Dec 07	N/A	Dec 07	0	
	MRH aircraft #05 (First Australian built aircraft)	Dec 08	N/A	Dec 08	0	
Aircraft Acceptance	MRH aircraft #46	Jul 14	Jun 17	Jun 17	35	10
	MRH aircraft #47 (Final Aircraft)	Jul 17	Jul 17	Jul 17	0	
Notes						
1	Phases 4/6 were rolled into the MRH Program from aircraft 13 onwards, which increased the number of aircraft from 12 to 46.					
2	The acceptance and test-readiness of the Ground Mission Management System (GMMS) was broken into six lots post contract signature. The lots compose of GMMS deliverables that have been aligned to aircraft delivery – location and baseline. The acceptance of GMMS lots are listed in the acceptance area of this table.					
3	The 13 month delay to closure of Test Readiness Review was due to electronic compatibility test design issues not resolved until November 2009. This delay was mitigated by the development of an interim MRH Instrumentation System capability used for a test activity in October 2009.					
4	Achieved through completion of Test Readiness Review for Contractor In-Plant Test and Evaluation in September 2011.					
5	The first Airworthiness Board (for a Special Flight Permit (SFP)) was conducted in November 2007 and a SFP was granted in December 2007. There have been a number of SFP extensions to allow flight trials of the aircraft as it further develops. The most recent SFP was granted in December 2012 and expired in April 2013.					
6	Achievement of the Australian Military Type Certificate proved problematic due to technical and reliability issues, leading to insufficient levels of the Rate of Effort. Rate of Effort was required to validate that in-service support arrangements for the fleet are sufficient to cope with current numbers of aircraft and are growing in maturity to meet fleet requirements. Australian Military Type Certificate and Service Release was achieved 17 April 2013.					
7	Refers to acceptance of Full Flight Mission Simulators in Oakey and Townsville. Delays have been incurred due to the late delivery of facilities and an underestimation of the time required to implement the design.					
8	Lot 1, 2 and 3 have been altered to accommodate the variation in aircraft delivery date and configuration.					

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

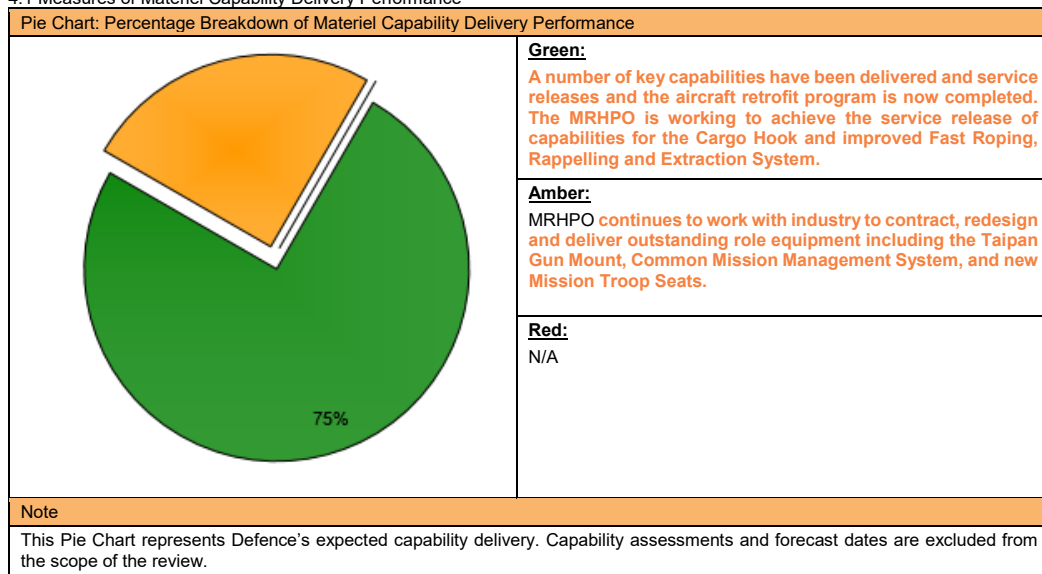
9	The MRH instrumented system incurred delays due to technical and supportability issues that resulted in contractual non-conformances. These non-conformances were rectified by September 2011.
10	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and contractual issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on Airbus AP's agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with aircraft #46 accepted in June 2017 and the final aircraft (#47) accepted in July 2017.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Notes	
Initial Materiel Release (IMR)		Jun 10	May 13	35	1	
Initial Operational Capability (IOC)		Navy	Jul 10	Feb 15	55	2
		Army	Apr 11	Dec 14	44	3
Final Materiel Release (FMR)		Army/Navy	Oct 14	Jun 21	80	4
Final Operational Capability (FOC)		Navy	Dec 12	-	-	5
		Army	Jul 14	Dec 21	89	4,5
Notes						
1	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. This has impacted the achievement of capability milestones. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on Airbus AP's agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the final aircraft (#47) accepted in July 17. IMR was declared on 13 May 2013, based on 6 Product Baseline 003 aircraft.					
2	Affected by delays to IMR. (Refer to Note 1 above)					
3	Affected by delays to IMR. (Refer to Note 1 above)					
4	Dates directly impacted by delay to IMR. (Refer to Note 1 above). The remediation of technical deficiencies and issues through replacement or re-design will draw upon significant engineering, logistic and commercial resources and will therefore form the critical path toward achieving FMR. The FMR and FOC dates have been reviewed to reflect this .					
5	FOC is now only forecast as a single date. The last capability subset is to be realised by Army as Operational Capability Special Operations 2 (OCS2) in November 2021, which is expected to trigger FOC.					
Schedule Status at 30 June 2019						
<div><div><div>Schedule Plan at Government Approval</div><div>IMR/FMR introduced in FY 2010-11</div><div>Schedule Plan at 30 June 2019</div></div><div><p>The Gantt chart illustrates the timeline for key milestones. The 'Schedule Plan at Government Approval' bar spans from Jun-04 to Jun-14, with a green segment (IOC) from Jun-10 to Jun-11 and a red segment (FOC) at Jun-14. The 'IMR/FMR introduced in FY 2010-11' bar spans from Jun-04 to Jun-14, with a blue segment (IMR) from Jun-10 to Jun-11 and an orange segment (FMR) at Jun-14. The 'Schedule Plan at 30 June 2019' bar spans from Jun-04 to Jun-21, with a blue segment (IMR) from Jun-10 to Jun-11, a green segment (IOC) from Jun-11 to Jun-14, and a red segment (FOC) at Jun-21.</p></div></div>						
Note						
Forecast dates in Section 3 are excluded from the scope of the review.						

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ol style="list-style-type: none"> Six Product Baseline 003 aircraft with associated role equipment to support Initial Operational Capability milestones; Issue of Australian Military Type Certificate and Service Release; Completion of all MRH90 facilities at Townsville, Oakey and Nowra; Establishment of mature planned contractor support to maintenance and logistics; and Provision and certification of Mission Management systems necessary for Initial Operational Capability milestones. 	Achieved
Initial Operational Capability (IOC)	<p>Initial Materiel Release was achieved in May 2013.</p> <ol style="list-style-type: none"> Achievement of Operational Capability Maritime Support 1 (OCM1) – embarkment of a single flight for limited daytime operations. Achievement of Operational Capability Amphibious 1 (OCA1) Milestones – deployment of a single troop (three aircraft) in a permissive environment. <p>Initial Operational Capability was achieved in Army – December 2014 and Navy - February 2015.</p>	Achieved
Final Materiel Release (FMR)	<ol style="list-style-type: none"> Forty-seven aircraft configured to the contractual baseline including configuration amendments specified in Deeds 1 and 2 (one aircraft to be used as a Maintenance Training Device); Role equipment delivered to support aircraft. Role equipment completion criteria is to include the transfer of Project funding and contract management responsibilities concerning the completion of the remaining long lead time acquisition activities for Aeromedical Evacuation Equipment (AMEE) to the Army Aviation System Program Office (AASPO); A mature sustainment organisation capable of discharging all in-service responsibilities; including logistic and training requirements; 	Not yet achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	<p>4. Mature training system with all training devices accepted, supported by an effective, functioning training organisation. Training completion criteria to include the transfer of Project funding and contract management responsibilities concerning the completion of the remaining long lead time acquisition activities for an additional Aircraft Maintenance Trainer (AMT) to AASPO; and</p> <p>5. All facilities and support equipment, required to support the capabilities accepted.</p> <p>FMR is forecast to be achieved in June 2021.</p>	
Final Operational Capability (FOC)	<p>FOC is expected to be declared on achievement of all Operational Capability Milestones providing the following capabilities.</p> <ol style="list-style-type: none"> 1. Operational Capability Maritime (OCM3) - Three embarked flights 2. Operational Capability Land (OCL3) - Two Airmobile Squadrons 3. Operational Capability Amphibious (OCA4) - One Squadron capable of supporting amphibious operations 4. Operational Capability Special Operations Support (OCS2) - one Special Operations Aviation Task Unit. <p>Final Operational Capability is forecasted to be achieved in December 2021.</p>	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

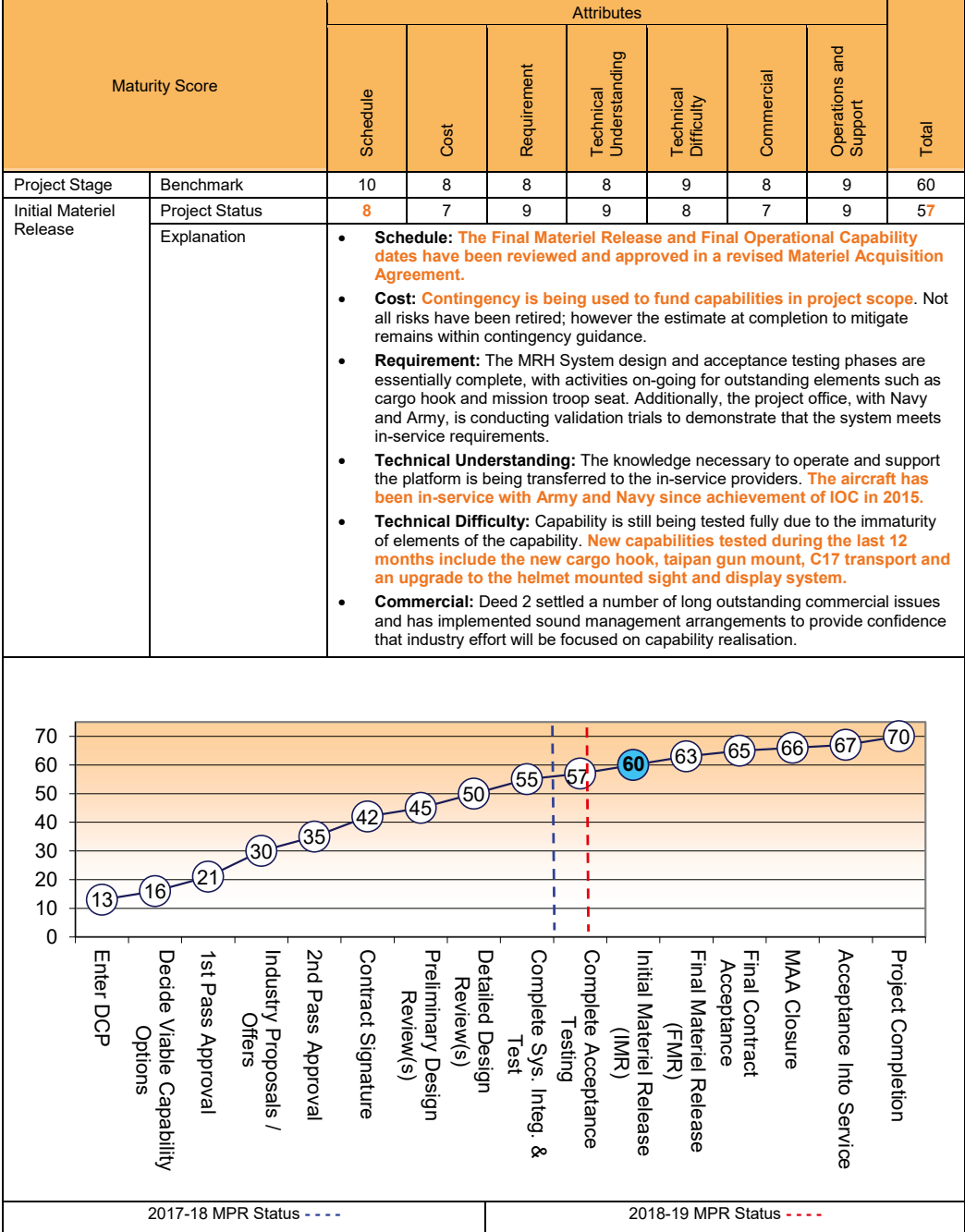
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the MRH90 capability transition into 6Avn Regt will be affected by delays in delivery of key capability and role equipment leading to a delay of MRH90 transition and extension of Black Hawk for 6Avn Regt operations.	<ol style="list-style-type: none"> 1. Form 6Avn Integrated Project Team. 2. Monitor delivery of key capabilities. 3. Mitigate delays including through Industry collaboration. 4. Implement solution for each deliverable.
There is a risk that the MRH Program may not be able to retain sufficient levels of experienced and skilled manpower to achieve the required rate of Acquisition deliverables leading to an impact on schedule and capability.	<ol style="list-style-type: none"> 1. Early identification of staff transition and turnover. 2. Detailed succession planning. 3. Early engagement with Army and Royal Australian Air Force posting Directorates and CASG, to identify solutions. 4. Identify areas where contracted workforce can supplement where applicable.
There is a risk that Industry may not be able to retain sufficient workforce, prior to Acquisition Project closure, to sustain the timely delivery of the remaining capability elements.	<ol style="list-style-type: none"> 1. Apply provisions of the contract to incentivise delivery to the schedule. 2. Actively engage Industry and scrutinise performance against product delivery through the following forums: <ol style="list-style-type: none"> a. Schedule Review b. Project Executive Meetings c. Project Management Review d. Weapons Systems Working Group e. Project Management Stakeholder Group
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
There is a chance that additional spares are required to support Fast Roping and Rappelling Extraction System (FRRES).	<ol style="list-style-type: none"> 1. Monitor actual damage and failure data over the next 18 months while the FRRES system is being phased in, to determine supportability requirements. 2. At the end of the 18 Month period, or when sufficient actual failure data is accrued to determine realistic support requirements, appropriate types and quantities of spare will be procured for effective support of the FRRES equipment.

5.2 Major Project Issues

Description	Remedial Action
The Full Flight Mission Simulator configuration alignment with the MRH90 aircraft has been affected by the length of time required to upgrade to Sustainment Software Build 1.1.	1. This issue has been transferred to the sustainment organisation. Software upgrades including Sustainment Software Build 1.1 to maintain alignment with the MRH90 aircraft are being delivered under the sustainment contract.
The Electronic Warfare Self Protection (EWSP) system is not performing to specification during specific aircraft manoeuvres.	1. This issue has been closed due to a report being presented which has alleviated performance concerns.
The current Cargo Hook Design is incompatible with Australian Defence Equipment which will delay the final solution delivery.	1. Contract for the design and production of a new Cargo Hook 2. Qualify and test the Cargo hook DASA Design Acceptance Following NQO Review - NLT - 1.5 Weeks to complete from 22 May. 3. MRHPO and Industry to work together to achieve service release by Sep 2019.
The Fast Roping and Rappelling is not suitable which has affected the achievement of operational capability leading to an impact to schedule and performance.	1. Interim Fast Roping and Rappelling System has been design accepted and service release has been achieved. 2. Identify design options for enduring solution. 3. Contract for enduring solution. 4. Implement enduring solution - FRRES.
The achievement of the FMR has been delayed by the late delivery of supplies according to the contracted schedule, leading to an impact on cost, schedule and performance	1. Formation of Cabin Integration Working Group; 2. Industry Prototyping; 3. Accept incremental improvements; 4. Use of Liquidated Damages as offset 5. Leverage NATO Helicopters 90 (NH90) community solutions A new MAA has formally approved a re-baselined FMR.
The initial AME solution is not suitable for high care or multiple extractions which will delay the final solution delivery schedule.	1. Formation of Aero-Medical Evacuation capability working group. 2. Develop and agree on the functional requirements specification with Commonwealth stakeholders and Industry. 3. Implement agreed solution.
Existing helicopter support facilities will require modification or upgrade to accommodate the MRH90.	1. Confirm requirements in accordance with Business Case for 6 Avn
The current design of the self-protection weapons system is not meeting capability requirements.	1. Refurbishment of armouries 2. Maintenance Training for Armourers on M134 3. Deployable packaging (Pelican cases) from M134 OEM (Dillon) 4. Additional Workforce funding for Item Manager 5. Additional spares and S&TE.
The existing Ground Mission Management System (GMMS) is not suitable for integration with the ADF mandated Joint Mission Planning System (JMPS) leading to an impact on MRH90 operational performance.	1. Formation of user working group. 2. Develop and agree on options to meet capability requirements. 3. Implement agreed solution. 4. Contracts for enduring solution are in place.
The Enhanced MRH Armament Sub-System (EMAS) is incompatible with an introduced weapon leading to an impact on operational performance and delivery schedule	1. Implement interim capability. 2. Identify design options for enduring solution for both Navy and Army. 3. Contract for enduring solution. 4. Implement enduring solution - Taipan Gun Mount.
Existing packaging for some equipment has been identified as unsuitable for deployment, due to rapid deterioration and excessive size and weight.	1. CCP-176 provides bespoke packaging to provide a lightweight packaging for safe manual handling (open crates) and fully enclosed containers against extreme environmental conditions. 2. Personnel have been trained in manual handling procedures and provided with equipment to manage the weight of existing packaging
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Early establishment of the Sustainment organisations. Both Commonwealth and Industry teams need to be set up well in advance of the first of the deliveries. The provision of accepted aircraft to an Operational Squadron has led to a range of lessons in regard to command and control of assets and people, stakeholder management and the relationship with Industry.	Resourcing
The impact of attaining limited Intellectual Property rights has been critical to the ongoing development of the capability and achievement of value for money in further contract negotiations. It has also limited the provision of data for integration with other platforms (such as the Landing Helicopter Dock ships).	Contract Management
The MRH Program was incorrectly viewed as a Military off-the-Shelf (MOTS) acquisition. Lessons associated with intended MOTS procurements include: that it is essential that the maturity of any offered product be clearly assessed and understood; and that elements of a chosen off-the-shelf solution may not meet the user requirement.	Off-the-shelf Equipment
Better arrangements should be put in place to ensure appropriate considerations of contractor performance occur before the Commonwealth enters into similar contracts with the same contractor.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Mr Shane Fairweather
Branch Head	BRIG Jeremy King
Project Director	Mr Andrew Thomas (acting)
Project Manager	Mr Kieran Gahan

Project Data Summary Sheet¹⁴³

Project Number	SEA 1180 Phase 1
Project Name	OFFSHORE PATROL VESSEL
First Year Reported in the MPR	2018-19
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Apr 16
Government 2nd Pass Approval	Nov 17
Budget at 2 nd Pass Approval	\$3,639.1m
Total Approved Budget (Current)	\$3,724.3m
2018–19 Budget	\$210.0m
Project Stage	Preliminary Design Review
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

Project SEA 1180 Phase 1 Offshore Patrol Vessel (OPV) will acquire 12 new vessels based on an existing design, to replace and improve upon the capability delivered by the 13 Armidale Class Patrol Boats (ACPB). The primary role of the SEA 1180 Phase 1 OPV will be maritime patrol and response operations in support of the National Civil Surveillance Program (NCSP) in order to contribute to protecting Australia's territory, territorial seas, and Economic Exclusion Zone (EEZ) (Constabulary Tasks). In addition to the 12 OPVs the Project will acquire, through a separate contract, the sea boats for the vessels. These consist of two Rigid Hull Inflatable Boats and one Rapid Intercept Craft for each OPV.

1.2 Current Status

Cost Performance

In-year

The project achieved \$203.6m spend out of \$210.0m budget. The EOFY variance is a result of Government Furnished Equipment (GFE) and project office cost reductions and variations in escalation costs and a re-phased contracted payment milestone amount (\$10.0m). This underspend has largely been offset by the early achievement of commencing construction of the second Offshore Patrol Vessel (OPV).

Project Financial Assurance Statement

As at 30 June 2019, project SEA 1180 Phase 1 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the Financial Year.

Schedule Performance

The Project achieved Second Pass Government approval on 24 November 2017 and contract signature with Luerssen Australia on schedule on 31 January 2018. An intensive design review program has been conducted and the project commenced construction of the first Offshore Patrol Vessel in South Australia in November 2018 on schedule. A Whole of Ship Design Review is being added to the program for late 2019. The Project is on track to achieve the Initial Materiel Release (IMR) and Final Materiel Release (FMR) milestones.

Materiel Capability Delivery Performance

The project is on schedule to deliver 12 Offshore Patrol Vessels.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

143 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

1.3 Project Context

<p>Background</p> <p>The SEA 1180 Phase 1 Offshore Patrol Vessel (OPV) Project will acquire 12 OPVs to replace the existing Armidale Class Patrol Boats (ACPB). The primary role of the Arafura OPV is constabulary operations and each ship will carry two crane launched 8.5m Rigid Hull Inflatable Boats (RHIB) and one 10.5m Rapid Intercept Craft (RIC) launched via the stern of the vessel.</p> <p>In August 2015, the Government announced that SEA 1180 Phase 1 would become part of the continuous naval shipbuilding program and brought forward the construction of the OPV by two years to enable the start of the naval shipbuilding program by 2018.</p> <p>In September 2015, the Government approved funding for the commencement of the Competitive Evaluation Process (CEP) for SEA1180 Phase 1. Interim Pass Project Approval was provided by Government in November 2015 and First Pass Approval was provided in April 2016.</p> <p>The CEP consisted of an Analysis of Alternatives, a Risk Reduction Design Study (RRDS), a Request for Tender and an Offer Definition Improvement Activity. The Government also announced at First Pass that OPV designs from Damen (Netherlands), Fassmer (Germany) and Luerksen (Germany) had been shortlisted for the RRDS. Furthermore, the Government stated the first two OPVs would be built in Adelaide (Osborne Naval Shipyard) from 2018 and then transfer to Western Australia (Henderson Maritime Precinct) in 2020.</p> <p>The Request for Tender was released in November 2016. Upgrade of the Osborne Naval Shipyard was announced by the Government in December 2016. The CEP culminated with the Government announcing Luerksen as the preferred tenderer on 24 November 2017. The Government also announced that ASC Shipbuilding would be utilised for the first two OPVs and that the capabilities of Austal and Cvmec would be used to build ten OPVs subject to the conclusion of commercial negotiations between Luerksen and Austal.</p> <p>The contract for the construction of 12 OPVs was signed with Luerksen Australia on 31 January 2018. Luerksen nominated Cvmec to construct the remaining ten OPVs and contracted Cvmec initially to acquire and prepare the steel and pipe for all 12 OPVs from Australian sources (where available). Luerksen also established contracts with L3 Communications as a systems integrator and Saab Australia for a Situational Awareness System. The Commonwealth elected to purchase the RHIBs and RICs based on Luerksen's OPV design directly from Boomeranger.</p> <p>To reduce the risk associated with commencing construction, the OPV Platform System was divided into two platform design streams (Stream A and B) and design streams for major subsystems, the Situational Awareness System and the Communication and Navigation System. Stream A consisted of the six keel blocks of the ship's hull which represented the high maturity of design enabling production to commence. Stream A was subject to a design and production readiness review process enabling construction to commence on schedule. Stream B are the remaining blocks which comprise the remainder of the OPV Platform. The internal components of these blocks were subject to some design change to accommodate those aspects of the OPV design that were modified to comply with Australian Government legislation or to meet Navy's requirements for commonality or interoperability with other Australian Defence Force units.</p> <p>The OPV Situational Awareness System includes a version of the Saab 9LV Combat System. The sensors and weapons to be integrated include a 2D radar, 40mm Gun, an Electro Optical Surveillance System, Electro Optical Device and Electronic Support Measures.</p> <p>The OPV Communication and Navigation System (CNS) includes an integrated electronic navigation system, internal and external communications systems such as Satellite Communication (SATCOM), Maritime Tactical Wide Area Network (MTWAN) and High Data Rate Line of Sight (HDRLoS) capability. The ship will also have an Integrated Platform Monitoring System. The Support System is based on new analysis built from a combination of new and existing support data. For that reason, it lags the development of the Platform System. CCP 007 will adjust the Support System development and also introduce a Whole of Ship Design Review enabling completion of the design phase.</p> <p>The construction of the first OPV commenced on schedule in November 2018 in South Australia at which time the ships were announced as the Arafura Class. The contracted keel laying milestone for OPV 1 was achieved in February 2019 and the ceremony for Nuship <i>Arafura</i> occurred on 10 May 2019. Production of the second OPV commenced in June 2019, two months ahead of schedule.</p> <p>Nuship <i>Arafura</i> is expected to be delivered by Luerksen in December 2021 after which Navy will commence its Naval Operational Test and Evaluation (NOTE). Initial Operational Capability (IOC) is expected by December 2022.</p> <p>The project did not undergo a Smart Buyer Risk Assessment due to it already having had a similar risk review as part of an Independent Assurance Review.</p>
<p>Uniqueness</p> <p>The Arafura OPV design is based on an existing design in service with the Royal Brunei Navy (Darussalam Class). Only minimal changes were necessary to meet Australian Legislative and Regulatory requirements and specific ADF communications and situational awareness needs, the inclusion of a bow thruster and an additional reverse osmosis plant.</p>
<p>Major Risks and Issues</p> <p>The project is monitoring the potential impact to OPV production created by availability of workforce due to competing demands by other Defence projects and Industries. The project is managing a risk with delays in obtaining retransfer permission for Government Furnished Data for FMS/ITAR items. An additional risk exists if design changes occur to the Government Furnished Equipment during the Acquisition Phase.</p>
<p>Other Current Related Projects/Phases</p> <p>Related Projects include:</p> <p>SEA 5000 – Hunter Class future Frigate: Nine Hunter Class (FFGs) frigates will be based on BAE Systems' Type 26 Global Combat Ship design, modified to meet Australian requirements, and will be built in Osborne, South Australia as part of the Continuous Naval Shipbuilding (CNS) Program.</p>

Project Data Summary Sheets

Auditor-General Report No.19 2019–20
2018–19 Major Projects Report

N2263 – Infrastructure Project for Arafura Class. The project will provide berthing, training, maintenance, logistics, and support facilities at HMAS *Stirling*, HMAS *Coonawarra*, and HMAS *Cairns* to support the introduction into service of 12 new Offshore Patrol Vessels (OPV) being delivered by Luerssen.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Sep 15	Original Approval	10.0	1
Nov 15	Interim Pass Approval	1.5	2
Apr 16	Government First Pass Approval	45.9	3
Nov 17	Government Second Pass Approval	3,581.7	4
	Total at Second Pass	3,639.1	
Jun 19	Exchange Variation	85.2	
Jun 19	Total Budget	3,724.3	
Project Expenditure			
Prior to Jul 18	Contract Expenditure - Luerssen Australia	(100.1)	5
	Other Contract Payments/Internal Expenses	(49.9)	6
		(150.0)	
FY to Jun 19	Contract Expenditure - Luerssen Australia	(191.2)	5
	Other Contract Payments/Internal Expenses	(12.4)	7
		(203.6)	
	Total Expenditure	(353.6)	
Jun 19	Remaining Budget	3,370.7	
Notes			
1	Funding in support of bringing forward the SEA 1180 Phase 1 project forward by two years and establishing a continuous onshore build.		
2	Funding for the conduct of the initial phase of the Competitive Evaluation Process (CEP)		
3	Continuation/Completion of CEP which included Project Support, a Risk Reduction Design Study and Schedule Protection Activities.		
4	This approval included \$103.7 million to support the transition from Armidale Class Patrol Boats to the new SEA1180 Arafura Class Offshore Patrol Vessels, including support for the life of type extension and lease extension of two Cape Class Patrol Boats (CCPB).		
5	Prime Contract with Luerssen Australia Pty Ltd. The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
6	Other expenditure prior to Jul 18 comprises \$21.4m for the Risk Reduction Design Study and Schedule Protection Activity; \$14.2 to Nova for Project Office Support and \$14.3m for other contract payments/internal expenses.		
7	Other expenditure comprises operating expenditure, contractors, consultants, and other capital expenditure not attributable to the listed contracts.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
274.4	220.7	210.0	PBS - PAES: The variance is due to the later than expected signature of the acquisition contract and consequent flow down to planned payment dates. PAES- Final Plan: PAES: The variance was due to a re-phased contracted payment milestone of \$10.0m.
Variance \$m	(53.7)	(10.7)	Total Variance (\$m): (64.4)
Variance %	(19.6)	(4.8)	Total Variance (%): (23.5)

2.2B In-year Budget/Expenditure Variance

Estimate Jun Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	
			Foreign Industry	
			Early Processes	
		(6.4)	Defence Processes	

210.0	203.6		Foreign Government Negotiations/Payments	EOFY variance is a result of GFE and project office cost reductions. In addition, a contracted payment milestone (\$10m) has been re-phased together with delayed escalation costs. This underspend has largely been offset by the early achievement of the commencement of construction of the second Offshore Patrol Vessel (OPV).
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
		(6.4)	Total Variance	
		(3.0)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Luerssen Australia	31 Jan 18	1,988.0	2,421.1	Fixed with forecast Escalation	ASDEFCON (Complex)	1,2
Notes						
1	Contract value as at 30 June 19 is based on actual expenditure to 30 June 19 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable). Amounts expended convert using the spot rate of the day therefore due to calculation method 30 June 19 value will reflect a variance to prior reporting period.					
2	The price is the value in out turned dollars (as at June 2019) using Commonwealth cumulative escalation indices. While price escalation models are built into the contract, the price at signature does not include an estimate across the forward commitment (expected expenditure). The price at 30 June 19 includes this estimate, which is the reason for the large difference between the two figures.					
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 19				
Luerssen Australia	12	12	12 Offshore Patrol Vessels			
Major equipment received and quantities to 30 Jun 19						
Nil						
Notes						
	N/A					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	Platform System – Stream A	Jun 18	NA	Jun 18	0	
Preliminary Design		Aug 18	NA	Aug 18	0	
Detailed Design		Oct 18	Nov 18	Nov 18	1	1
System Requirements	Platform System – Stream B	Jun 18	NA	Jun 18	0	
Preliminary Design		Nov 18	Dec 18	Dec 18	1	1
Detailed Design		Feb 19	NA	May 19	3	1
System Requirements	Command and Control System (C2)	Jun 18	NA	Jun 18	0	
Preliminary Design		Dec 18	Nov 18	Nov 18	(1)	
Detailed Design		Mar 19	NA	Mar 19	0	
System Requirements	Communication and Navigation System (CNS)	Jun 18	NA	Jun 18	0	
Preliminary Design		Jan 19	NA	Nov 18	(2)	1
Detailed Design		Apr 19	NA	May 19	1	
Preliminary Design	Support System (SS)	Nov 18	NA	Jun 19	7	1, 2
Detailed Design		Jun 19	Jun 19	Apr 20	10	1, 2
Notes						
1	Variance was agreed by the parties at Contract Change Proposal (CCP) 001 and incorporated under Contract Amendment 3.					
2	CCP 007, in draft, proposes to delay the Support System Detailed Design by 12 months and reduce the Support System Detailed Design milestone review value commensurate with the other detailed design milestone values in order to create new milestones for a whole of ship Detailed Design, Integrated Baseline Review (IBR) with ASC, and an IBR with Luerssen. The whole of ship Detailed Design will be a complete assessment of the detailed design including antenna arrays. The IBR milestones are proposed to finalise Luerssen's establishment of the Earned Value Management System (EVMS).					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
---------------------	-------------------------------	------------------	-----------------	-------------------	-------------------	-------

Project Data Summary Sheets

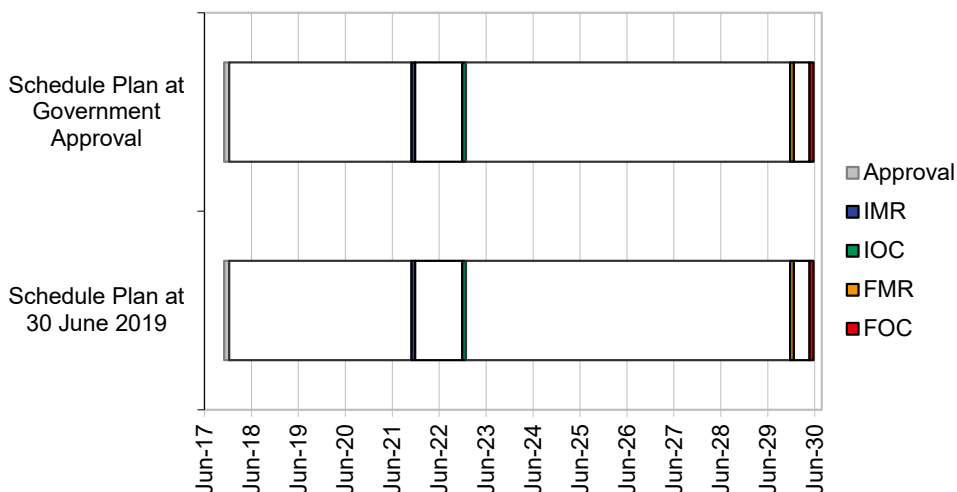
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Acceptance	OPV 1	Dec 21	N/A	Dec 21	0	
Acceptance	OPV 2	Sep 22	N/A	Sep 22	0	
Acceptance	OPV 3	May 23	N/A	May 23	0	
Acceptance	OPV 4	Feb 24	N/A	Feb 24	0	
Acceptance	OPV 5	Nov 24	N/A	Nov 24	0	
Acceptance	OPV 6	Jul 25	N/A	Jul 25	0	
Acceptance	OPV 7	Apr 26	N/A	Apr 26	0	
Acceptance	OPV 8	Jan 27	N/A	Jan 27	0	
Acceptance	OPV 9	Oct 27	N/A	Oct 27	0	
Acceptance	OPV 10	Jun 28	N/A	Jun 28	0	
Acceptance	OPV 11	Mar 29	N/A	Mar 29	0	
Acceptance	OPV 12	Dec 29	N/A	Dec 29	0	
Notes						
N/A						

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 21	Dec 21	0	
Initial Operational Capability (IOC)	Dec 22	Dec 22	0	
Final Materiel Release (FMR)	Dec 29	Dec 29	0	
Final Operational Capability (FOC)	Jun 30	Jun 30	0	
Notes				
N/A				

Schedule Status at 30 June 2019

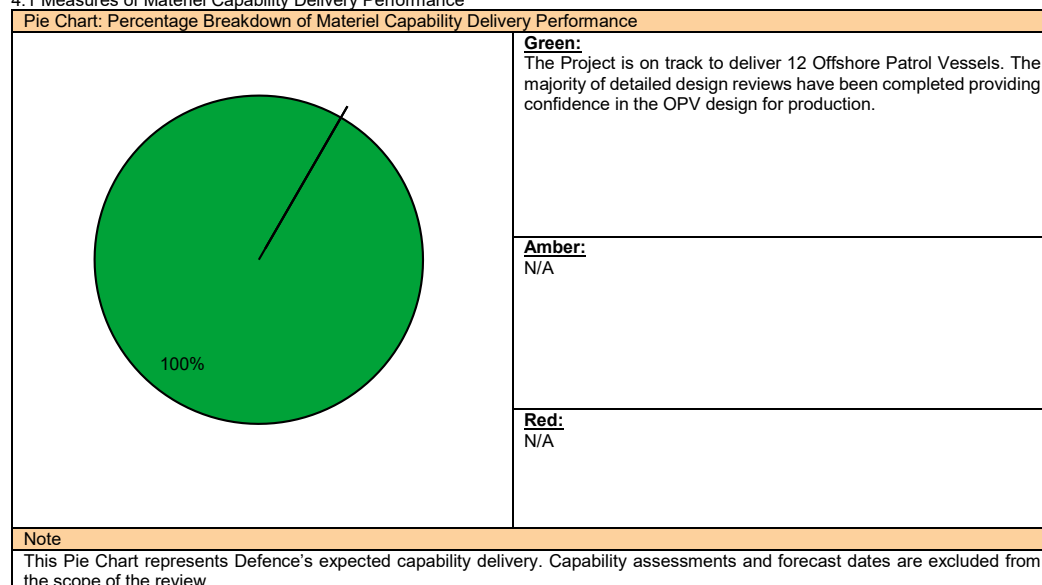


Notes

Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	OPV1 delivered ready for Operational Test and Evaluation (OT&E). Those CASG Fundamental Inputs to Capability (FIC) elements including transition into sustainment as defined by the OPV Support System sufficient to support OT&E. IMR is expected to be achieved December 2021.	Not yet achieved
Initial Operational Capability (IOC)	IOC is achieved when Navy can be assured that the first OPV can demonstrate it can be operated and maintained to conduct effective and sustained operations. IOC is expected to be achieved December 2022.	Not yet achieved
Final Materiel Release (FMR)	OPVs 1-12 delivered in accordance with Government Approved scope. OPV12 delivered ready for OT&E. Those CASG FIC elements including transition into sustainment as defined by the OPV Support System sufficient to support OT&E for each OPV. FMR is expected to be achieved December 2029.	Not yet achieved
Final Operational Capability (FOC)	OPVs 1-12 complete in accordance with Functional Performance Specification and Operating and Support Intent. OPV12 delivered and OT&E completed. All Facilities accepted. All support organisations functioning. FOC is expected to be achieved June 2030.	Not yet achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the OPV communications system will be affected by the late delivery of Government Furnished Data leading to an impact on schedule.	SEA 1180 project is constrained by third party retransfer permission. The project office works closely with Luerssen to understand design assumptions which are made due to the lack of GFM, in particular technical data.
There is a chance that future Government Furnished Equipment changes will be imposed on the project leading to an impact on Cost.	SEA 1180 was funded to develop a single baseline for Government Furnished Equipment which has been established. Changes to that equipment driven by obsolescence or capability are managed outside of SEA 1180. The scope of any future changes will need to consider the Arafura Class as an In Service baseline.
There is a chance that the Arafura Class OPV production will be affected by demands on the available workforce leading to an impact on quality and schedule.	The cause of this risk is the limited resources shared across the Continuous Naval Shipbuilding program. It is also caused by competition with competing Industries. The Naval Shipbuilding College is identifying the increased demands and skillsets required.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

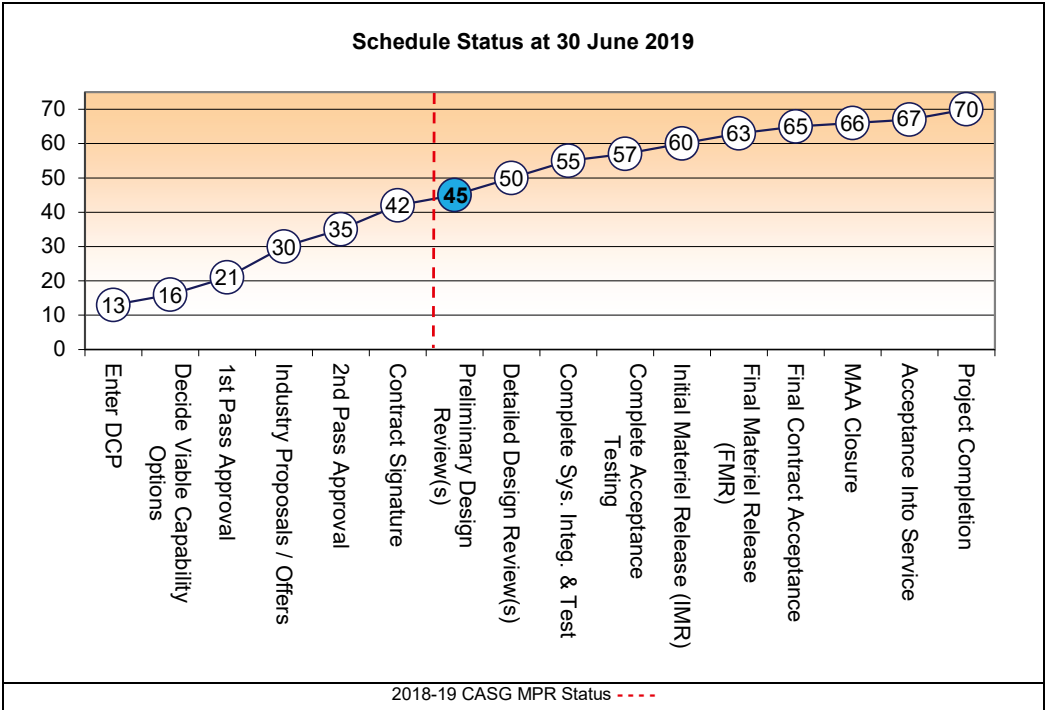
5.2 Major Project Issues

Description	Remedial Action
N/A	N/A
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	7	6	7	7	45
Preliminary Design Review	Project Status	7	7	6	6	7	7	4	44
	Explanation	<ul style="list-style-type: none"> Schedule: Project commenced construction on OPV#2 ahead of schedule. Cost: Project costs are within contingency and sufficient to deliver the project. Technical Understanding will remain 6 until Support system Design is finalised. Technical Difficulty: OPV design is based on an existing Reference Ship Design. Operations and Support: Impact on the existing operating and support environment is known, planning is yet to commence on the transition from acquisition to sustainment. 							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Nil	

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	Mr Peter Croser
Project Director/Manager	Mr Oliver Ciano

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁴⁴

Project Number	AIR 5349 Phase 3
Project Name	EA-18G GROWLER AIRBORNE ELECTRONIC ATTACK CAPABILITY
First Year Reported in the MPR	2013-14
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Aug 12
Government 2nd Pass Approval	Apr 13
Budget at 2 nd Pass Approval	\$2,641.4m
Total Approved Budget (Current)	\$3,510.3m
2018-19 Budget	\$175.3m
Project Stage	Initial Materiel Release
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The EA-18G Growler Airborne Electronic Attack Capability provides for the acquisition of 12 Boeing EA-18G Growler aircraft, ALQ-99 Tactical Jamming Systems (TJS), associated weapons, support and training systems to establish an Airborne Electronic Attack (AEA) capability for the Australian Defence Force (ADF). In December 2014 the scope of the project was expanded to include the Mobile Threat Training Emitter System (MTTES) Electronic Warfare (EW) in Queensland and in the Northern Territory, plus air-to-air and anti-radiation weapons for training activities. In April 2017 the scope was further expanded to include the acquisition and integration of CEA Technologies Pty Ltd (CEA) training systems into the MTTES, to further enhance electronic warfare training outcomes across the Australian Defence Force (ADF).

1.2 Current Status

Cost Performance

In-year

At **30 June 2019**, the project had spent **\$127.2m** against a budget of **\$175.3m**. The underspend of **\$48.1m** has mainly been driven by the activity associated with the Foreign Military Sales program. Facilities work is progressing on schedule but is yet to be fully billed to the Project. Some elements of decision support and the Deployable Mission Planning facilities have slipped.

Project Financial Assurance Statement

As at **30 June 2019**, project AIR 5349 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Despite the significant change of scope approved in April 2013 to acquire new aircraft in lieu of modification of existing Lot 33 F/A-18F Super Hornets, the project achieved the initial In-Service Date (ISD) milestone in January 2017, as well as the subsequent Initial Materiel Release (IMR) milestone on schedule on 14 February 2017.

All 12 EA-18G Australian aircraft have been accepted and transferred to the RAAF, and have arrived in Australia. The Project met Australian airworthiness board timelines during 2016 to support Australian flight operations from the in-service date (ISD).

No 6 Squadron has undergone a role change and now is responsible for operational command of the Growler capability.

144 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

<p>The existing Integrated Visual Environment Maintenance Trainers (IVEMTs) have been successfully upgraded to support F/A- 8F and EA-18G maintenance training.</p> <p>Major Materiel Release (MR2) has been delayed from October 2017 to September 2019 due to a revised integration and certification strategy for the initial MTTES training capability in Queensland, and a minor technical issue recently discovered in some mission equipment. In the interim, aircrew training outcomes have been achieved through the US Navy.</p> <p>Major Materiel Release (MR3) was achieved in September 2018. This milestone principally related to enabling capabilities and training devices for the delivered Growler aircraft.</p> <p>Major Materiel Release (MR4) has been delayed from March 2019 to October 2020 due to ongoing design and integration effort for the MTTES Northern Australia range. In the interim, MTTES Queensland range equipment and other commercial arrangements will be utilised to enable a training effect on the MTTES Northern Australia range.</p> <p>The project is due to achieve its next Major Materiel release (MR 5) milestone in December 2019. This milestone principally relates to final integration and clearance of stores on the Growler aircraft and the initial delivery of advanced range training systems.</p>	
<p>Materiel Capability Delivery Performance</p> <p>The project remains on track to deliver a US Navy common Airborne Electronic Attack Capability based on the EA-18G aircraft and ALQ-99 TJS.</p> <p>The EA-18G Growler contains the ALQ-218 Radio Frequency Receiver System as well as the ALQ-227 Communications Countermeasures Set to receive broad spectrum radio frequency signals and subsequently disrupt or jam those signals with the ALQ-99 TJS. As the EA-18G Growler airframe is based on the F/A-18F Super Hornet Block II configuration, it retains an Air-to-Air capability with the APG-79 Radar and AIM-120 Advanced Medium Range Air to Air Missiles (AMRAAM) weapons. Additional AMRAAM tactical missiles and Captive Air Training Missiles (CATMs) are being procured for the expanded air combat fleet. The AIM-9X Sidewinder Air-to-Air missile as integrated on the F/A-18F Super Hornet is also being integrated onto the EA-18G with additional CATMs and tactical missiles for Raise-Train-Sustain (RTS) approved for acquisition in December 2014.</p> <p>The Australian EA-18G Growler will retain the capability for aircrew to train for the employment of AGM-88B High Speed Anti-Radiation Missiles (HARM) and AGM-88E Advanced Anti-Radiation Air to Ground Missiles (AARGM), with various HARM and AARGM CATMs being procured. Further, HARM and AARGM tactical missiles were approved for acquisition in December 2014 for RTS activities.</p> <p>The AN/ASQ-228 Advanced Targeting Forward Looking Infra-Red (ATFLIR) pod will also be integrated onto the EA-18G and 15 ATFLIR pods have been procured. Air Combat Manoeuvring Instrumentation pods have also been procured for the Growler fleet to maximise training effectiveness.</p> <p>In addition to modifying aircrew and maintenance training devices (flight simulators and IVEMTs) that were procured by AIR 5349 Phase 1 for the F/A-18F Super Hornet to enable training on either the F/A-18F or EA-18G, the project has also acquired and delivered for installation, an additional two Tactical Operational Flight Trainers (TOFTs) (flight simulators) to address the increased training requirements of the additional EA-18G Growler aircrew.</p> <p>The project plans to follow a similar approach taken to recent FMS acquisitions (including the F/A-18F Super Hornet) within the aviation domain to ensure compliance with Australian Defence Force airworthiness and workplace health and safety standards.</p> <p>The December 2014 approval of MTTES will provide the ability for in-country EA-18G aircrew training through establishment of EW training range capabilities in Queensland and the Northern Territory. Establishment of these ranges will ensure EA- 8G aircrew can train effectively without needing frequent deployments to use United States electronic combat ranges for skills development. MTTES will enhance ADF EW training range capabilities. The Growler aircraft is just one of the many Defence assets that will use this training range capability. The MTTES began limited operations on the Queensland range during the 3rd quarter of 2018, supporting a number of exercises and a Growler training deployment to the United States. The MTTES equipment for the Queensland range was accepted into operational service in May 2019. The MTTES training capability will be expanded incrementally out to Growler Final Operating Capability.</p> <p>The April 2017 approval for Advanced MTTES includes a number of CEA training systems, associated control equipment, initial training and support planning, integration into the broader MTTES Command and Control system, and development of training programs. Advanced MTTES training capabilities will be incorporated into the incremental expansion of the MTTES training capability out to FOC.</p> <p>EA-18G Growler Initial Operating Capability with one caveat was declared by Air Force in February 2019.</p>	
<p>Note</p>	
<p>Forecast dates and capability assessments are excluded from the scope of the review.</p>	

1.3 Project Context

Background

Defence first considered an Airborne Electronic Attack Capability based on the EA-18G Growler as part of the Force Structure Review 2008 (FSR08). While it was noted that an Electronic Attack capability would have broad application in a range of contingencies, the decision at the time was to consider the capability further as part of FSR13. Notwithstanding, in 2008, the Government approved a production modification for the last 12 F/A-18F Super Hornet aircraft procured under AIR 5349 Phase 1, to enable future upgrade to EA-18G Growler configuration, should strategic circumstances dictate.

In early 2011, the US Department of Defence advised the ADF that the US Navy (the sole operator of the EA-18G Growler) would place its final order for these aircraft in the second half of 2012 and the production line would close in 2015. Accordingly, the US Navy advised that if Australia wished to economically acquire an Airborne Electronic Attack capability, the only feasible option would be to add any Australian requirements to the final US Navy production contract.

In August 2012, the Government approved acquisition of an Airborne Electronic Attack Capability based on the EA-18G Growler. The approved scope from this combined pass approval consisted of modification of 12 existing RAAF Lot 33 F/A- 8F Super Hornets. Defence continued to assess the risk associated with the ADF's air combat transition from the F/A-18A/B Hornet and the F/A- 8F

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Super Hornet, to the F-35A Joint Strike Fighter and developed options for Government consideration – the Air Combat Capability Transition Review. In April 2013, the Government approved the preferred option, which included the acquisition of 12 new build EA-18G Growler aircraft in lieu of modification of existing F/A-18F Super Hornets.

The project classification is Australianised Military-Off-The-Shelf as there are a small number of Australian unique changes, such as ATFLIR and AIM-9X Stores Clearances.

The Acquisition Strategy for AIR 5349 Phase 3 is to procure the principal materiel elements of the capability through the US Government FMS program. Accordingly, a number of FMS cases have been established with Navy International Programs Office and Naval Air Systems Command for acquisition of the materiel components of the capability as well as aircrew and maintainer training. Another FMS case will be utilised to acquire AIM-120 AMRAAM missiles from the US Air Force Security Assistance Command and the AMRAAM Joint Program Office. The procurement approach for the sustainment of the capability will mirror, and optimally leverage that already in place for the F/A-18F Super Hornet and will comprise a combination of Australian Industry based commercial support contracts, augmented where necessary with FMS case procured, US Government sourced products and services.

The Materiel System for the capability will comprise 12 Boeing EA-18G Growler aircraft, ALQ-99 TJSS, AIM-120 AMRAAM missiles, and various AGM-88B/E HARM/AARGM training missiles, alternate mission equipment, mission planning systems, training devices, spares and support and test equipment, as well as training for aircrew and maintenance personnel. The Airborne Electronic Attack architecture will be enabled by a US Navy common EW database.

Initially, both aircrew and maintenance personnel will be trained in the US utilising the US Navy's training system for the EA-18G Growler. Following the initial training of maintenance personnel, an EA-18G Growler maintenance training framework will be established at RAAF Base Amberley for ongoing training. For aircrew, training will remain in the US throughout the capability life cycle, supported by Defence managed FMS cases.

In December 2014 the scope of AIR 5349 Phase 3 was expanded to include EW training ranges in Queensland and Northern Australia, plus air-to-air and anti-radiation weapons for RTS activities. Additionally, ongoing EA-18G and F/A-18F aircrew training in the US was approved.

ACEASPO and AIR5349 Phase 3 have established a Support System for the capability, which leverages the significant configuration commonality between the F/A-18F Super Hornet and the EA-18G Growler. Existing support contracts have been modified to include sustainment products and services for the EA-18G Growler, in a similar way to that already in place for the F/A-18F Super Hornet. In addition, US Government FMS cases delivering sustainment products and services have been amended or replaced with arrangements including both F/A-18F and EA-18G systems. Notably, consistent with the Air Combat Capability Transition Review outcomes agreed by Government, the majority of F/A-18F and EA-18G aircrew training has moved to the US as No.6 Squadron has changed from being the F/A-18F training squadron to the EA-18G operational squadron. No. 1 Squadron will retain some Super Hornet aircrew training responsibilities.

Further Government approval in April 2017 provides for acquisition and integration of CEA threat training systems into the MTES.

In January 2018 an incident involving an in-service EA-18G aircraft occurred in the US at Nellis Air Force Base (near Las Vegas). Investigations into the incident **have been completed and the aircraft has since been classified unrepairable and disposal actions have commenced. The project is working closely with Air Force regarding the development of possible replacement options.**

Uniqueness

Noting that AIR5349 Phase 3 shares many common aspects with AIR5349 Phase 1 and the acquisition of the F/A-18F Super Hornet, the primary area of uniqueness resides in the introduction of an offensive radio frequency Electronic Attack capability, and the underpinning materiel enablers for this new warfare domain for the ADF.

Major Risks and Issues

Several risks have been identified with supply of MTES hardware to meet schedule, as well as the timely establishment of MTES operation and maintenance support contracts. The risk of RAAF EA-18G structural life of type being inadequate to meet planned withdrawal date is a longer term consideration that will continue to be monitored over the life of the capability. Participation in the USN F/A-18 E/F Service Life Assessment and Extension program (SLAP/SLEP) will mitigate this risk.

The emergent risk of adapting USN doctrine and command and control structures for EA-18G to the Australian context will be mitigated by the assignment of resources to **develop** doctrine and command and control frameworks **in the ADF Joint electromagnetic operations context, including the development of decision support tools.**

There is an emergent risk that some stores variants will not be fully cleared for use on Growler in time for Materiel Release 5. This will be mitigated by early release of training variants.

The Estate and Infrastructure Group Project to upgrade Northern Australian Range facilities for MTES has run over budget. A submission seeking approval for the realignment of the program budget to enable completion of facilities effort without delay through FY20/21 **was agreed by government in December 2018.**

Late delivery of MTES systems and **some Advanced MTES systems** is being mitigated through additional use of US training ranges. **Late delivery of MTES systems was a caveat to the declaration of IOC.**

Current accreditation and assurance policy and processes are not structured to accommodate the unique elements of the MTES. Procedural work-arounds are being used to minimise the impact on aircrew training outcomes while suitable modifications to the accreditation framework are developed.

Other Current Related Projects/Phases:

AIR 5349 Phase 1 – Bridging Air Combat Capability: Provision of 24 F/A-18F Super Hornets and associated supplies and support. Some AIR 5349 Phase 1 delivered supplies will be shared with AIR 5349 Phase 3. AIR 5349 Phase 3 will augment AIR 5349 Phase 1 delivered support arrangements.

AIR 5349 Phase 2 – Bridging Air Combat Capability Weapons: Provision of Air-to-Air and Air-to Surface Weapons and expendables for the F/A-18F Super Hornet. AIR 5349 Phase 2, through a Memorandum of Agreement (MOA) with AIR 5349 Phase 3, is managing the acquisition and introduction into service of the EA-18G weapons (AIM-120 AMRAAM, AIM-9X Sidewinder, AGM-88B HARM and AGM-88E AARGM) and expendables.

AIR 5349 Phase 6 – Advanced Growler: Establishing a co-operative agreement with USN to develop replacement jamming capability, further Electronic Attack capability development activities and acquisition of anti-radiation weapons.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Aug 12	Original Approved	1,155.3	1
Apr 13	Subsequent Second Pass Approval – New build aircraft	1,486.1	2
Apr 13	Total at Second Pass Approval	2,641.4	
Dec 14	Real Variation – Scope	200.6	3
Jan 16	Real Variation – Financial Reduction	(267.9)	4
Nov 16	Real Cost Decrease	(100.0)	5
May 17	Real Variation – Scope (ADV MTES)	102.7	6
Aug 17	Real Variation – Financial Reduction	(27.0)	10
		(91.6)	
Feb19	Exchange Variation	960.5	
Jun 19	Total Budget	3,510.3	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – US Government (AT-P-SCI)	(1,278.0)	7
	Contract Expenditure – US Government (AT-P-LEN)	(630.6)	7
	Contract Expenditure – US Government (AT-P-GUW)	(80.1)	7
	Contract Expenditure – US Government (AT-D-YLB)	(69.3)	7
	Contract Expenditure – US Government (AT-P-AZN)	(63.3)	7
	Contract Expenditure – US Government (AT-P-GTM)	(46.1)	7
	Contract Expenditure – CEA Technologies	(31.9)	7
	Other Contract Payments / Internal Expenses	(101.4)	8
		(2,300.7)	
FY to 30 Jun 19	Contract Expenditure – US Government (AT-P-SCI)	(26.1)	7
	Contract Expenditure – CEA Technologies	(24.7)	7
	Contract Expenditure – US Government (AT-P-GUW)	(17.3)	7
	Contract Expenditure – US Government (AT-P-GTM)	(15.3)	7
	Contract Expenditure – US Government (AT-P-LEN)	(9.7)	7
	Other Contract Payments / Internal Expenses	(34.1)	7
		(127.2)	9
FY to 30 Jun 19	Total Expenditure	(2,427.9)	
30 Jun 19	Remaining Budget	1,082.4	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Notes	
1	Government approval in August 2012 for modification of Super Hornet aircraft to EA-18G Growler configuration and acquisition of associated Electronic Attack equipment.
2	Government approval in April 2013 to change acquisition strategy to acquisition of new-build aircraft rather than modification of existing aircraft.
3	Government approval in December 2014 for inclusion of Growler Enabling capabilities – MTES and RTS Weapons.
4	Real Cost reduction – MAA 3.1 amendment processed January 2016 – for transfer of project funds to offset Growler Facilities funding shortfall, and return of surplus funds to the Defence Capability Plan.
5	Real Cost Decrease – MAA 3.2 amendment processed September 2016 – representing a reduction of Project Contingency due to the mitigation of aircraft production risk.
6	Government approval in April 2017 for acquisition and integration of CEA systems into the MTES.
7	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
8	Other expenditure comprises: Operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.
9	Other Expenditure comprises: DELAWR Facilities work (\$13.1m) , Raytheon support for MTES (9.3m) , Commercially Contracted resource support (\$6.7m) Operational Test and Evaluation activities (\$3.0m) , FMS Weapons procurement – Case AT-P-AYW (\$1.9m) , Remaining expenditure comprises: Operating expenditure, and other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.
10	Project contribution to investment program rebalancing activity has been formally recognised as real cost reduction with V4.1 MAA submission and approval mid-2018.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
197.4	193.1	175.3	PBS – PAES: The acquisition of the project is as forecast in the Defence PBS 2018-19. PAES – Final Plan: The variance is due to a reduction in raise, train, sustain weapons costs and delays to the delivery of deployable mission planning facilities, partially offset by an increase in costs against the Mobile Threat Training Emitter System (MTES) and MTES facilities redevelopment projects.
Variance \$m	(4.3)	(17.8)	Total Variance (\$m): (22.1)
Variance %	(2.2)	(9.2)	Total Variance (%): (11.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(19.3)	Australian Industry	Year End Variance is mainly due to the variation in activity associated with the foreign military sales program. Facilities work is progressing on schedule but was not billed to the Project in FY18/19. Planning software and facilities have slipped to FY19-20 as the requirements are developed. A planned operational test and evaluation training activity in the United States was not required resulting in a cost saving.
			Foreign Industry	
			Early Processes	
			Defence Processes	
		(26.7)	Foreign Government Negotiations/Payments	
		(2.1)	Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
		(48.1)	Total Variance	
175.3	127.2	(27.4)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
US Government (AT-P-LEN)	Aug 12	944.2	721.2	Reimbursement	FMS	1, 2, 7
US Government (AT-P-AZN)	May 13	36.2	81.7	Reimbursement	FMS	1, 2
US Government (AT-P-SCI)	Jul 13	1,313.1	1,420.5	Reimbursement	FMS	1, 2, 8
US Government (AT-P-GTM)	Sep 13	19.3	200.2	Reimbursement	FMS	1, 2, 3
US Government (AT-P-GUW)	Feb 15	88.6	157.0	Reimbursement	FMS	1, 2, 5
US Government (AT-D-YLB)	Feb 15	84.6	135.1	Reimbursement	FMS	1, 2, 4
CEA Technologies Pty Ltd	Jun 17	87.3	86.0	Firm	Official Order	1, 2, 6

Notes				
1	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable)			
2	The scope of this contract is explained further below.			
3	The large increase in the value of this contract reflects an increase in the training already being procured.			
4	This contract is for the acquisition of AMRAAM missiles and is being managed by Guided Weapons Branch through an FMS case established as part of the AIR 5349 Phase 2 Bridging Air Combat Capability Project.			
5	The value of this contract has increased to reflect higher actual costs for equipment being procured to support the MTES capability.			
6	This contract is for the acquisition of the Advanced MTES CEA Technologies Pty Ltd systems			
7	The contract value for AT-P-LEN was decreased significantly in June 2018, with the realisation of savings across a range of supplies and support services.			
8	The contract value for AT-P-SCI was decreased significantly in June 2019, with the realisation of savings across a range of supplies and support services.			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 19		
US Government (AT-P-LEN)	Various	Various	Advanced Electronic Attack Kits, ALQ99 TJSs, Launchers, Launch computers, Joint Mission Planning System and Software	
US Government (AT-P-AZN)	Various	Various	HARM and AARGM training missiles, tactical missiles, associated support equipment and training	
US Government (AT-P-SCI)	12	12	EA-18G aircraft, associated spares and support equipment	
US Government (AT-P-GTM)	N/A	N/A	Initial Aircrew and Maintenance Training	
US Government (AT-P-GUW)	Various	Various	EW training ranges systems including threat emitter systems, range control and debrief systems, associated IT, spares, support equipment, integration and test services.	
US Government (AT-D-YLB)	Various	Various	Weapons – AIM-120 C7 AMRAAM air-to-air missiles and associated support equipment and infrastructure	
CEA Technologies Pty Ltd	Various	Various	Advanced MTES – CEA Technologies Pty Ltd systems – various threat emulation systems, support equipment and services	
Major equipment received and quantities to 30 Jun 19				
Transfer of ownership for aircraft procured under ATPSCI commenced in Jan 17 and transfer of all 12 aircraft is now complete. Upgrade of the two existing Tactical Operational Flight Trainers (TOFTs) to enable both F/A-18F and EA-18G training. New built TOFTs were installed and declared ready for training. Delivery of the H12(A) Software configuration set and associated flight clearance recommendation. Four Mobile Radar Threat Simulators (MRTS) were procured for the MTES Queensland range.				

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Requirements	EA-18G Aircraft	N/A – Military Off the Shelf				
	Aircraft Software – SCS H10A	Jan 14	N/A	Jan 14	0	
	Mission Planning System	May 14	N/A	May 14	0	
	ALQ-99 TJS	N/A – Military Off the Shelf				
	Modified TOFTs	Nov 14	N/A	Jul 15	8	1, 3
	New-build TOFTs	Nov 14	N/A	Apr 15	5	2
	Modified Integrated Visual Environment Maintenance Trainers (IVEMTs)	Nov 14	N/A	Jul 15	8	3
Preliminary Design	EA-18G Aircraft	N/A – Military Off the Shelf				
	Aircraft Software SCS H10A	Jun 14	N/A	Jun 14	0	4
	Mission Planning System	Aug 14	N/A	Sep 14	1	
	ALQ-99 TJS	N/A – Military Off the Shelf				
	Modified TOFTs	May 15	N/A	Aug 15	3	1, 3
	New-build TOFTs	May 15	N/A	Mar 16	10	2
	Modified IVEMTs	May 15	N/A	Oct 15	5	3

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Critical Design	EA-18G Aircraft	N/A – Military Off the Shelf				
	Aircraft Software SCS H10A	Jun 14	N/A	Jun 14	0	4
	Mission Planning System	Sep 14	N/A	Jan 15	4	
	ALQ-99 TJS	N/A – Military Off the Shelf				
	Modified TOFTs	May 15	N/A	Aug 15	3	1,3
	New-build TOFTs	May 15	N/A	Mar 16	10	2
	Modified IVEMTs	May 15	N/A	Oct 15	5	3
Notes						
1	Modified TOFT's contract awarded April 2015.					
2	Revised date reflects post contract award schedule.					
3	Revised date reflects delay in contract award and updated schedule.					
4	SCS H10A Preliminary Design Review (PDR) and Critical Design Review (CDR) (held by US Navy) was a combined event, hence dates are the same.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	EA-18G Aircraft	Jun 16	N/A	Jul 16	1	1
	Aircraft SCS H10A	Jul 16	N/A	Jul 16	0	1
	Mission Planning System	Jul 16	N/A	Jul 16	0	1
	ALQ-99 TJS	Jul 16	N/A	Jul 16	0	1
	Modified TOFTs	Sep 16	N/A	Jul 17	10	2
	New-build TOFTs	Sep 17	N/A	Aug 18	11	3
	Modified IVEMTs	Oct 16	N/A	Sep 16	(1)	
	MTTES–Queensland Ranges	Oct 17	N/A	May 19	19	4
Acceptance	MTTES – Northern Australian Ranges	Mar 19	N/A	Oct 20	19	5
	EA-18G Aircraft	Jul 16	N/A	Jul 16	0	1
	Aircraft Software –SCS H10A	Jul 16	N/A	Jul 16	0	1
	Mission Planning System	Jul 16	N/A	Jul 16	0	1
	ALQ-99 TJS	Jul 16	N/A	Jul 16	0	1
	Modified TOFTs	Jan 17	N/A	Jul 17	6	2
	New-build TOFTs	Sep 17	N/A	Aug 18	11	3
	Modified IVEMTs	Nov 16	N/A	Nov 16	0	
Notes	1	US Navy conduct a combined development and acceptance test program encompassing aircraft, SCS H10A, mission planning system, stores integration testing including the ALQ-99 TJS. Accordingly, dates for system integration and acceptance testing reflect the same schedule window.				
	2	Modification of the TOFTs was deliberately delayed as a risk mitigation activity which ensures that US based TOFT upgrades will be completed prior to execution of the Australian based TOFT upgrade. The TOFTs were accepted with known deficiencies requiring remediation.				
	3	Delay to new build TOFTs was caused by limited contractor availability to conduct the installation at Amberley.				
	4	MTTES – Queensland range schedule has been delayed to accommodate a revised integration and certification strategy that incrementally delivers training capability.				
	5	MTTES – Northern Australian range schedule is delayed due to delivery of long-lead items being later than planned and the complexity of in-country integration. Training capability will be delivered incrementally out to Final Operating Capability.				

3.3 Progress Toward Materiel Release and Operational Capability Milestones

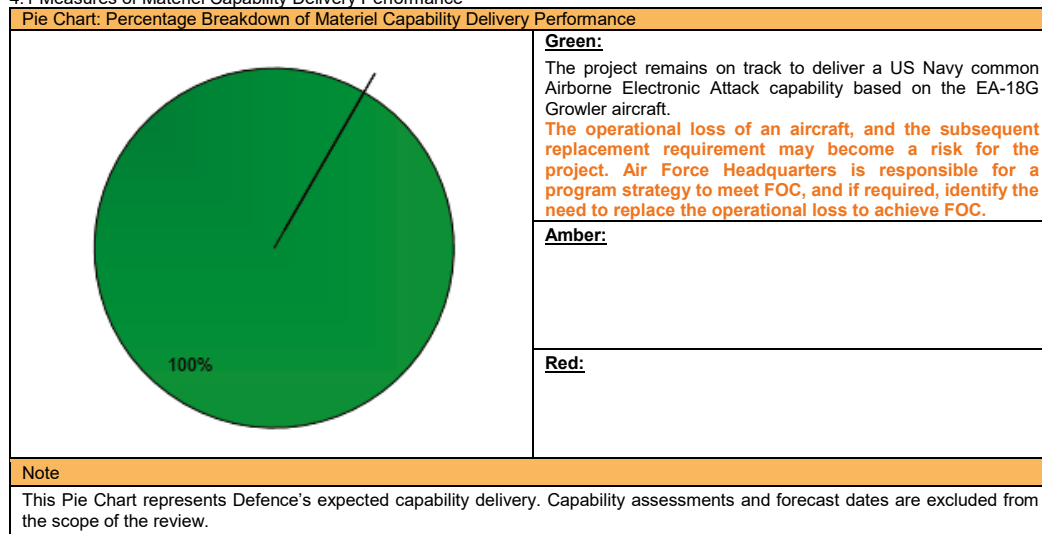
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Feb 17	Feb 17	0	1
In-Service Date (ISD)	Jan 17	Jan 17	0	
Initial Operational Capability (IOC)	Jul 18	Feb 19	7	2
Materiel Release 2 (MR2) MTES QLD	Oct 17	Sep 19	23	3
Materiel Release 3 (MR3) Various systems	Jul 18	Sep 18	2	
Materiel Release 4 (MR4) MTES Northern Australia	Mar 19	Oct 20	19	4
Materiel Release 5 (MR5) ADV MTES, Additional Stores and Stores clearances	Jul 19	Dec 19	5	6
Materiel Release 6 (MR6) MTES Northern Australia	Mar 20	Oct 21	19	7
Materiel Release 7 (MR7) ADV MTES	Jul 20	Mar 21	8	8
Materiel Release 8 (MR8) ADV MTES	Jul 21	Feb 21	(5)	
Final Materiel Release (FMR)	Jul 22	Aug 22	1	
Final Operational Capability (FOC)	Jul 22	Aug 22	1	5
Note				
Forecast dates in Section 3 are excluded from the scope of the review.				
1. IMR was declared with Caveats on 14 February 17. The caveats related to late delivery of the upgrade of the TOFTs and late delivery of the Aircrew computer based training, and were resolved in 2017-18.				
2. IOC was due in July 2018 and evidence to support the declaration was supplied by the Project by that date. IOC was declared with one caveat relating to in-country training. (late delivery of MTES systems). See Section 5.2 for more details. Achievement and declaration of operational capability milestones is a decision made by the Chief of the Air Force (CAF) based upon the maturity of all relevant areas of the fundamental inputs to capability (FIC), inclusive of those elements for which the project is responsible. CAF considered the elements of FIC sufficiently mature to declare Initial Operating Capability in February 2019.				
3. MR2 has been delayed to accommodate a revised integration and certification strategy for the MTES – Queensland schedule that incrementally delivers training capability. A minor technical issue with an item of MTES mission equipment has further delayed the achievement of MR2.				
4. MR4 has been delayed as it is anticipated that some materiel components for the MTES- Northern Australian Ranges will not be able to be delivered on time				
5. In January 2018 an incident involving an in-service EA-18G aircraft occurred in the US at Nellis Air Force Base (near Las Vegas). The project is working closely with Air Force regarding the development of possible replacement options. Declaration of FOC may be affected.				
6. MR5 delivery of initial materiel and support system for ADV MTES in Queensland running behind schedule due to delays in production and documentation				
7. MR6 is dependent on achievement of MR4 and integration of additional FMS materiel, which have also been delayed in production.				
8. ADV MTES materiel components of MR7 delayed due to uncertainties in design source data.				
<p align="center">Schedule Status at 30 June 2019</p> <p>Schedule Plan at Government Approval</p> <p>Schedule Plan at 30 June 2019</p> <p>Jun-12 Jun-13 Jun-14 Jun-15 Jun-16 Jun-17 Jun-18 Jun-19 Jun-20 Jun-21 Jun-22 Jun-23</p> <p>Legend: Approval, IMR, IOC, FMR, FOC</p>				
Note				
Forecast dates in Section 3 are excluded from the scope of the review.				

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none"> At least six new-build EA-18G aircraft in USA and associated equipment delivered to support Initial Operational Test and Evaluation (IOT&E) programs. Sufficient aircrew and maintenance personnel to support Growler operations from ISD. Initial in-country aircrew training. <p>IMR was declared on 14 February 2017 with caveats. The caveats associated with this declaration have since been satisfied.</p>	Achieved with caveats
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> Six Growler aircraft delivered and sufficient aircrews trained in Growler employment to meet contemporary limited preparedness requirements; Sufficient ALQ-99 assets delivered to support training and enable Growler operations in one area of operations (AO); In-country logistics and operational support, not including electronic warfare suite support; US-provided electronic warfare suite support; Ability to deploy within AS and near region to conduct Growler operations in a single AO; In-country aircrew currency training and maintenance training capability; Growler facilities completed, occupied and operational; and MTC and MAOC. Air Force declared achievement of IOC in February 2019 with one caveat. 	Achieved with caveat
Final Materiel Release (FMR)	<ul style="list-style-type: none"> All 12 EA-18G aircraft delivered. All assets, equipment and spares delivered. All acquisition tasks completed and transitioned to sustainment organisation completed. MTTES operating at the Queensland and Northern Australian ranges <p>FMR is a future dated milestone projected for July 2022.</p>	Not yet achieved
Final Operational Capability (FOC)	<ul style="list-style-type: none"> Twelve Growler aircraft delivered and sufficient aircrew trained in Growler employment to meet contemporary preparedness requirements. All ALQ-99 assets delivered. Mature in-country logistics and operational support for training and deployment to two locations. The ability to deploy within AS and overseas to conduct Growler operations concurrently in one 	Not yet achieved

	major and one minor AO. FOC is a future dated milestone currently projected for August 2022.	
--	---	--

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a possibility that the level of Australian unique development required to meet the MTES requirements will need design, manufacture, integration and certification effort that cannot be completed within the MAA milestone dates (MR2, MR4 & MR6).	MTES has established an incremental delivery strategy due to delays for some long-lead items. MTES final increment deliveries will coincide with Growler FOC. During each increment of capability, the team will aim to identify areas of greatest technical risk and treat as appropriate.
There is a possibility that the Structural Life Of Type of the RAAF EA-18G aircraft may be inadequate to support the planned withdrawal date.	This was closed in November 2018. Risk has been effectively mitigated by participation in the USN F/A-18E/F Service Life Assessment & Extension Program. Management of residual risk was transferred to Growler sustainment organisation for ongoing management
There is a possibility that current USN doctrine and command and control structure for the EA-18G platform cannot be adequately modified for ADF operations.	The Growler Transition Team have successfully bid for resources to address this risk, and are engaging Headquarters Joint Operations Command (HQJOC) to develop and improve command and control frameworks and processes. This risk has closed, and the residual risk is now being managed in the broader context of ADF doctrine and C4I for joint EMS operations, as discussed in the following section.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
There is a possibility that the Growler utilisation will be restricted by a lack of process, people and ICT tools to manage joint electromagnetic spectrum operations leading to reduced capability.	The project is providing seed funding for the Growler Innovation Support Team within JC4ISPO to manage the development of Decision Support Tool Concept Technology Demonstrator.
There is a possibility that some stores configurations will not be cleared for Growler use by MR5.	Priority is being given to releasing training capabilities while working with DASA and Boeing to streamline the clearance process.

5.2 Major Project Issues

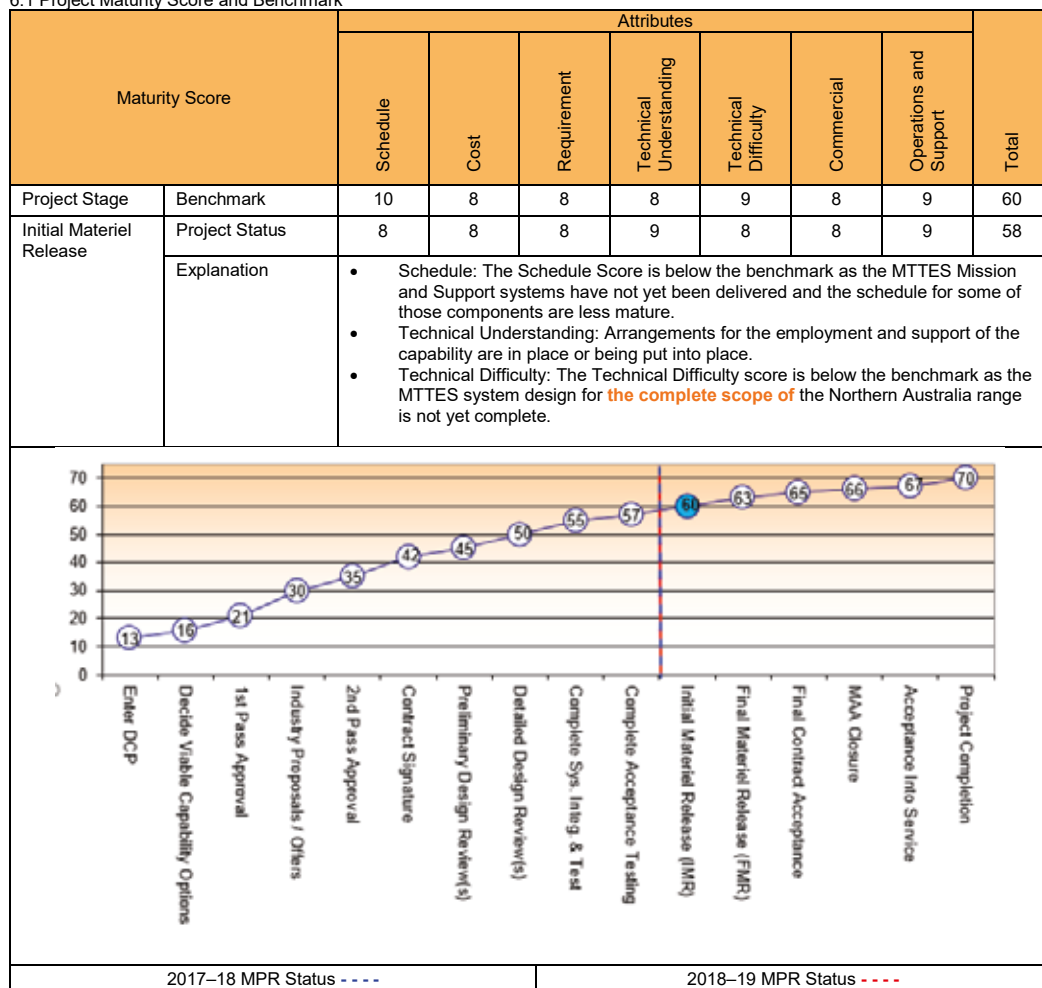
Description	Remedial Action
Late Delivery of MTES Systems and Advanced MTES Systems for Queensland and Northern Australia training ranges.	Certification of MTES Prime Products for Queensland was due in October 17. Delivery of the first Advanced MTES Prime Product is due in July 19, however there is a forecast delay. Delays are being mitigated by use of alternative systems and an incremental approach to the delivery of training capability. Additional US based training has been scheduled to ensure aircrew training is accomplished.
Late Delivery of Advanced MTES Systems for Queensland training range. This constituted a caveat to IOC.	Delivery of the first Advanced MTES Prime Product is due in July 19, however there is a forecast delay. Delays are being mitigated by use of alternative systems and an incremental approach to the delivery of training capability. Additional US based training has been scheduled to ensure aircrew training is accomplished.
Northern Australian Ranges facilities over budget.	This issue was closed in January 2019 following approval of a Real Cost Increase to the Growler Facilities project and realignment of budget to enable completion of facilities effort without delay through FY20/21.
Current accreditation and assurance policy and processes are not structured to accommodate the unique elements of the MTES.	Relevant accreditation authorities have been identified and engaged. Procedural work-arounds are being used to minimise the impact on aircrew training outcomes while suitable modifications to the accreditation framework are developed.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
For appropriate management according to Defence best practice benchmarks, allocation of project management resources is required immediately on project approval, particularly for projects with primarily FMS acquisition strategies. These projects inherently experience significant lag between Second Pass approval and schedule and financial management maturity, due to the lag between FMS case establishment and initial prime acquisition contracts when compared to commercially based acquisitions. The delay in achieving maturity benchmarks are only exacerbated when resourcing is not applied early in the acquisition life cycle.	Resourcing
Workforce planning considerations need to capture project drawdown and closure resourcing requirements. If the project workforce is reduced too early, or if key roles are not maintained there is risk to project performance and good governance.	Resourcing

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Gregory Hoffmann
Project Director	Ms Justine Baker
Project Manager	WGCDR Andrew McRae

Project Data Summary Sheet¹⁴⁵

Project Number	LAND 121 Phase 3B
Project Name	OVERLANDER VEHICLES (MEDIUM AND HEAVY VEHICLES, MODULES AND TRAILERS)
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Army
Government 1st Pass Approval	Jun 04 – Phase 3 Dec 11 – Phase 3B
Government 2nd Pass Approval	Aug 07 – Phase 3 Jul 13 – Phase 3B
Budget at 2 nd Pass Approval	\$3,284.7m
Total Approved Budget (Current)	\$3,399.9m
2018-19 Budget	\$628.9m
Project Stage	Initial Materiel Release
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND 121 Phase 3 was established to replace the current fleet of Australian Defence Force (ADF) Field Vehicles, Modules and Trailers (FVM&T) and will enhance the ground mobility of the ADF.

In December 2011, Government approved the splitting of LAND 121 Phase 3 into two projects:

- LAND 121 Phase 3A – Lightweight and Light Capability (LLC), incorporating the approved Phase 5A; and
- LAND 121 Phase 3B – Medium and Heavy Capability (MHC).

LAND 121 Phase 3B will upgrade and replace the existing medium and heavy vehicle and trailer fleet. Vehicles (protected and unprotected) consisting of nine variants, will be introduced by the project including cargo, tractor, recovery and tanker functions. Ten trailer variants for general cargo, equipment transport, and tanker capability will also be acquired. Fleet flexibility will be supplemented by flatracks and modules that will permit the rapid deployment of stores (including maintenance and combat engineering), fuel and water tankers and specialist bridging capabilities.

The following vehicles, trailers and modules will be acquired:

- 2,536 MHC vehicles and 3,054 modules supplied by Rheinmetall MAN Military Vehicles Australia (RMMVA);
- 1,582 trailers from Haulmark Trailers (Australia);
- 122 Geländewagen (G-Wagon) fitted with maintenance modules supplied by Mercedes-Benz Australia / Pacific Pty Ltd and associated trailers supplied by Haulmark Trailers (Australia) Pty Ltd (HTA), acquired by LAND 121 Phase 3A;
- 49 in-service Bushmaster Protected Mobility Vehicles upgraded to customised General Maintenance Vehicle variants and associated trailers;
- 18 Line Laying Modules acquired by LAND 121 Phase 3A; and
- A further 664 specialist modules are to be acquired. **Procurement activities will commence once Army's requirements are mature.**

1.2 Current Status

Cost Performance

In-year

As at 30 June 2019, financial year 2018-19 expenditure was \$586.7m against a budget of \$628.9m. The EOFY variation is primarily due to an offset from LAND 121 Phase 3B to LAND 121 Phase 5B as approved by Assistant Secretary Finance - ARMY for milestones brought forward and invoices not paid due to Defence Portfolio Budget pressures.

[Project Financial Assurance Statement](#)

145 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

<p>As at 30 June 2019, Project LAND 121 Phase 3B has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure. Defence considers as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.</p> <p><u>Contingency Statement</u></p> <p>The project has not applied contingency funds in the financial year.</p>
<p>Schedule Performance</p> <p>Phase 3B has progressed through the design phases for all contracted vehicles, modules and trailers. While Stop Payments have been invoked on RMMVA, the RMMV Executive Board continues to monitor contract performance and progress in the achievement of targets.</p> <p>Haulmark Trailers (Australia) Pty Ltd (trailers) continue to provide deliverables as required under the contract.</p> <p>Due to early delays, schedule performance is closely monitored. The Project achieved the Initial Materiel Release (IMR) milestone in November 2018, ahead of the latest scheduled date of December 2018, and is now focussed on achieving Initial Operational Capability (IOC) by the originally planned date of December 2019.</p>
<p>Materiel Capability Delivery Performance</p> <p>Affordability will impact the overall capability, with costs being managed by maximising off-the-shelf solutions.</p> <p>As at 30 June 2019 Rheinmetall MAN Military Vehicles Australia has delivered 2,120 of 2,536 vehicles and 2,545 of 3,054 modules.</p> <p>Haulmark Trailers (Australia) has delivered 1,068 of 1,582 matched trailers.</p>
<p>Note</p> <p>Forecast dates and capability assessments are excluded from the scope of the review.</p>

1.3 Project Context

<p>Background</p> <p>Project LAND 121 is a multi-phased project to provide the ADF with the FVM&T and associated support systems to meet ADF mobility requirements including logistic distribution, command and liaison, casualty evacuation, troop lift, and the provision of mobility for specialist assets such as command shelters and communications terminals.</p> <p>At the time Government approved LAND 121 Phase 3 the ADF's FVM&T fleet consisted of some 7,300 vehicles and 3,700 trailers acquired progressively from 1959. By 2008, 98 percent of the current assets had exceeded their life of type. The fleet was increasingly costly to maintain, repair and operate. Furthermore, the increased operational tempo from 1999 has compounded the challenges faced by the fleet to provide the mobility needs required by the ADF.</p> <p>LAND 121 Phase 3 was approved in August 2007 to acquire 1,187 Mercedes-Benz G-Wagons, and 973 matching trailers from HTA. In August 2011, Government approved the acquisition of an additional 959 G-Wagons and 826 trailers under LAND 121 Phase 5A via the contracts negotiated for Phase 3.</p> <p>Phase 3 was also intended to acquire medium and heavy FVM&T; however, the Commonwealth withdrew from negotiations with the preferred tenderer, and a tender resubmission process was initiated in December 2008. In December 2011, Defence announced negotiations would commence with the preferred tenderers, RMMVA for the MHC vehicle and module requirements and with HTA for the MHC trailer requirements.</p> <p>Strictly, MOTS items were not considered appropriate as modifications are required to achieve:</p> <ul style="list-style-type: none"> • compliance with Australian Design Regulations; • a requirement for vehicles to interface with in-service and new Australian designed trailers and modules; and • integrate with in-service communication equipment. <p>In a related decision at the same time, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A for the LLC approved under Phase 3 and amalgamating this with the additional scope approved under Phase 5A; and LAND 121 Phase 3B to progress the Phase 3 MHC scope elements. This decision effectively closed Phase 3 and amounted to a combined pass approval for the new Phase 3A and an 'interim pass' approval for the new Phase 3B. The December 2011 approval allowed the continuation of contracted activities toward the LLC acquisition and the ongoing negotiations for the MHC contracts for Phase 3B. Phase 3B was required to seek a supplementary second pass approval following contract negotiations.</p> <p>The Phase 3A LLC Contract Amendments were executed in January 2012 and Phase 3B achieved second pass approval in July 2013 and contracts were executed shortly after.</p>
<p>Uniqueness</p> <p>LAND 121 Phase 3B is to deliver the FVM&T capability to multiple locations throughout Australia and on operational service overseas. This presents a unique logistic challenge in having a robust Support System that will achieve stated availability requirements for the lowest life cycle cost.</p>
<p>Major Risks and Issues</p> <p>The project is currently managing the following major risks:</p> <ul style="list-style-type: none"> • Changes to system specifications; • Integration of new generation communication (C4I) – vehicles; • Access to public roads; • Support and Maintenance not fully developed; and • Achievement of Final Acceptance. <p>The project is also managing the following project issues:</p> <ul style="list-style-type: none"> • Subcontractor engagement; • Project interface and integration issues; • 42M Medium Recovery vehicle;

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

- Implementation of Rework Programs;
- Integrated Logistics Support Acquisition Delays;
- Technical Certification delay; and
- 45M Heavy Recovery Vehicle training delay.

Other Current Related Projects/Phases

LAND 121 is a multi-phased project providing the ADF with current-generation high-capability field vehicles, modules and trailers. Other LAND 121 projects are:

LAND 121 Phase 4 will acquire and deliver into service 1,100 Protected Mobility Vehicles – Light (PMV-L) and 1,058 associated trailers. The PMV-L will perform command, reconnaissance, liaison and utility roles.

LAND 121 Phase 5B, approved in June 2018, will acquire and deliver into service an additional (to Phase 3B) 1,044 vehicles with 872 modules and 812 trailers.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Dec 11	At Original Approval (Phase 3 Project Budget prior to split into 3A and 3B)	3,237.7	1
Jun 12	Exchange Variation	(66.5)	
Jun 12	Budget as at 30 June 2012	3,171.2	
Jul 12	Real Variation – Scope (Funds retained by 3A)	(622.0)	2
Jul 12	At Original Approval (Phase 3B Project Budget after split from Phase 3)	2,549.2	
Jul 12	Exchange Variation to opening budget	23.3	3
Jul 13	Real Variation – Scope	7.0	4
Jul 13	Real Variation – Scope	21.0	5
Jul 13	Real Variation – Project Supplementation	684.2	6
		735.5	
	Total at Revised Second Pass Approval	3,284.7	
Nov 18	Real Variation – Budgetary Adjustment	(30.0)	7
Jun 19	Exchange Variation	145.2	
Jun 19	Total Budget	3,399.9	
Project Expenditure			
Prior to Jul 18	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	(1,328.9)	
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(199.9)	
	Rheinmetall MAN Military Vehicles Australia (Support)	(6.8)	
	Other Contract Payments / Internal Expenses	(127.2)	8
		(1,662.8)	
Jun 19	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	(466.3)	
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(91.9)	
	Rheinmetall MAN Military Vehicles Australia (Support)	(4.8)	
	Other Contract Payments / Internal Expenses	(23.8)	9
		(586.8)	
Jun 19	Total Expenditure	(2,249.6)	
Jul 19	Remaining Budget	1,150.3	
Notes			
1	Phase 3 project budget prior to the split into Phase 3A and Phase 3B.		
2	Retention of Light Capability scope by LAND 121 Phase 3A.		
3	Update of exchange rates from approval to 2012–13 PBS rates.		
4	Transfer of funds from LAND 116 Phase 3 for acquisition of trailers.		
5	Transfer of funds from JP 2059 Phase 2 Bulk Liquid Distribution for acquisition of some vehicles and associated equipment to facilitate fuel and water transportation.		

6	Provision for general program supplementation associated with easing cost pressures identified during scoping for project approval, as per revised second pass approval.
7	Budget Adjustment of \$30.0m was approved by Government in Nov 18 The \$30.0m adjustment from LAND 121 Ph 3B will be returned to the budget of LAND 121 Ph 5B in 2023-2024. LAND 121 Ph 5B relates to the acquisition and delivery into service of an additional 1,044 vehicles, 872 modules and 812 trailers. LAND 121 Ph 3B and LAND 121 Ph 5B are managed by the same project team at Defence.
8	Other Expenses comprise of (\$42.0m) for the acquisition of G-Wagons by LAND 121 Phase 3A on behalf of LAND 121 Phase 3B, (\$32.1m) for salaries, (\$16.8m) for the Protected Mobility Vehicle, and (\$36.3m) for other project office costs not associated with the prime contracts.
9	Other Expenses comprise of (\$1.1m) for the Protected Mobility Vehicle, (\$8.8m) for salaries, and (\$13.9m) for other project office costs not associated with the prime contracts.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
627.6	638.8	628.9	PBS to PAES: The variation is due primarily to updates to exchange rates. PAES to Final Plan: Variance is due to refinement of ILS Plan at Estimates.
Variance \$m	11.2	(9.9)	Total Variance (\$m): 1.3
Variance %	1.8	(1.5)	Total Variance (%): 0.2

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	Variance relates primarily to an offset from LAND 121 Phase 3B to LAND 121 Phase 5B as approved by ASF-A for milestones brought forward and invoices not paid due to Defence Portfolio Budget pressures.
			Foreign Industry	
			Early Processes	
		(42.2)	Defence Processes	
			Foreign Government Negotiation/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
628.9	586.7	(42.2)	Total Variance	
		(6.7)	% Variance	

2.3 Details of Project Major Contracts

3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Rheinmetall MAN Military Vehicles Australia (Acquisition)	Jul 13	1,585.9	2,024.4	Variable	ASDEFCON	1, 2, 3
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	Jul 13	397.7	502.6	Variable	ASDEFCON	1, 2
Rheinmetall MAN Military Vehicles Australia (Support)	Jul 13	32.3	46.7	Variable	ASDEFCON	1, 2
Notes						
1	Additional vehicles and trailers, worth \$28.3m and \$4.7m respectively, were funded and procured by LAND 121 Phase 3A, on behalf of the LAND 121 Phase 3B project.					
2	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates of EURO 0.6171 on 28 June 2019, and includes adjustments for indexation (where applicable).					
3	Price at 30 June 19 varies from Price at Signature due to contracted price escalation, and contract changes related to in-scope capability and support.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Rheinmetall MAN Military Vehicles Australia (Acquisition)	2,536	2,536	MHC vehicles with associated modules.	1		
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	1,582	1,582	MHC Trailers.	1		
Rheinmetall MAN Military Vehicles Australia (Support)	N/A	N/A	MHC Support Contract for vehicles and modules.			
Major equipment received and quantities to 30 Jun 19						
As at 30 June 2019 Rheinmetall MAN Military Vehicles Australia has delivered 2,120 of 2,536 of the following vehicles:						
<ul style="list-style-type: none">- Mediumweight Tray: 80% Complete;- Mediumweight Tray with Crane: 84% Complete;- Mediumweight Tipper (dump): all deliveries completed;- Heavy Integrated Load Handling: 98% Complete;- Heavy Tipper: 81% Complete;- Heavy Tractor: 73% Complete;						

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

<ul style="list-style-type: none"> - Medium Recovery : 21% Complete; - Heavy Recovery: 73% Complete; and - Heavy Tanker: 68% Complete. <p>and 2,545 of 3,054 of the following modules:</p> <ul style="list-style-type: none"> - Flatracks: all deliveries completed; - Bridge Boat Interface: all deliveries completed; - Mediumweight Combat Engineer Section Stores: 60% Complete; - Mediumweight Maintenance: 58% Complete; - Mediumweight Stores: 36% Complete; - Heavy Stores: 49% Complete; - Heavy Bulk Fuel Pump and Storage: 30% Complete; - Heavy Bulk Fuel Storage: 50% Complete; - Heavy Bulk Water Pump and Storage: 31% Complete; and - Heavy Bulk Water Storage: 55% Complete. <p>As at 30 June 2019 Haulmark Trailers (Australia) has delivered 1,068 of 1,582 of the following matched trailers:</p> <ul style="list-style-type: none"> - Medium weight Cargo trailers: 62% Complete; - Heavy ILH trailers: 86% Complete; - Heavy Equipment Trailers: 81% Complete; - Medium Equipment Transporters: 44% Complete; - Heavy Bulk Fuel Tankers: 86% Complete; - Heavy Equipment Transporters: 18% Complete; - Dolly Low Loaders: 84% Complete; - Heavy Cargo trailers: 35% Complete; - Heavy Bulk Water Tankers: 50% Complete; and - Dolly Road Trains: 19% Complete.
Notes
1 The quantity figures being communicated publicly excludes vehicle and trailer prototypes.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Preliminary Design	Vehicles	Dec 14	Aug 15	Dec 15	12	1, 2
	Modules	Aug 14	Feb 15	Mar 15	7	1, 2
	Trailers	Jun 16	Jan 17	Jan 17	7	1, 3
Detailed Design	Vehicles	May 15	Sep 16	Jun 17	25	1, 2
	Modules	Nov 14	Jun 15	Mar 16	16	1, 2
	Trailers	Jan 17	Jul 17	Jun 17	5	1, 3
Critical Design	Vehicles	Aug 15	Jan 17	Dec 17	28	1, 2
	Modules	Mar 15	Nov 15	Sep 16	18	1, 2
Notes						
1	All dates represent the Approval of the exit for the Reviews of the last vehicle, module and trailer variants. All vehicles, contracted modules and trailers have now completed preliminary, detailed and critical design review processes.					
2	Vehicle and Module Variance is due to two replans. The first was due to major delays in finalisation of contracts between the prime contractor and its subcontractors. The second was an adjustment to the schedule by the contractor in order to reduce production risks by concentrating on the most mature vehicle variants and slower ramping up of Protected Vehicles.					
3	Trailer Variance is due to a change in scope by the CoA to Group C Trailers.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration, Acceptance Test and Evaluation (AT&E)	Vehicles	Jul 16	Aug 18	Nov 19	40	1, 2, 3, 4, 7
	Modules	Nov 15	Jun 17	Oct 19	47	1, 2, 3, 4, 5, 7
	Trailers	Sep 17	May 18	Jun 18	9	1, 6
Notes						
1	All dates represent the Approval of the Acceptance Verification Reports for the tests of the last vehicle, module and trailer variant.					
2	Delays by RMMVA to secure its subcontractor has impacted the completion of verification.					
3	Senior management attention (Defence and the RMMV Board) is expected to improve the schedule performance for completion of acceptance test and evaluation.					
4	Current Planned Date changes to Vehicles and Modules are IAW CCP064 signed 15 July 2016.					
5	A Contract Change Proposal IAW CCP 117 signed 13 July 2017 was executed to address an additional nine month variance associated with RMMVA sub-contractor, Holmwood Highgate delay in progressing the Liquid Module Program.					
6	Current Planned Date changes are IAW Group C Integrated Baseline Review (June 2016) outcomes and agreements.					

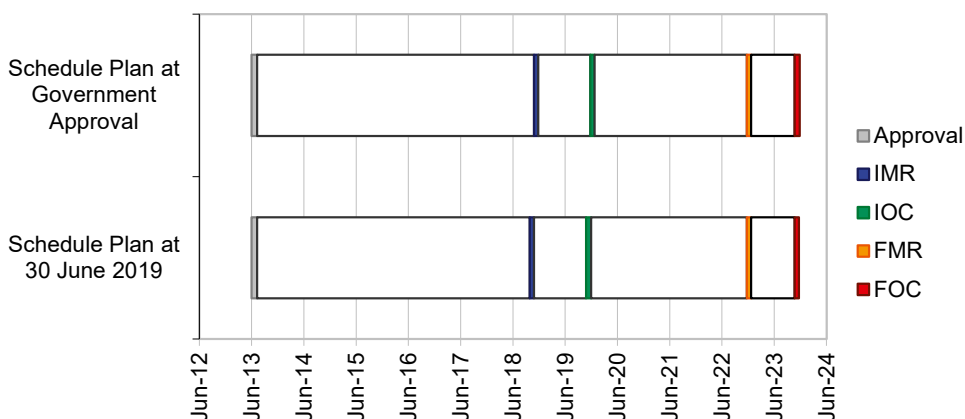
7	Revised Achieved/Forecast date relates to outcomes arising from the Verification Readiness Review of the Medium Recovery Vehicle where final Acceptance Verification & Validation for this vehicle is scheduled to be finalised by November 2019. Revised Achieved/Forecast dates for the Bulk Liquid Modules relates to the resubmission of a number of Acceptance Verification Reports. These are expected to be finalised by October 2019.
---	---

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Note
Initial Materiel Release (IMR)	Dec 18	Nov 18	(1)	1, 2
Initial Operational Capability (IOC)	Dec 19	Dec 19	0	1
Final Materiel Release (FMR)	Dec 22	Dec 22	0	1
Final Operational Capability (FOC)	Dec 23	Dec 23	(0)	1

Notes	
1	All variances are forecast to be achieved on or ahead of planned dates and are a reflection of estimated planned work required to achieve MAA milestones.
2	Initial Materiel Release was achieved one month earlier than forecast due to all elements of Initial Materiel Release being satisfied and agreed with the Capability Manager in November 2018.

Schedule Status as at 30 June 2019



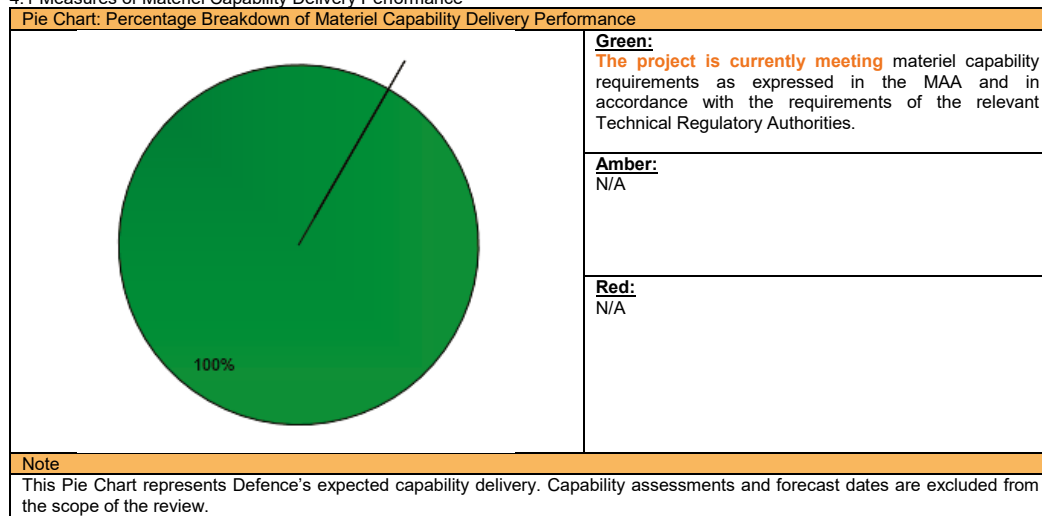
Note
Forecast dates in Section 3 are excluded from the scope of the review.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR requires the following to be delivered: 659 medium and heavy vehicles, 436 modules, 57 trailers, sufficient training for operators and maintainers to support Army's introduction into service plan and adequate logistic support arrangements. Achieved November 2018.	Achieved
Initial Operational Capability (IOC)	IOC requires the following to be delivered: Based on a Protected Battle Group, which is approximately 100 vehicles, deployed on a Major Defence Training activity (Exercise TALISMAN SABRE or equivalent). Forecast achievement December 2019	Not yet achieved
Final Materiel Release (FMR)	FMR requires the following to be delivered: 2,707 medium and heavy vehicles, 3,858 modules, 1,753 trailers, achieve the Directed Training Requirement across the entire medium and heavy capability for operators and maintainers and logistic support arrangements. Forecast achievement December 2022.	Not yet achieved
Final Operational Capability (FOC)	FOC requires the following to be delivered: Complete delivery of 2,707 vehicles, 1,753 trailers and 3,858 modules acceptance and introduction into service to meet Chief of Army Preparedness Directive requirement to deploy and support a Multi Role Combat Brigade and concurrent Battle Group on operations. Forecast achievement December 2023	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Changes to system specifications. There is a chance that the project will be affected by changes to system specifications leading to Contract Change Proposals which will impact on cost and schedule.	Development of a decision log. Changes will only be considered on formal advice from Army and will include costs and risks. The project team has worked with relevant stakeholders to assess proposed changes resulting from design reviews. While a number of Contract Change Proposals have been generated to reflect agreed outcomes of the design reviews, there has been no impact on schedule, and costs are being managed within the approved budget.

	<p>This risk continues to diminish as the design review process is completed. However, some engineering changes are being considered as a result of verification and validation activities.</p> <p>This risk will remain active until the completion of verification and validation activities.</p>
<p>Integration of new generation communication equipment (C4I) – vehicles.</p> <p>There is a chance that the project will be affected by the complexities of delivering MHC vehicles with an integrated C4I solution impacting on performance, cost and schedule.</p>	<p>Monitor and Review RMMVA performance.</p> <p>This risk continues to be managed through the establishment of a working group involving RMMVA as the Prime System Integrator, and Thales as the Subject Matter Expert.</p> <p>The project has digitised a significant quantity of trucks with C4I fit in order to meet AHQ defined digitisation C4I package. 150 vehicles were digitised, with the C4I technical certification package received in August 2018.</p> <p>This risk is expected to be retired when Army confirms if there is a requirement for the Medium and Heavy Recovery Vehicles to be digitised.</p>
<p>Access to Public Roads.</p> <p>There is a chance that the MHC will be affected by the States and Territories (S&Ts) delaying certification and/or not issuing the appropriate permits for operational use which may impact on schedule, cost, performance and reputation.</p>	<p>Develop and agree to a strategy with States and Territories.</p> <p>Defence continues to lead negotiations with the States and Territories. Visits by LAND 121 Phase 3B and Strategic Logistics Branch (JLC) to all States and Territories have been completed. JLC will incorporate LAND 121 Phase 3B vehicle and trailer combinations iteratively into the Defence Road Transport Exemption Framework (DRTEF) as Defence reviews road access confirmation from individual States and Territories.</p> <p>States and Territories access is actively discussed at each IPT (held monthly) with all stakeholders. In 2019, Army stood up Heavy Vehicle Management Cell, now the Land Vehicle Safety Cell, to be the central POC for all permit issues with states and territories. To assist with permit applications, CASG generated an approved, set of Technical Data to use as basis for all permit applications.</p>
<p>Support and Maintenance not fully Developed.</p> <p>There is a chance that the MHC contracted Support and Maintenance Services (relating to the provision of spare parts, and after sales support for the protected variant and stores modules) will be affected by RMMVA not meeting their contractual obligations impacting on cost, schedule, performance and supportability.</p>	<p>This risk is being mitigated by close monitoring and engagement with RMMVA through regular Combined Services Performance Reviews. The provision of spares is being resolved as RMMVA are to establish a production facility in Queensland by 2021, which will also provide a long term solution for the protected variant repairs where an interim solution is currently in place. The after sales support for modules is under discussion with RMMVA.</p>
Emergent Risks (risk not previously identified but has emerged during 2018–19)	
Description	Remedial Action
<p>Achievement of Final Acceptance.</p> <p>There remains a significant volume of Contract Data Requirements Lists (CDRLs), Action Items and rework to be completed by RMMVA across Trucks and Modules for them to meet the exit criteria for Final Acceptance Milestones A and B.</p>	<p>Working closely with RMMVA management to address the issues.</p> <p>Raised at March 2019 Strategic Relationship Board and escalated to the highest levels of RMMVA senior management in Australia and Germany. RMMVA to present progress against remaining deliverables in fortnightly VIDCON for Commonwealth awareness/oversight.</p>

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

5.2 Major Project Issues

Description	Remedial Action
<p>Subcontractor engagement.</p> <p>The project has been affected by the delay to subcontractor engagement impacting on schedule, cost, performance and reputation.</p>	<p>CoA to undertake financial, capacity and viability assessment of subcontractors.</p> <p>All key subcontractors have now been engaged. The delay in engaging the subcontractors has impacted on the conduct of design reviews for some module elements. Performance issues initially identified with Varley have been resolved. RPC Technologies' performance issues have been addressed. The Holmwood Highgate contract schedule was amended to reflect changes to their delivery schedule however there are no impacts to the achievement of MAA milestones.</p> <p>This issue is being closely managed by the Project Manager after initial involvement by the Assistant Secretary. Weekly updates continue to be provided from RMMVA to assess progress.</p> <p>The project continues to engage with RMMVA and Holmwood Highgate regularly to track the build and delivery of the first 16 bulk liquid modules, which have been received. RMMVA has advised of some part shortages and this is being actively managed through the RMMVA supply chain and is being closely monitored. Project is engaging with RMMVA and Varley on a regular basis to track the build and delivery of the stores batches. Acceptance of batches has been impacted by quality issues identified with Medium and Heavy stores and this is being actively managed by RMMVA & reported weekly to the project. Varley module rework planning has progressed with escalation from RMMVA and CoA.</p>
<p>Project interface and integration issues. The MHC has encountered technical engineering and project management integration and interface issues. Integration issues include issues between vehicles, modules and/or trailers, impacting on performance. The Bridge Boat Interface issue from the prior year PDSS has been rolled up into this project issue.</p>	<p>The Project integration issues are being actively managed with three key focus areas. The Hydraulic connectors between the Truck Tractor and Trailers has been identified as an issue and a Request for Proposal has been issued to RMMVA to install the correct hydraulic connectors. The second issue is the Park Brake Interlock capability between the ILH Truck, Trailers and Bulk Fuel Modules. RMMVA have proven a solution through testing and the quote has been accepted by the Commonwealth. Hydraulic interfaces have been reviewed during Group C trailer testing and have been found to be satisfactory with minor changes required. The Park Brake Interlock solution has been addressed. Electrical interfaces are still to be implemented on the vehicle and tested prior to conduct of pilot training in August 2018. The Bridge Boat Interface integration issue is being remediated via a Contract Change Proposal with RMMVA.</p>
<p>42M Medium Recovery Vehicle</p> <p>The project has been affected by the delay in design and verification of the 42M recovery vehicle, and further delays to the delivery schedule impacting on cost, schedule and performance.</p>	<p>Critical Design Review exit was achieved in December 2017, where RMMVA advised that additional schedule was required in order to address technical, quality and production issues, and to allow RMMVA to implement lessons learnt from the 45M integration process to the 42M integration process. The project is actively managing this issue with regular workshops and meetings held with RMMVA. CCP156 agreed to amend the delivery schedule to meet RMMVA's revised production schedule. MAA deliverables will not be impacted.</p> <p>First of type vehicles have been delivered as per CCP156. Some production and parts sourcing issues have been identified by RMMVA. These are being managed by dual sourcing parts when needed. CoA continues to closely track and manage 42M delivery.</p>
<p>Implementation of Rework Programs</p> <p>RMMVA have delivered vehicles and modules that have minor omissions or defects that will require remediation after Commonwealth Acceptance (via the raising of SG2s at the time of Acceptance) impacting on performance.</p>	<p>Re-work plans were briefed to Commonwealth representatives in May 19 and agreement to commence rework in Quarter 2 2019 was reached. The project Sustainment and Acquisition teams are working collaboratively to ensure rework programs will be implemented effectively.</p> <p>Stakeholder communication provided at all levels in regards to rework required.</p> <p>Technical Certifications detail all use restrictions relating to rework required to ensure safety is addressed.</p>
<p>ILS Acquisition Delays</p> <p>The capability has been affected by delays in codification and spares acquisition from RMMVA, impacting on reputation.</p>	<p>Issues raised with RMMV senior management at the March 2019 Strategic Relationship Board. RMMV to focus on resolution with progress to be examined at least monthly (until Final Acceptance milestone achieved).</p>

<p>Technical Certification delay.</p> <p>The project is affected by the technical restrictions being in place at the time of vehicle's acceptance, impacting on schedule, performance and reputation.</p>	<p>Monitor and Review RMMVA performance. The project office is working closely with RMMVA to ensure that deliverables are accepted in accordance with technical documentation and where needed, with the appropriate SG2.</p> <p>RMMVA have submitted a plan for the remediation of SG2s, which is being discussed with AHQ for scheduling remediation to unit deployed assets and the fleet at Meeandah.</p> <p>Warranty and Latent Defect contract clauses will also be utilised if required.</p>
<p>45M Heavy Recovery Vehicle training delay</p> <p>The trial operator Heavy Recovery Mission System training course was scheduled to commence in February 2018. However, this was not achieved due to technical restrictions limiting the safe conduct of the course coupled with uncertainty in obtaining the required permits and deficiencies in training preparedness deliverables from RMMVA.</p>	<p>This became an issue due to the February 2018 trial operator training course being rescheduled to May 2018 in accordance with CCP156.</p> <p>The decision to postpone the pilot course was made in consultation with AHQ and FORCOMD. Close engagement with RMMVA will continue to ensure that the revised schedule is achieved. Regular meetings and workshops are being conducted to ensure that preparedness and mitigations to technical issues are progressing.</p> <p>The HRV pilot course commenced in May 2018 and was successfully completed at the end of June 2018. User feedback has been positive with some minor changes needed to training plans and documentation. The course will be taken to the Learning Implementation Board (LIB) for endorsement to run as an IIS course. This issue is to be reviewed for context and applicability as an outcome of the course assessment.</p> <p>This issue has been closed as Introduction Into Service training has commenced and vehicles are being delivered in accordance with the roll-out plan.</p>

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

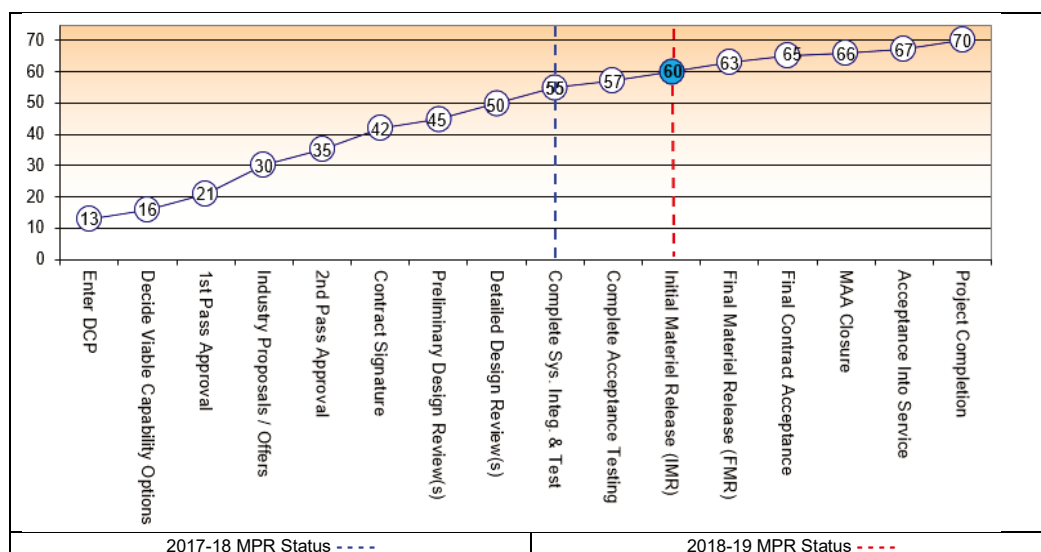
Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	8	8	9	9	8	9	60
	Explanation	<ul style="list-style-type: none"> Schedule: Concurrent activity and schedule float contribute to high confidence that schedule will be within the tolerance of the Materiel Acquisition Agreement. Final Materiel Release is expected to be achieved on schedule in December 2022. Technical Understanding: Technical data and Intellectual Property provisions will allow Defence to operate, support, maintain, modify and dispose the materiel elements of the capability. Score is above the benchmark as knowledge has been transferred to Army and liaison occurs through regular formal engagements, such as Integrated Project Team meetings, working groups and written correspondence. 							

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Government should refrain from announcing preferred tenderers until negotiations are complete. Public announcements undermine negotiation leverage and may provide detail which is subject to change during negotiations.	Contract Management
Projects must have a robust suite of up-to-date capability documents (Operational Concept Document and Functional Performance Specification) available during tender evaluation and negotiations to provide critical contextual information for the negotiation team. These documents also provide the framework for the acquisition authority and capability manager to conduct an informed acceptance process.	Requirements Management
It is key that requirements are fully agreed before negotiations commence to avoid any uncertainty and potential for delays.	Requirements Management
Where doubt exists in relation to compliance claims and/or significant risk is apportioned to a performance requirement, project teams should seek Objective Quality Evidence (OQE) during tender evaluation, so claims of fitness for purpose are supportable and evidence required during Design Acceptance, and AT&E is minimised.	Requirements Management
For projects of this size and complexity, team members require highly developed project management and contracting skills and experience. In preparing for LAND 121 Phase 3B contract negotiations, the need was identified for external expertise and advice to support the negotiation process. The presence of an experienced negotiator and technical adviser was key to being able to negotiate a successful contract.	Contract Management
The effort involved with the vehicle/module/trailer interface (including all interfaces between elements of the prime equipment) should not be underestimated even for apparently simple equipment. The early formation of interface working groups is critical.	Contract Management
Early involvement of Army Logistic Training Centre (ALTC) staff in the development of the Training requirement is mandatory. This includes reviewing the ASDEFCON template DID ILS-910 and relevant clauses pertaining to training and participation in preliminary meetings to the Initial Training Conference. Propose a preliminary brief by ALTC to define expectations and 'fit' to contractual requirements.	Resourcing
Government Furnished Equipment (GFE) lists should be continuously developed and updated while the system specifications and statement of work are still subject to negotiations and potential variation, to ensure all items on the contracted GFE list are available and sourced.	Contract Management
Ensure contractual provisions require the contractor to have executed contracts with Approved Subcontractors within a specific time following contract execution, so as to avoid impact on contract deliverables and slippage to key engineering reviews.	Contract Management
'Mancats' is a vehicle diagnostic tool that can be used with the fleet of RMMVA vehicles being acquired. A lesson learned from LAND 121 Phase 3A (G-Wagons) was to lease, and not buy, the vehicle diagnostic tool. Leasing reduces the risk of hardware and firmware redundancy, and is a better value for money option for the Commonwealth. LAND 121 Phase 3B is negotiating an appropriate lease arrangement with RMMVA for 'Mancats'.	Contract Management

An AT&E program should consider risk and performance requirements to determine whether OQE can be provided by prime contractors and their parent companies to support claims of fitness for purpose in lieu of testing. During negotiations all claims of compliance should be reflected in the qualification method to be used in the AT&E program.	Contract Management
Co-locating the Army School of Transport training team within the CASG Project Office has proven beneficial by allowing for close collaboration and enhanced communication between the two groups. In addition, it has allowed end user input into the vehicle development and supporting processes. The training team have also acted as ambassadors of the capability in their interactions with the wider user group.	Resourcing

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	MAJGEN Andrew Bottrell
Branch Head	Ms Sarah Myers
Project Director	COL Ken Heany
Project Manager Vehicles and Modules	Ms Alecia Millard
Project Manager Trailers	Mr Brenden Loton

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁴⁶

Project Number	AIR 9000 Phase 8
Project Name	FUTURE NAVAL AVIATION COMBAT SYSTEM
First Year Reported in the MPR	2011-12
Capability Type	Replacement
Acquisition Type	MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Feb 10
Government 2nd Pass Approval	Jun 11
Budget at 2nd Pass Approval	\$3,029.6m
Total Approved Budget (Current)	\$3,212.5m
2018–19 Budget	\$142.1m
Project Stage	Initial Materiel Release
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

AIR 9000 Phase 8 has acquired 24 MH-60R Seahawk Romeo naval combat helicopters, associated weapons and support systems to replace the **previous** 16 S-70B-2 Seahawk Bravo helicopters and the cancelled SH-2G(A) Seasprite helicopters. The aircraft is equipped with a highly sophisticated avionics suite designed to employ Hellfire air-to-surface missiles and Mark (Mk) 54 anti-submarine torpedoes. The aircraft provide Navy with a contemporary helicopter with anti-submarine warfare (ASW) and anti-surface warfare capability.

The acquisition of 24 helicopters enable the Navy to deploy at least eight Seahawks embarked at sea across the ANZAC class frigates and the new *Hobart* class Air Warfare Destroyers (AWD).

1.2 Current Status

Cost Performance

In-year

End of financial year underspend of \$24.4m is primarily due to a Defence cash management decision to delay Quarter 4 FMS payment of \$11.9m and other invoices (\$1.2m). Contributing to this was an underspend for activities under the Foreign Military Sales (FMS) cases for AIR9000PH8 of \$4.4m due to reduced disbursements for the acquisition FMS case, and Guided Weapons Branch of \$8.1m due to production issues with explosive ordnance in the US offset by other minor overspends.

Project Financial Assurance Statement

As at **30 June 2019**, project AIR 9000 Phase 8 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

146 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

<p>Schedule Performance</p> <p>Materiel Release Three (MR3) was achieved 11 October 2018. This was defined as twenty four aircraft in United States Navy (USN) configuration accepted, with sufficient logistics support, including Ships Allowance Limit (SAL), Pack Up Kits (PUKs) and sufficient internal (crew served) machine guns to support eight flights at sea. The next major milestone will be Materiel Release Four (MR4), which is defined as:</p> <ul style="list-style-type: none"> • Weapons Acquisition Closure • Explosive Materiel Branch (EMB) Authorised Maintenance Organisations ready to sustain MH-60R Explosive Ordnance (EO) at the mature rate of effort • The transition of all AIR 9000 Phase 8 Weapons Air to Surface Missiles, Light Weight Torpedo's, non-guided EO and associated Support System Constituent Capabilities to the in-service support agencies. <p>Materiel Capability Delivery Performance</p> <p>The MH-60R Seahawk helicopter being procured is a Military Off the Shelf (MOTS) product from the USN. The MH-60R Seahawk has been in service with the USN since 2005 and was first deployed operationally by the USN in early 2010. The Australian Defence Force (ADF) has accepted delivery of 24 MH-60R aircraft, and there are currently no known impediments to the Project achieving the materiel capability performance requirements. The aircraft delivery schedule resulted in ADF MH-60Rs being delivered earlier than forecast at Second Pass.</p> <p>Note</p> <p>Forecast dates and capability assessments are excluded from the scope of the review.</p>
--

1.3 Project Context

<p>Background</p> <p>The Defence White Paper 2009 stated that 'As a matter of urgency, the Government will acquire a fleet of at least 24 new naval combat helicopters to provide eight or more aircraft concurrently embarked on ships at sea. These new aircraft will possess advanced ASW capabilities, including sonar systems able to be lowered into the sea and air-launched torpedoes, as well as an ability to fire air-to-surface missiles.'</p> <p>First Pass Approval for the acquisition of the Future Naval Aviation Combat System to satisfy this requirement was provided by Government on 24 February 2010.</p> <p>The selection of the MH-60R followed a competitive solicitation process between a US Government FMS case offering the Sikorsky / Lockheed Martin MH-60R Seahawk and a direct commercial sale from Australian Aerospace (now Airbus Group Australia Pacific (AGAP) offering the NATO Helicopter Industries NH90 NATO Frigate Helicopter. Second Pass Approval for acquisition of the MH-60R was provided by Government on 15 June 2011.</p> <p>Project SEA 5510 Stage 1 was approved by Government in June 2017, for the purpose of upgrading the MH-60R Seahawk's combat system, sensors, weapons and countermeasures throughout their operational life to maintain commonality and supportability with the United States Navy. AUD \$527.7m has been approved for Stage 1 from financial year 2018/19 to 2028/29.</p> <p>Uniqueness</p> <p>The Australian MH-60R helicopter has been acquired as a MOTS product, in the same baseline configuration as the USN aircraft. A limited number of Australian unique design modifications are being incorporated now that all aircraft have been delivered. The USN will develop the modifications for incorporation in Australian and USN MH-60R aircraft.</p> <p>The MH-60R is being acquired as a maritime combat capability. It will have limitations in utility roles such as passenger or cargo transfer.</p> <p>Major Risks and Issues</p> <p>The Project Office (PO) is currently managing two open risks with the highest level of pre-mitigation risk being medium, whilst also managing two open issues which are also rated as medium or below. However, there are currently no major risks or issues in achieving the MH-60R operational capability milestones on schedule.</p> <p>Other Current Related Projects/Phases</p> <p>Project AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS). HATS will be an important link in the training continuum for inductees to the MH-60R training system.</p> <p>Project AIR 9000 Phase 2/4/6 Multi-Role Helicopter. The acquisition of 47 helicopters to replace the current Army Black Hawk fleet and Navy Sea King fleet.</p> <p>Project SEA 5510-1 – MH-60R Capability Assurance Program (CAP) which was directed by Government to maintain a common baseline with the USN fleet of MH-60R aircraft.</p> <p>Project SEA 4000 Phase 3 Air Warfare Destroyer. AIR 9000 Phase 8 is to fund the modifications of the Hobart Class for interoperability with the MH-60R Seahawk 'Romeo' helicopter.</p> <p>Note</p> <p>Major risks and issues are excluded from the scope of the review.</p>

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Aug 09	Original Approved	0.3	1
Jun 10	Real Variation – Budgetary Adjustment	9.6	2
Jun 11	Government Second Pass Approval	3,019.7	
	Total at Second Pass Approval	3,029.6	
Jun 14	Real Variation – Budgetary Adjustment	(39.2)	3
Jul 10	Price Indexation	0.1	4
Jun 19	Exchange Variation	222.0	
Jun 19	Total Budget	3,212.5	
Project Expenditure			
Prior to Jul 18	Contract Expenditure – US Government (AT-P-SCF)	(1,876.0)	5
	Contract Expenditure – US Government (AT-P-AHV)	(113.3)	5
	Contract Expenditure – US Government (AT-P-KOA)	(53.8)	5
	Contract Expenditure – US Government (AT-B-ZBZ)	(20.2)	5
	Contract Expenditure – Navy – Empire Test Pilots' School	(7.4)	
	Contract Expenditure – US Government (AT-P-GTC)	(3.5)	5
	Other Contract Payments / Internal Expenses	(146.3)	6
		(2,220.5)	
FY to Jun 19	Contract Expenditure – US Government (AT-P-SCF)	(73.8)	5
	Contract Expenditure – US Government (AT-P-AHV)	(4.8)	5
	Other Contract Payments / Internal Expenses	(39.1)	7
		(117.7)	
Jun 19	Total Expenditure	(2,338.2)	
Remaining Budget			
Jun 19		874.3	
Notes			
1	This amount represents the project Budget prior to achieving Second Pass Approval by Government.		
2	Project Development Funds.		
3	Facilities Budget Transfer to Defence Support and Reform Group.		
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.1m, applied only to the portion of the budget approved at First Pass. From July 2010 all project budgets were approved by Government in out-turned dollars including AIR 9000 Phase 8.		
5	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
6	Other includes travel, contractor support, legal support, Non-FMS Procurements, ANZAC and AWD Ship Modifications, and general support activities.		
7	Other includes procurement of AWD Ship Integration of \$24.3m, Contractors Support of \$6.5m, ANZAC Ship Integration of \$4.1m, DSTG of \$1.3m, Spares and consumables of \$0.7m and other minor expenditure of \$2.2m including Freight, general support activities, travel, Resident Project Team and Technical Services.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
138.6	167.0	142.1	<p>PBS to PAES: The variance was due to a planned increase in production of explosive ordinance in the US and implementation of the AWD ship alteration package.</p> <p>PAES to Final Plan: The variance is due to lower than planned production of explosive ordinance in the US and delays in invoicing for work on ANZAC and AWD ship integration.</p>
Variance \$m	28.4	(24.9)	Total Variance (\$m): 3.5
Variance %	20.5	(14.9)	Total Variance (%): 2.5

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		1.2	Australian Industry	The cash expenditure achievement to 30 June 2019 is \$117.7m. EOFY underspend of \$24.4m is primarily due to Corporate cash management decision to delay Quarter 4 FMS payment of \$11.9m and other invoices (\$1.2m). Contributing to this was a further underspend for activities under the Foreign Military Sales (FMS) cases for AIR9000PH8 of \$4.4m due to reduced disbursements for the acquisition FMS case and Guided Weapons Branch of \$8.1m due to production issues with explosive ordnance in the US offset by other minor overspends.
		(12.5)	Foreign Industry	
			Early Processes	
		(13.1)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
142.1	117.7	(24.4)	Total Variance	
		(17.2)	% Variance	

2.3 Details of Project Major Contracts

Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 June 19 \$m			
US Government (AT-P-SCF)	Jun 11	2,090.3	2,400.7	Variable	FMS	1, 3
US Government (AT-P-AHV)	Aug 11	168.1	202.4	Variable	FMS	1, 3
US Government (AT-B-ZBZ)	Jan 12	12.3	20.2	Variable	FMS	1, 2, 3
US Government (AT-P-GTC)	Feb 13	10.9	3.5	Variable	FMS	1, 3, 4
US Government (AT-P-KOA)	May 17	53.8	53.8	Variable	FMS	1,3, 5
Notes						
1	The scope of this contract is explained further below.					
2	Increased quantity of Tactical and Training Missiles in FMS Case.					
3	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
4	Contract AT-P-GTC was closed in July – September 2017 Quarter, with formal advice being received on 5 March 18 that no further billing will be received on this contract.					
5	This contract was signed in financial year 2016/17 with payment made in financial year 2017/18.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 June 19				
US Government (AT-P-SCF)	24	24	MH-60R, synthetic training devices, and associated mission and support systems			
US Government (AT-P-AHV)	Classified	Classified	Mk 54 Torpedoes			
US Government (AT-B-ZBZ)	Classified	Classified	AGM-114N Hellfire Air to Surface Missiles			
US Government (AT-P-GTC)	N/A	N/A	RAN MH-60R Detachment – Naval Air Station Jacksonville, Florida support			
US Government (AT-P-KOA)	N/A	N/A	MH-60R aviation spares			
Major equipment received and quantities to 30 June 19						

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

A quantity of Mk 54 Torpedos delivered in August 2014
A quantity of Hellfire Missiles delivered in August 2014
'Bromeo' Seahawk Training Device delivered in October 2014
Tactical Operational Flight Trainer 1 delivered in February 2015
Aircraft 1 through 24 were delivered between December 2013 and August 2016
Rear Crew Trainer delivered in August 2016
Tactical Operational Flight Trainer 2 delivered in October 2016
Helicopter Support Facility (HMAS *Stirling*) was accepted in December 2016
Composite Maintenance Trainer delivered in December 2017

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Mission System Options – Phase 1	Jan 14	Jan 14	Apr 14	3	2
	ADF Mission System Options – Phase 2	Nov 14	Nov 14	Nov 14	0	2
	Air Warfare Destroyer	Dec 14	Dec 14	Jan 15	1	3
Preliminary Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Mission System Options – Phase 1	Mar 14	Mar 14	Jun 14	3	2
	ADF Mission System Options – Phase 2	Mar 15	Mar 15	Apr 15	1	2
	Air Warfare Destroyer	Dec 15	May 17	May 17	17	3
Critical Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Mission System Options – Phase 1	Jun 14	Jun 14	Jun 14	0	2
	ADF Mission System Options – Phase 2	May 15	May 15	May 15	0	2
	Air Warfare Destroyer	Dec 16	Dec 17	Dec 17	12	3
Notes						
1	MH-60R helicopter system requirements and design reviews were not required as it a MOTS helicopter procured through FMS.					
2	The ADF Mission System Options were split into two phases. Phase 1 Statements of Work (SOWs) for ADF Unique Mission System Options were agreed by the PO, USN, Sikorsky and Lockheed Martin. Director General Technical Airworthiness has endorsed SOWs in accordance with Technical Airworthiness Regulations. Dates are reflective of Phase 1 design reviews. SOW for Phase 2 was released as part of USN request for tender 26 February 2014, with contract signature with Lockheed Martin achieved in October 2014.					
3	The AWD requires modification to enable the MH-60R aircraft to operate at full capability as the AWD certification baseline is based on a classic Seahawk aircraft. The modification works required to integrate the MH-60R aircraft will be conducted following the delivery of each AWD. With the reorganisation of the AWD Alliance the aviation upgrade effort has been delayed.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	ADF Mission System Options – Phase 1	Aug 15	Aug 15	Aug 15	0	1
	ADF Mission System Options – Phase 2	Sep 18	Aug 20	Aug 20	23	1, 2
	Air Warfare Destroyer	Jun 20	Jun 20	Jun 20	0	3
Acceptance	ADF Mission System Options – Phase 1	Aug 16	Aug 16	Sep 16	1	1
	ADF Mission System Options – Phase 2	Sep 18	Feb 20	Feb 20	17	1, 2
	Acceptance of first MH-60R	Jun 14	Dec 13	Dec 13	(6)	4
	Acceptance of final MH-60R	Sep 18	Aug 16	Aug 16	(25)	4
	Air Warfare Destroyer	Jun 20	Jun 20	Jun 20	0	3
Notes						

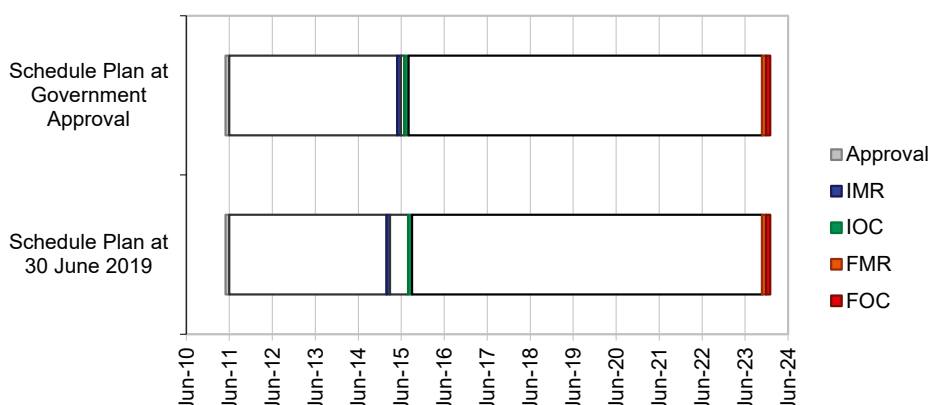
1	The ADF Mission System Options were split into two phases. Phase 1 SOW for ADF Unique Mission System Options was agreed by the PO, USN, Sikorsky and Lockheed Martin. SOW for Phase 2 was released as part of USN request for tender 26 February 2014, and contract signature with Lockheed Martin was achieved in October 2014. Phase 1 was accepted post commencement of System Integration due to it being a hardware installation, whereas Phase 2 will be accepted post receipt of a Flight Clearance Recommendation due to it being predominantly a software package that will be integrated into the fleet commencing approximately six months post acceptance.
2	Schedule delays have been experienced with Phase 2, due in part to the Commonwealth having limited control over the development schedule with numerous schedule movements to the right being experienced.
3	The dates disclosed in the table are the forecast dates for the Air Warfare Destroyer System Integration and Acceptance milestones for Ship 3 (the final ship to undergo modification).
4	The project negotiated early delivery dates for all 24 MH-60R aircraft following acceptance of the Letter of Offer and Acceptance. This was, in part due to the US Government sequestration experienced in the early years of the program.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Jun 14	Jan 14	(5)	1
Initial Materiel Release (IMR)	Jun 15	Mar 15	(3)	2
Initial Operational Capability (IOC)	Aug 15	Sep 15	1	3
Materiel Release 2 (MR2)	Dec 16	Dec 16	0	4
Materiel Release 3 (MR3)	Jun 19	Oct 18	(8)	5
Materiel Release 4 (MR4)	Dec 20	Dec 23	36	6
Final Materiel Release (FMR)	Dec 23	Dec 23	0	
Final Operational Capability (FOC)	Dec 23	Dec 23	0	

Notes	
1	Revised aircraft delivery schedule.
2	The project declared IMR in March 2015, three months ahead of schedule and the Capability Manager signed-off IMR in July 2015.
3	The Capability Manager declared IOC on 25 September 2015, 25 days later than originally scheduled. Navy linked MH-60R IOC to Anzac Class ship aviation upgrades, which resulted in extra technical assessments that resulted in the minor delay.
4	The project achieved MR2 in December 2016 on schedule.
5	The project achieved MR3 in October 2018 ahead of schedule due to the early delivery of aircraft, logistics support being established and sufficient trained personnel being available for deployment.
6	The MR4 milestone schedule has been delayed in the last MAA update (V3.3) to align with the Capability Realisation Plan Operational Capability Milestone OC4.

Schedule Status at 30 June 2019



Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

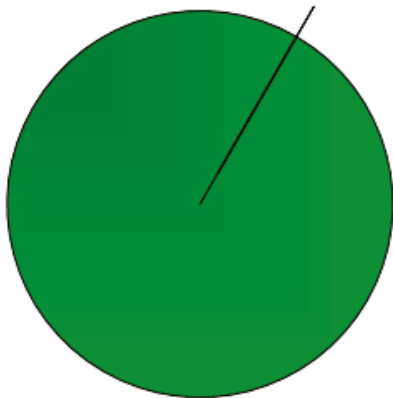
Note

Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

1. Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green:

The project is currently meeting capability requirements as expressed in the Materiel Acquisition Agreement and supporting suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.

Amber:

N/A

Red:

N/A

Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	1. Five aircraft in USN configuration, Tactical Operational Flight Trainer and supporting systems, 2. Establishment of key Sustainment organisations, 3. Initial stock of Mk 54 Torpedoes and Hellfire Missiles, and 4. Modification of one ANZAC class ship for interoperability with MH-60R Seahawk helicopter.	Achieved
Initial Operational Capability (IOC)	One fully mission capable flight is available for operational deployment with associated support systems including training, facilities and supplies. IOC was achieved in September 2015.	Achieved
Final Materiel Release (FMR)	1. All 24 aircraft delivered and Australian Mission System Options implemented, 2. Full EO fit-out and all Mk 54 Torpedos and Hellfire Missiles delivered, 3. All ANZAC class ships and Air Warfare Destroyers modified for interoperability with MH-60R Seahawk helicopter, and 4. Final Training Management Package. Achievement is scheduled for December 2023.	Not yet achieved
Final Operational Capability (FOC)	The full range of operational capabilities, including all upgrades and modifications required to comply with the ADF environment and a support system including training and infrastructure. Achievement is scheduled for December 2023.	Not yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)

Description	Remedial Action
N/A	N/A

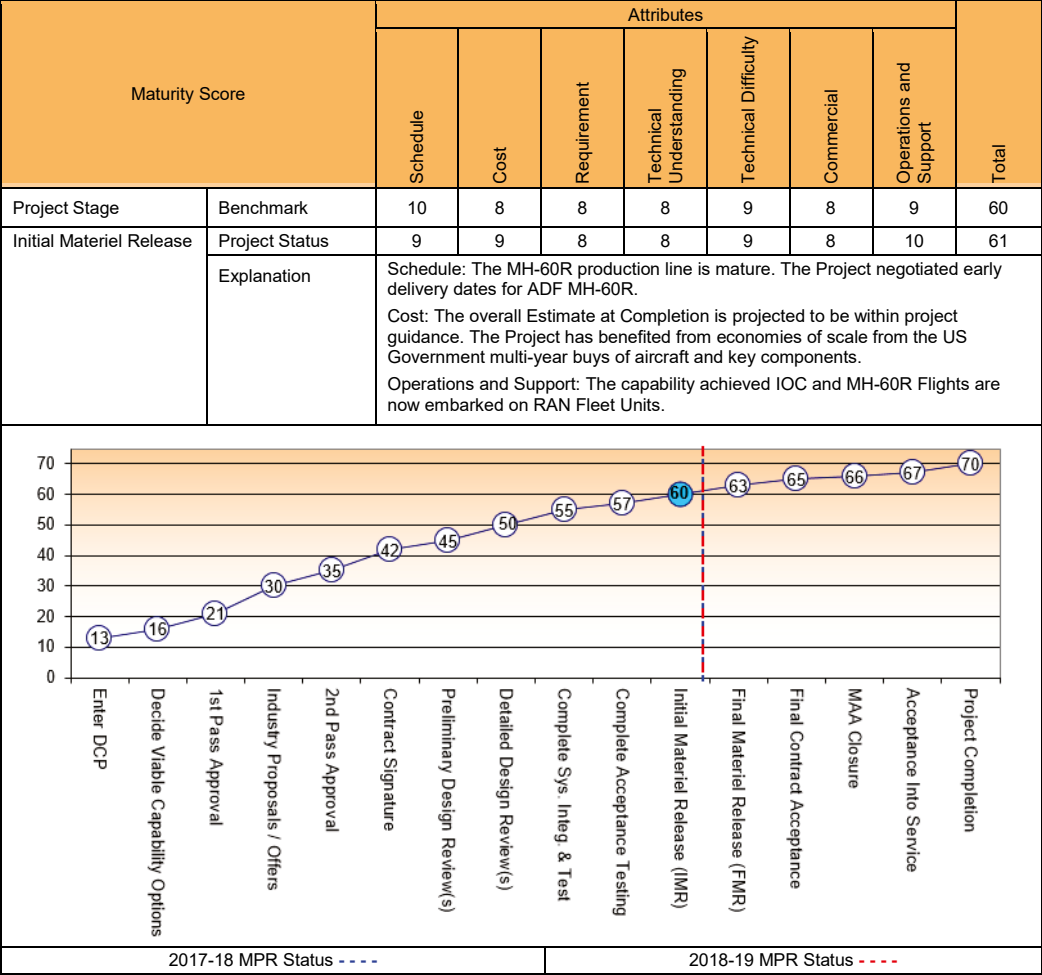
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
N/A	N/A
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst an FMS program affords a number of advantages, the transfer of a significant amount of project management and engineering functions to the US Government implementing agency (NAVAIR PMA-299) and the weak bargaining position of the Commonwealth, increases the project's exposure to risk (technical, schedule and cost). The resultant level of risk and complexity is often understated and poorly understood.	Contract Management

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

The level of Commonwealth contract and financial management involvement and oversight of industry is very low in comparison to that mandated for Direct Commercial Sale contracts, yet both procurement methods confront similar issues. Adequate Commonwealth participation in key project management and technical oversight activities in the US, as provided for in the Government Second Pass submission, is critical to provide the required level of contract management.	
The recruitment process lead times for candidates not already within the ADF or APS can create significant extended vacancies within the Project workforce, and this is exacerbated by the relatively short notice that Defence personnel are obliged to provide for internal transfers.	Resourcing
By procuring MOTS equipment, adhering to the project's clearly defined scope as detailed by government at Second Pass, and effectively using the Program Management Steering Group to prevent potential scope creep, the project has been able to meet or exceed its financial and schedule obligations as detailed within the project's Materiel Acquisition Agreement.	Off-The-Shelf Equipment

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 19

Position	Name
Division Head	Mr Shane Fairweather
Branch Head	CDRE Peter Ashworth OAM
Project Director	CAPT Adrian Capner
Project Manager	Mr Steven Dik

Project Data Summary Sheet¹⁴⁷

Project Number	JP 2048 Phase 4A/4B
Project Name	AMPHIBIOUS SHIPS (LHD)
First Year Reported in the MPR	2008-09
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1 st Pass Approval	Aug 05
Government 2 nd Pass Approval	Jun 07
Budget at 2 nd Pass Approval	\$2,958.3m
Total Approved Budget (Current)	\$3,092.2m
2018-19 Budget	\$31.7m
Project Stage	Initial Materiel Release
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

Joint Project (JP) 2048 Phase 4A/4B is providing the Australian Defence Force (ADF) with an increased amphibious deployment and sustainment capability through the acquisition of two Landing Helicopter Dock (LHD) ships and associated supplies and support. Together, these 27,000 tonne LHDs will be able to land a force of over 2,000 personnel by helicopter and watercraft, along with all their weapons, ammunition, vehicles and stores.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2019 in-year expenditure of \$28.7m represents an underspend of \$3.0m. This is primarily due to fluctuations in engineering support requirements and delays in on-board work now scheduled for 2019-20.

Project Financial Assurance Statement

As at 30 June 2019, JP 2048 Phase 4A/4B has reviewed the approved scope and budget for those elements required to be delivered. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

There have been no major project milestones achieved in 2018-19.

Technical issues have impacted the LHD Final Acceptance contract milestone. Resolution of those technical issues, and achievement of this milestone, is forecast for February 2020 (53 months behind schedule). LHD Final Acceptance is dependent upon closing certain contractual requirements (both technical and commercial) that are not necessarily affecting the achievement of Materiel Release or Operational Capability milestones.

The technical issues have also impacted the availability of the LHDs to progress operational test and evaluation activities. A plan to achieve FMR, and subsequently for Navy to declare FOC, has been redeveloped with the completion of operational test and evaluation activities forecast for 2019, in balance with existing operational and training commitments. The project anticipates achievement of FMR in October 2019 (50 months behind schedule), and Navy's subsequent declaration of Final Operational Capability (FOC) in December 2019 (37 months behind schedule).

147 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

Materiel Capability Delivery Performance

To date, the project has accepted both LHD Ships, and associated technical documentation, spares and training support. Rectification of defects and closure of outstanding functional requirements is being progressed with the Prime Contractor, as allowed by ship availability. While a number of these requirements will not be closed until HMA Ships *Canberra* and *Adelaide* are docked in 2020 and 2021, delivery of all materiel capability is expected to be achieved.

The amphibious capability sought through the provision of two LHDs is as follows:

- Carriage, in addition to the crew, of approximately 1,200 personnel in the force ashore with a further 800 personnel providing helicopter operations, logistics, command and intelligence as well as other supporting units;
- Space and deck strength sufficient to carry around 100 armoured vehicles, including tanks, and 200 other vehicles (approximately 2,400 lane metres);
- Hangar space for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously landed;
- 45 days endurance for crew and embarked force including sustainment, medical, rotary wing and operational maintenance and repair support to these forces whilst ashore for 10 days;
- Command and control of the land, sea and air elements of a Joint Task Force; and
- The ability to conduct simultaneous helicopter and watercraft operations in conditions up to Sea State 4.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Defence Capability Plan 2004–14 identified a requirement to replace the Heavy Landing Ship HMAS *Tobruk* (JP 2048 Phase 4A) and one Amphibious Landing Ship, either HMAS *Manoora* or *Kanimbla* (JP 2048 Phase 4B). In the Defence Capability Plan 2006–16, Phases 4A and 4B of JP 2048 were amalgamated.

A Request For Information was undertaken to gather vessel capability and industry capacity information from international and Australian ship designers and shipbuilders. A Risk Reduction and Design Study and a preliminary Request for Quotation were also undertaken to provide commercial, technical, financial and schedule information for First Pass.

First Pass approval was obtained in August 2005 with the identification of two existing LHD designs that could meet the capability requirements (Armaris' Mistral and Navantia's LHD 'Juan Carlos') and the identification of potential Australian shipbuilders.

After First Pass, a Design Development Activity was conducted at the designers' respective premises to clarify the necessary Australian environmental and technical requirements, resulting in Australianised designs.

During this process, two shipbuilder/designer teams were formed with Tenix Defence working with Navantia and Thales Australia with Armaris.

A Request for Tender was released in April 2006 to the shipbuilders for the construction of the Australianised designs. Both builders submitted compliant tenders which were evaluated, and Second Pass Approval for the Tenix-Navantia solution was obtained in June 2007.

A contract was signed in October 2007 between the Commonwealth and Tenix Defence (now BAE Systems Australia Defence), for the acquisition of the two Spanish designed *Canberra* Class LHD ships and support systems; the contract came into effect in November 2007.

Navy accepted HMAS *Canberra* (LHD 01) on 25 November 2014 and HMAS *Adelaide* (LHD 02) on 2 December 2015, and the project transferred to the Maritime Systems Division in July 2017. A Transition and Remediation Program (TARP) was established to complete the outstanding acquisition scope, and the project office has worked with the Prime Contractor to accept and close out outstanding acquisition scope items. The TARP has continued as part of the ongoing progress to FMR and project closure, including to resolve Warranty, Latent Defect claims, Defects and outstanding technical requirements.

Uniqueness

The LHDs are based on an existing Spanish LHD design and incorporate the Australian Navy Combat System provided by SAAB. The internal and external communication systems have also been altered to align with Australian Navy standards which results in a unique vessel.

Despite the experience gained in amphibious operations with the current amphibious ships in the Royal Australian Navy (RAN), the LHDs will bring a new and unique capability to the ADF by virtue of their size, aviation, well dock, and communications capabilities.

A unique build strategy has been employed. The LHD hulls were built, including the majority of the fit-out, by Navantia at the Ferrol and Fene Shipyards in Spain. They were transported to Australia as individual lifts on a 'float on/float off' heavy lift ship, the Blue Marlin. Construction of the superstructure and its consolidation with the hull was conducted by BAE Systems Australia Defence (BAE Systems) at their Williamstown (Victoria) Shipyard in Australia. The superstructure contains the high level Combat and Communications Systems equipment that will be maintained and upgraded in Australia. BAE Systems also undertook the final out-fit, set-to-work, and trials.

Major Risks and Issues

As the project moves towards closure, there has been a reduction in the strategic risk profile. The project is currently managing a remaining risk surrounding the Prime Contractor retaining sufficient qualified and experienced staff, and a number of issues relating to:

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

- The completion of outstanding contractual and Functional Performance Specification requirements on LHD01 and LHD02, as initial acceptance of the LHDs occurred prior to the achievement of some of these elements;
- The review of contract deliverables, witnessing of tests and defect rectification;
- System shortfalls in both Ships that have been identified during the Navy Operational Test and Evaluation (NOTE) period;
- The suitability of spares and equipment deliveries required by the RAN usage profile; and
- Delays affecting CASG milestones, FMR, contract Final Acceptance and project closure, as well Navy declaration of FOC, due to a combination of outstanding technical issues and subsequent delays.

Other Current Related Projects/Phases

JP 2048 Phase 3: Watercraft system acquisition used in conjunction with the JP 2048 Phase 4A/4B Amphibious Ships (LHD) Mission System. This watercraft is the ship to shore connector for the LHDs.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Nov 03	Original Approved	3.1	1
Sep 04	Real Variation – Scope	4.8	2
Aug 05	Real Variation – Scope	29.6	3
Jun 07	Government Second Pass Approval	2,920.8	
	Total at Second Pass Approval	2,958.3	4
Oct 08	Real Variation – Transfer	9.3	
Jul 10	Price Indexation	428.4	5
Jun 19	Exchange Variation	(303.8)	
Jun 19	Total Budget	3,092.2	
Project Expenditure			
Prior to Jul 18	Contract Expenditure – BAE Systems	(2,672.1)	
	Other Contract Payments / Internal Expenses	(142.0)	6
		(2,814.1)	
FY to Jun 19	Contract Expenditure – BAE Systems	(5.1)	
	Other Contract Payments / Internal Expenses	(23.6)	7
		(28.7)	
Jun 19	Total Expenditure	(2,842.8)	
Remaining Budget			
Jun 19		249.4	
Notes			
1	This project's original budget amount is that prior to achieving Second Pass Government approval.		
2	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.		
3	First Pass Approval.		
4	Transfer of funding for technical studies from the then Defence Science and Technology Organisation (now Defence Science and Technology Group).		
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$350.0m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$78.4m having been applied to the remaining life of the project.		
6	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support, Project Management costs, Integrated Logistics Support, and Other Minor Capital expenditure not attributable to the Prime contract and not included in the main contracted labour support areas.		

7	Other expenditure comprises: Integrated Logistics Support and Engineering services (\$12.4m), project management costs (\$3.7m), Shore Power design and installation (\$2.9m), Electronic Support Measures (\$2.6m) and spares (\$2.0m).
---	---

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
37.1	40.2	31.7	PBS-PAES: The acquisition of the project is not as forecast in the Defence PBS 2018-19, due to increase in requirements for integrated logistics support services. PAES-Final Plan: The variation is primarily due to delays in the final milestone payment for the prime contract as well as electronic support measures requirements that were planned but have been delayed.
Variance \$m	3.1	(8.5)	Total Variance (\$m): (5.4)
Variance %	8.4	(21.1)	Total Variance (%): (14.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	Year to date underspend of \$3.0m is due to lower than estimated costs for engineering support requirements and delays in on-board work now scheduled to be conducted in 2019-20.
			Foreign Industry	
			Early Processes	
		(3.0)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
31.7	28.7	(3.0)	Total Variance	
		(9.5)	% Variance	

2.3 Details of Project Major Contracts

2.6 Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract / Arrangement	Notes
		Signature \$m	30 Jun 19 \$m			
BAE Systems	Oct 07	2,268.1	2,682.2	Variable	ASDEFCON	1, 2
Notes						
1	Contract Price at Revision 125. Amendments to Contract since signature include execution of contracted options for Training and Spares.					
2	Contract value as at 30 June 2019 is based on actual expenditure to date (\$2,677.2m) and remaining commitment at current exchange rates (\$5.0m), and includes adjustments for indexation (where applicable).					
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 19				
BAE Systems	2	2	LHD ships and integrated support systems.			
Major equipment received and quantities to 30 Jun 19						
LHD 01 and LHD 02 Delivery and Acceptance achieved.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mission System (Includes Platform / Combat Systems)	Feb 08	Feb 08	Feb 08	0	
	Support System	Apr 08	Apr 08	Apr 08	0	
Preliminary Design	Communication	Oct 08	Oct 08	Dec 08	2	1
	Navigation	Oct 08	Oct 08	Dec 08	2	1
	Platform System	Nov 08	Nov 08	Nov 08	0	
	Combat System	Dec 08	Apr 09	Apr 09	4	1
	Whole of Ship	Jan 09	May 09	May 09	4	1
	Support system	Mar 09	May 09	May 09	2	1
Detailed Design	Communication	May 09	Sep 09	Sep 09	4	1
	Navigation	Jun 09	Jun 09	Jun 09	0	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

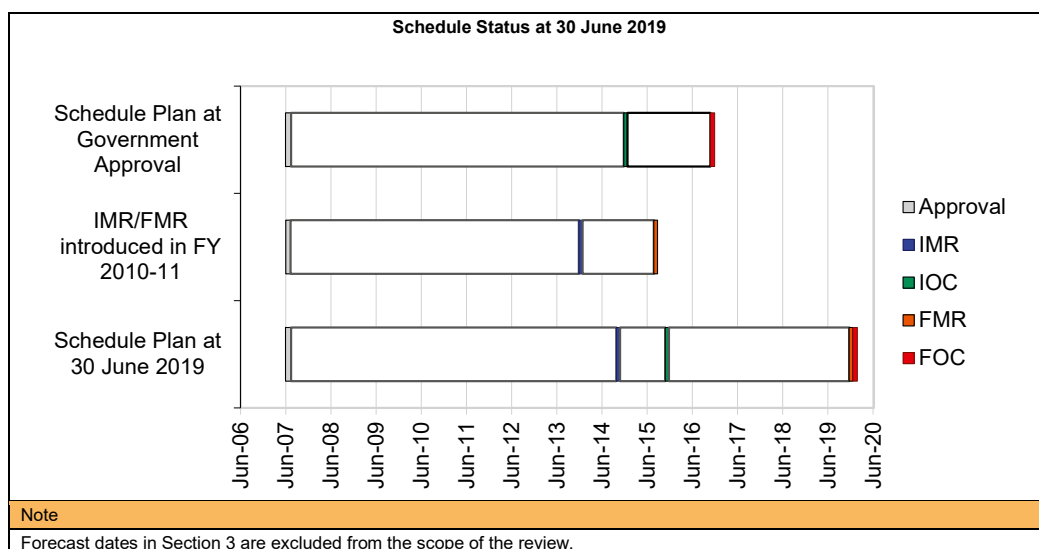
	Platform system	Jun 09	Jun 09	Jun 09	0	
	Combat system	Jul 09	Oct 09	Oct 09	3	1
	Whole of ship	Jul 09	Dec 09	Dec 09	5	1
	Support system	Aug 09	Dec 09	Dec 09	4	1
Notes						
1	<p>Due to the complexity of the design and integration of the combat, communications and platform systems, more time was allocated to the design review activities.</p> <p>The Heavy Lift Ship Company, Dockwise, delivered the LHD 01 hull to BAE Systems in Australia on 28 October 2012 (66 days later than planned). LHD 02 departed Spain on the Heavy Lift Ship, Blue Marlin, in December 2013 and arrived in Australia in February 2014 on schedule.</p>					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	Oct 15	7	1
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Feb 14	Oct 14	9	2
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Oct 15	2	3
	LHD Final Acceptance	Sep 15	Nov 16	Feb 20	53	4
Notes						
1	System Integration relates to the whole capability, commencing with LHD 01 and completion at LHD 02. LHD 01 production and test activities delays impacted System Integration and set to work activities.					
2	Project Acceptance for LHD 01 occurred later than planned. The delay was a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions.					
3	A combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, delayed the planned Sea Acceptance Trials for LHD 02, with an associated follow-on impact of delayed delivery and acceptance of LHD 02.					
4	LHD Final Acceptance is dependent upon closing certain contractual requirements (both technical and commercial) that are not necessarily affecting the achievement of Materiel Release or Operational Capability milestones. Whilst the delay in LHD Ship 2 Project Acceptance initially affected LHD Final Acceptance, extant technical issues, including defects, have impacted closure of Contract requirements and obligations.					

3.3 Progress toward Materiel Release and Operational Capability Milestones

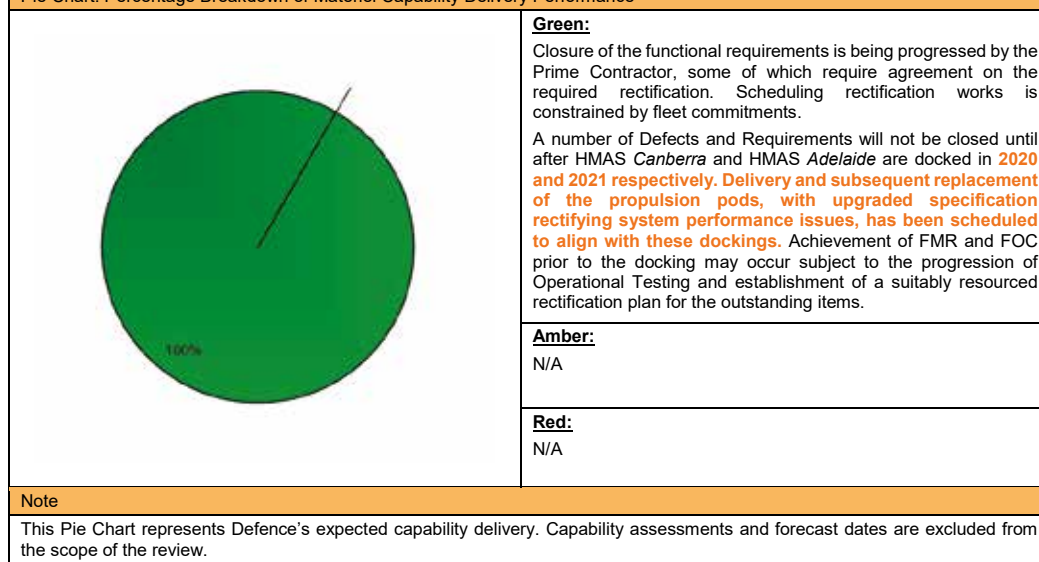
Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR) (LHD 01)	Jan 14	Oct 14	9	1
Initial Operational Capability (IOC) (LHD 01)	Dec 14	Nov 15	11	2, 3
Materiel Release 2 (MR2) (LHD 02)	Aug 15	Oct 15	2	4
Final Materiel Release (FMR)	Aug 15	Oct 19	50	5
Final Operational Capability (FOC) (LHD 02)	Nov 16	Dec 19	37	6
Notes				
1	LHD 01 production delays impacted System Integration and set to work activities resulting in the delay to achievement of IMR.			
2	The change is a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions. IOC is a Capability Manager responsible milestone which is constituted by an operational capability level delivered through a range of Defence assets. LHD 01 and the associated Integrated Logistic Support products contribute to the achievement of IOC.			
3	This variance is as a result of late delivery of LHD 01 and the programmed workup of operational capability level during the year by the Defence Forces. This delay is not related directly to LHD 02 delivery or dependent on FMR.			
4	The variance is related directly to a combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, and delayed LHD 02 delivery to the project.			
5	The FMR variance is due to technical issues and a number of defects that have impacted testing and closure of requirements and obligations.			
6	The technical issues which arose throughout 2017 hindered the availability of both LHD ships and prevented the planned FOC operational scenarios from being exercised and assessed. The Operational Test and Evaluation activities planned in 2018 and 2019 have been rescheduled across Defence in balance with a range of operational and training commitments already planned.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none"> LHD 01 delivered ready for Operational Test and Evaluation. Capability Acquisition and Sustainment Group (CASG) Elements of Fundamental Input to Capability Support System, including Technical Documentation, Spares Support and Training Support (CASG portion). 	Achieved
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> The ability to undertake a non-combatant evacuation operation mission utilising an Amphibious Ready Element (ARE) sized force and deliver Humanitarian Assistance/Disaster Relief equipment and stores. 	Achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Final Materiel Release (FMR)	<ul style="list-style-type: none"> Completed delivery of LHD 02 and all remaining Acquisition Project Support Deliverables. FMR is expected to be achieved October 2019. 	Not yet achieved
Final Operational Capability (FOC)	<ul style="list-style-type: none"> The point in time at which the Canberra Class LHDs are assessed as capable of sustainably performing Amphibious Warfare as Primary Control Ship employed in its primary role. FOC expected to be achieved in December 2019. 	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the Prime Contractor will not be able to retain sufficient qualified and experienced staff leading to an impact on schedule.	<ul style="list-style-type: none"> Collaborative contract management and regular engagement to ensure Prime Contractor and Commonwealth adherence to contractual obligations. Dedicated resource to support the coordination and prioritisation of defects/testing with repair and maintenance activities during each availability.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
Initial acceptance of the LHDs occurred prior to the achievement of all applicable contractual and FPS requirements this has affected the ability to complete the outstanding requirements leading to an impact on schedule and cost.	<ul style="list-style-type: none"> Prompt sign off of contract requirements. Monitor burn down rate of remaining contract requirements. Progressive acceptance review of stage category test results.
The review of contract deliverables, witnessing of tests and defect rectification which has been affected by the limited number of sufficiently skilled CoA project personnel leading to an impact on schedule and cost.	<ul style="list-style-type: none"> Engaging External Service Providers (Contractors). Utilise personnel from CASG maritime matrix organisation and available personnel from the SPO. An enduring Project Management and Transition capability has been established within Major Surface Ships Branch.
The forecast FMR date has been affected by the volume of outstanding technical issues.	<ul style="list-style-type: none"> The project is working with the Prime Contractor to accept and close out Warranty, Latent Defect claims, Defects and outstanding technical requirements. Key personnel identified to ensure internal/external stakeholders are made available to develop, review and provide internal signatures for outstanding waivers/deviations. Key personnel identified with authority to agree to actions that will enable the resolution of outstanding requirements.
In-service use of the Ships during the NOTE period has identified system performance shortfalls in key systems leading to an impact on schedule and cost.	<ul style="list-style-type: none"> Transition and Remediation Program (TARP) established in April 17 to address system performance issues (remediation) and progress rectification of outstanding acquisition deficiencies and defects which has led to increased operational availability of the LHDs. Project was transferred to the Maritime Systems Division and integrated with TARP effective 1 July 2017, to ensure all acquisition and sustainment activities are effectively coordinated.
Project Closure was not achieved in December 2016 as forecast due to a delay in Final Operating Capability (FOC) which has led to an impact on schedule.	<ul style="list-style-type: none"> Ensure resources continue to be assigned to tracking and closure of functional requirements. Ensure resources continue to be assigned to tracking and closure of defects and deficiencies. Review remediation activity, Operational Testing and Evaluation schedule and update MAA.

Description	Remedial Action
The delivery and support of two LHDs will be affected by spares and equipment that are not appropriate for RAN usage profiles leading to an impact upon sustainability and cost.	<ul style="list-style-type: none"> Project has engaged External Service Providers to review & make recommendations on the Logistics Supportability Analysis Record and this work is ongoing as part of the TARP ILS Remediation. ILS Remediation is reviewing maintenance baseline and associated spares recommendations using current RAN Operating Profiles. This review contributed to the achievement of ILS Assurance for the LHDs in early 2019. Project to continue to review all engineering changes to ensure spares have been correctly identified.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	9	9	9	8	10	63
	Explanation	<ul style="list-style-type: none"> Schedule: BAE Systems delivered LHD 01 and LHD 02 late. The project continues to manage the pressures on achieving FMR and FOC schedule milestones. Cost: The Project is on track to achieve outcomes within the allocated budget. Requirement: Integration and testing processes have verified achievement of endorsed requirements. Technical Understanding: Knowledge necessary to operate and support the capability has been transferred to Sustainment. Operations and Support: The Mission and Support Systems are now fully operational. 							

Project Stage	Maturity Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ. & Test	55
Complete Acceptance Testing	57
Initial Materiel Release (IMR)	60
Final Materiel Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance Into Service	67
Project Completion	70

2017-18 MPR Status - - - - - 2018-19 MPR Status - - - - -

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Independent Assurance Reviews and Project Stakeholder Group meetings enable adjustment of project strategies and stakeholder input to balance schedule decisions against impacts to cost, schedule, performance, quality and stakeholder expectations. For example, cost, performance and supportability may be impacted by early acceptance of the supplies to meet schedule demands.	Contract Management
Prior to committing to the acquisition contract, use best endeavours to obtain high fidelity sustainment data and assess it against suitability (fitness for purpose). Senior engineering and logistic reviews are required prior to the delivery of the sustainment products to minimise sustainment risks.	Contract Management
When introducing new major capabilities into service, both operational tasks and maintenance tasks should be modelled and analysed in detail, before the training obligations under the acquisition contract are agreed.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	RADM Wendy Malcolm
Branch Head	CDRE Robert Elliott
Project Director	Mr Paul Heiskanen
Project Manager	Mr Thomas Egan

Project Data Summary Sheet¹⁴⁸

Project Number	LAND 121 Phase 4
Project Name	Protected Mobility Vehicle – Light
First Year Reported in the MPR	2016-17
Capability Type	Replacement
Acquisition Type	Developmental
Capability Manager	Chief of Army
Government 1st Pass Approval	Oct 08
Government 2nd Pass Approval	Aug 15
Budget at 2 nd Pass Approval	\$1,945.0m
Total Approved Budget (Current)	\$1,979.6m
2018-19 Budget	\$117.5m
Project Stage	Detailed Design Review
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND 121 Phase 4 will acquire and deliver into service 1100 Protected Mobility Vehicles – Light (PMV-L) and 1058 companion trailers for command, liaison, reconnaissance and utility roles; and the associated training and support systems. Stage One (Engineering and Manufacturing Development) of the project delivered 10 vehicles and five trailers for various test and evaluation activities. Stage Two (Low-Rate Initial Production) delivered an additional six vehicles and four trailers for reliability testing and verification / validation activities. Stage Two will also deliver the first 100 production vehicles and trailers. Stage Three (Full-Rate Production) will deliver the remaining 1000 production vehicles and 958 trailers.

The PMV-L will replace around one third of the current Land Rover fleet, and represents a new capability that will provide the Australian Defence Force (ADF) with a highly protected and deployable light vehicle fleet designed to provide an optimum balance of six fundamental requirements: survivability, mobility, usability, payload, sustainability and communications.

The PMV-L is the ADF's only protected vehicle capable of being lifted by ADF Chinook helicopters. The vehicle also pioneers a next-generation open architecture communications management system, the Integral Computing System (ICS), which integrates the vehicle's various communications systems through a common interface.

The PMV-L fleet will consist of two variants which may perform specific mission roles:

- 4-Door PMV-L: The 4 Door vehicle may perform the following roles:
 - Command - Carriage of up to four personnel with additional integrated electronic command, control and communication systems.
 - Liaison - Carriage of up to four personnel with a general communication fit.
 - Reconnaissance - Carriage of up to four personnel to perform light infantry, reconnaissance and Air Force security functions.
- 2-Door PMV-L: The 2-Door vehicle will perform the following role:
 - Utility - Carriage of two personnel and cargo.

Thales Australia has been contracted by Defence for the development, production and through-life-support of the PMV-L capability. Thales Australia is also the nominated Prime Systems Integrator for the ICS.

1.2 Current Status

Cost Performance

In-year

148 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

As at 30 June 2019, financial year 2018/19 expenditure was \$89.3m against the forecasted expenditure of \$117.5m. The variation primarily reflects delays in the delivery of engine components caused by the Hawkei engine manufacturer, Steyr Motors, entering voluntary administration. This issue will delay future milestones and support system payments into FY19/20. There is an element of variation due to Defence cash management at end FY18/19.

Project Financial Assurance Statement

As at 30 June 2019, the project has reviewed its approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Under Stage One (Engineering and Manufacturing Development) of the LAND 121 Phase 4 Acquisition Contract, Thales Australia delivered 10 vehicles and five trailers on schedule for the purpose of further development and testing. As part of this stage Thales Australia conducted a Reliability Growth Trial (RGT). During RGT, the performance of the vehicles exceeded the number of critical failures allowable under the contract. Defence required Thales Australia to remediate these critical failures in order to fulfil the contractual reliability requirements of this Stage. This remediation activity resulted in an additional RGT, extending Stage One by a further four months.

The RGT was separated into the following three activities:

- RGT Number One was conducted over the period July to December 2016 and provided Thales with the opportunity to resolve any issues with the vehicles ahead of the formal trial activities that commenced under RGT Number Two.
- RGT Number Two commenced in November 2016. In January 2017, the pilot Hawkei vehicles had exceeded the seven allowable critical failures under the contract. Identified key root causes include supplier quality issues and immature components affecting hardware and software integration. A six-week corrective action period was implemented to allow Thales to undertake engineering upgrades.
- RGT Number Three (May to July 2017) followed this, which demonstrated reliability improvements on a number of sub-systems, but a number of recurring failures were evident.

Thales Australia was granted exit of Stage One on 5 September 2017, with the caveat that Thales Australia continued to address the reliability issues. A Reliability Demonstration Test was conducted from October 2017 until November 2018 to confirm that the reliability improvements have been implemented prior to Production Reliability Acceptance Testing and progress into Full Rate Production. Delays have been incurred due to the reliability issues. The achievement of key milestones is reliant on the resolution of these issues.

From July 2016 the system definition for the ICS was finalised and design reviews successfully undertaken on schedule. An ICS Integration Lab was established in Sydney with stand-alone and on-vehicle demonstrations of the ICS capability completed as contracted. The project achieved a live demonstration of the ICS with the Capability Manager on 31 July 2017.

In March 2017, the PMV-L successfully passed scheduled survivability test events for the specified level of under-belly land mine threat. Under-wheel blast testing was successfully completed in June 2018 and a side blast test was successfully conducted on a 4-Door vehicle in November 2018. An external air lift trial was successfully conducted over June-July 2017 at Townsville on test vehicles (two-door and four-door vehicles) and trailers in various load states.

The RDT was completed in November 2018, with a number of residual reliability issues outstanding. Thales provided sufficient Objective Quality Evidence to resolve these outstanding issues to enable Production Reliability Acceptance Test (PRAT) to commence in May 2019.

Acceptance of the Stage Two test and evaluation activities (AV&V, including RDT and PRAT) by Defence is required prior to exiting Stage Two. Full-Rate Production is now expected to commence in Quarter 2 2020.

Ongoing reliability issues initiated remedies under the contract, including stop payments and liquidated damages. Initial Materiel Release (IMR) will not be achieved by May 2019 due to the Hawkei reliability issues, design maturity and production delays. These issues will also impact the achievement of Initial Operating Capability by December 2019. The full impact of Steyr Motors entering voluntary administration was not fully understood at the 30 June 2019 PDSS.

Materiel Capability Delivery Performance

16 PMV-L pre-production baseline vehicles and nine trailers have been delivered for development and testing purposes under Stages One and Two. The acceptance process for the Low-Rate Initial Production (LRIP) vehicles and trailers commenced in January 2018, with the first vehicles being formally accepted by the Commonwealth in March 2018. The Commonwealth has currently accepted 80 LRIP vehicles and 88 trailers (out of a total of 1100 vehicles and 1058 trailers planned for delivery into service).

Defence conducted a trial involving the deployment of two Hawkei vehicles to Iraq and Afghanistan. The vehicles were deployed into Iraq as part of Task Group Taji and then redeployed in April 2018 to the Australian contingent in Kabul, Afghanistan. This trial commenced in December 2017 and concluded in August 2018. The key trial objectives included the identification of operational and support issues and deployment considerations for the Hawkei capability.

Thales advised the Commonwealth on 29 November 2018 that the Hawkei engine supplier, Steyr Motors, had entered voluntary administration. Thales has secured the delivery of 100 Low-Rate Initial Production engines, and has placed an order with Steyr Motors for a further 1,000 engines to satisfy the Full-Rate Production quantities required for LAND 121 Phase 4. Thales has advised the Commonwealth that the impact of the delay on the production line will not be fully understood until the completion of proceedings with the Steyr Motors' administrator. The IMR milestone will be delayed 12 months to May 2020 due to Hawkei reliability issues, design maturity and production delays caused by Steyr Motors entering voluntary administration.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

The Hawkei support system continues to be developed. Operator Training commenced at the Army School of Transport in September 2018. Maintainer Training is expected to commence in Quarter 4 2019.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

LAND 121 Phase 4 was established to address a new capability requirement within the ADF's land mobility assets emanating from the absence of lightweight and light class field vehicles with the requisite levels of ballistic and blast protection.

At First Pass in October 2008, Government agreed for Defence to pursue the development of a 'next generation' PMV-L by joining the US Joint Light Tactical Vehicle (JLTV) Program (Option One) and at the same time retain the possibility of acquiring a Market Available Vehicle (MAV) in the event JLTV proves unsuitable (Option Two). In May 2009, Government directed that an Australian indigenous option for PMV-L be considered. In June 2009, a Manufactured and Supported in Australia (MSA) Option (Option Three) was included in LAND 121 Phase 4 through the release of a Request for Proposal. In 2009, Defence paid \$43.0m to pursue the development of a 'next generation' PMV-L by joining the US Joint Light Tactical Vehicle (JLTV) Program. The funding was provided by Capability Development Group and has not formed part of the LAND 121 Phase 4 project budget. First to Interim Pass funding was provided in November 2009 following approval of MAA V2.0. Where, Government agreed that Land 121 Phase 4 would return to Government for an Interim Pass decision on which option is to be pursued to Second Pass.

In May 2010, Government agreed that the MSA Option be further investigated prior to Interim Pass through the conduct of initial prototyping activities. On 30 June 2010, a draft schedule for each option to deliver the PMV-L capability was submitted to the Government for consideration. Stage One MSA funding was provided in July 2011 following approval of Materiel Acquisition Agreement (MAA) V2.1. Stage One of the MSA Option consisted of assessing six developmental Line of Departure vehicles (LOD) that met the Australian content requirement. Two from each of the three companies - Force Protection Europe Ltd, General Dynamics Land Systems-Australia and Thales Australia Ltd against function and performance specifications and value for money. Through the procurement process, it was determined that there were no off-the-shelf options available that met all ADF requirements.

At Interim Pass in December 2011, Government refined its direction to the following:

- directed Defence to cease active participation in the US JLTV Program;
- selected Thales Australia's PMV-L as the preferred vehicle for further development and testing under Stage Two of the MSA Option (Option Three); and
- directed Defence to continue observing the US JLTV Program, given its potential to provide an alternative at Second Pass.

Interim pass funding was provided in April 2012 following approval of MAA V3.0. Defence entered into Stage Two of the MSA Option with Thales Australia to carry out further development of their PMV-L, culminating in a program of trials and testing of the prototypes in late 2013. Additional development work and testing were carried out in 2014 under the MSA Stage Two through a Risk Reduction Activity (RRA) aimed at reducing residual technical risk to an acceptable level.

In August 2015, Government provided Second Pass Approval for LAND 121 Phase 4 to acquire Thales Australia's PMV-L. Second Pass funding was provided in September 2015. Subsequently, LAND 121 Phase 4 signed a contract in October 2015 with Thales Australia to acquire and support 1100 PMV-L vehicles and 1058 trailers.

The Acquisition Contract contains three distinct stages that reflect the developmental nature of the PMV-L capability, and which minimises production rework:

- Stage One: Engineering and Manufacturing Development. Includes the provision of 10 vehicles and five trailers, including test vehicles and trailers; the conduct of a vehicle RGT and other developmental test and evaluation activities. Acceptance of these results by Defence was required prior to exiting Stage One.
- Stage Two: Low-Rate Initial Production (**LRIP**). Includes the production of 100 vehicles and 100 trailers, plus six test vehicles and four trailers based on an approved production baseline; the conduct of a **PRAT**, and final acceptance testing and evaluation activities.
- Stage Three: Full-Rate Production (**FRP**). The production of the remaining vehicles and trailers based on the approved **FRP** baseline, and the achievement of IMR and **Final Materiel Release** (FMR). This stage will also include the uplift of **all** LRIP vehicles and trailers to the FRP build standard.

Support requirements for the PMV-L have been incorporated into the existing Protected Mobility Vehicle-Medium (Bushmaster) Through Life Support Contract. It is anticipated that integrating the support arrangements for both fleets will **reduce the overall cost of ownership of the vehicle systems by approximately \$270 million over the 15-year life of the vehicle systems.**

Uniqueness

LAND 121 Phase 4 is a developmental project specifically designed to meet the ADF's requirements. The uniqueness of the PMV-L stems from the combination of the following in a single vehicle:

- A high level of blast, ballistic and fragmentation protection, enabling greater deployability within high risk operational environments;
- External Air Transport Mass, enabling the capability to be the ADF's only protected vehicle capable of being lifted by ADF Chinook helicopters;
- A next-generation Generic Vehicle Architecture based C4I solution - Integral Computing System (ICS); and
- Utilise a modular armour system to enable enhanced protection based on mission specific roles.

Major Risks and Issues

The Project **currently** has **17** 'high' rated risks **and issues** (pre-mitigation rating). The 'high' rated risks have been consolidated into the following **four** broader descriptions, as described in section 5.1:

- There is a chance the Hawkei vehicle will not successfully complete the Reliability Growth Program, impacting on cost, schedule and reputation;
- There is a chance that production delays from vehicle reliability and quality issues, and component availability will impact on the achievement of the Initial Materiel Release and Initial Operating Capability milestones;
- There is a chance that the Hawkei Full-Rate Production baseline will not fully meet the user's expectations, due to scope, budget and vehicle design constraints. This will impact on cost, schedule and reputation; and
- There is a chance that the LAND 121 Phase 4 Program will be discontinued. This will result in the PMV-L capability not being acquired.

The 'high' rated issues have been consolidated into the following six broader descriptions in Section 5.2:

- Reliability Program development was not completed on time, resulting in a delay in entering PRAT.
- The delays in the provision of technical and logistic support data, due to design maturity and reliability issues, have impacted the development of the PMV-L through-life-support package.
- ICS development has been delayed due to the ICS support system and maintenance documentation not being completed to schedule.
- The vehicle reliability issues and component delays have impacted the project schedule and delayed the achievement of IOC, by 12 months from December 2019 to December 2020.
- The Introduction Into Service of the Hawkei has been affected by the Introduction Into Service of other LAND 121 vehicles, impacting on schedule and reputation.
- Some capability requirements have not been met by Thales' current design at this stage of the design process.

Other Current Related Projects/Phases

LAND 121 is a multi-phased program providing the ADF with current-generation high-capability field vehicles, modules and trailers. The **other current** LAND 121 projects are:

- LAND 121 Phase 3B – This project is providing the ADF with 2,707 protected and unprotected medium and heavy vehicles, along with 1,753 matched trailers. This will provide payloads of between four and seventy tonnes for a range of logistics functions, including vehicle recovery, freight, bulk liquid distribution and personnel carriage.
- LAND 121 Phase 5B – This project is a follow-on acquisition from LAND 121 Phase 3B, and is providing the ADF with an additional 1,044 medium and heavy vehicles, 872 modules and 812 trailers.
- LAND 200 Tranche 2 – This project expands LAND 200 Tranche 1 capability across Army with new collaborative planning, control and monitoring tools for Brigade and Divisional level headquarters and integrates the system into additional platforms. The two major sub-systems of the Battlefield Command Systems are the Battle Management System and the Tactical Communications Network.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
May 08	Original Approved	1.8	
Nov 09	Real Variation - Scope	5.7	1
Jul 11	Real Variation - Scope	31.5	2
Apr 12	Real Variation - Scope	48.4	3
Sep 15	Government Second Pass Approval	1,857.6	
	Total at Second Pass Approval	1,945.0	4
Jul 10	Price Indexation	0.4	5
Jun 19	Exchange Variation	34.2	
Jun 19	Total Budget	1,979.6	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Thales Australia (Prime Contract)	(361.1)	
	Contract Expenditure – Thales Australia prototyping activities (MSA Stage One and Stage Two Contract)	(58.7)	6
	Other Contract Payments/Internal Expenses	(43.3)	7
		(463.1)	
FY to Jun 19	Contract Expenditure – Thales Australia (Prime Contract)	(80.0)	
	Other Contract Payments/Internal Expenses	(9.3)	8
		(89.3)	
Jun 19	Total Expenditure	(552.4)	4
Jun 19	Remaining Budget	1,427.2	
Notes			

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

1	This amount reflects funding approval at First Pass Approval.
2	This amount reflects approval to undertake MSA Stage One prototyping.
3	This amount reflects funding approval at Interim Pass for MSA Stage Two prototyping.
4	The Budget and Expenditure amounts do not reflect the \$43.0m paid in 2009. Due to the payment being provided by Capability Development Group and was not part of the LAND 121 Phase 4 project budget.
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$0.1m having been applied to the remaining life of the project.
6	These expenditures relate to pre Second Pass costs associated with exploring the Government initiated MSA Option (Option Three) and the contracts are now closed.
7	Expenses comprise of: MAV prototyping activities (\$17.7m); External Service Providers (\$8.1m) , Project administrative costs (\$5.0m); Non-Prime contracts External Service Providers (\$4.9m) ; costs related to testing / trials (\$3.7m); Legal costs (\$2.1m) and US JLTV Program (\$1.8m).
8	Expenses comprise of: External Service Providers (\$4.7m) ; Non-Prime contracts (\$2.2m); Costs related to testing/trials (\$1.9m); and Project administrative costs (\$0.5m).

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
395.6	202.8	117.5	PBS – PAES: The forecast variation is primarily due to ongoing vehicle reliability issues which is expected to delay the commencement of Full-Rate Production. PAES – Final Plan: The variation reflects issues with delays in the delivery of engine sub-components caused by the Hawkei engine manufacturer, Steyr Motors, entering voluntary administration. These issues will delay several milestone and support system payments into the 2019-20 financial year.
Variance \$m	(192.8)	(85.3)	Total Variance (\$m): (278.1)
Variance %	(48.7)	(42.1)	Total Variance (%): (70.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(17.3)	Australian Industry	The variation primarily reflects delays in the delivery of engine components caused by the Hawkei engine manufacturer, Steyr Motors, entering voluntary administration. This issue will delay future milestones and support system payments into FY19/20. Additionally, there is an element of variation due to Defence cash management at end FY18/19 with some payments being made in FY19/20.
			Foreign Industry	
			Early Processes	
		(10.9)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
117.5	89.3	(28.2)	Total Variance	
		(24.0)	% Variance	

2.3 Details of Project Major Contracts

Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Thales Australia	Jul 10	9.0	58.7	Firm	ASDEFCON	2, 3
Thales Australia	Oct 15	1,328.5	1,478.0	Fixed	ASDEFCON	1, 2, 4
Notes						
1	Price variation from Contract Signature is due to approved Contract Change Proposals, predominantly to progress the development and integration of ICS.					
2	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
3	Price variation from contract signature was to exercise the MSA Stage Two option.					
4	The contract has been re-evaluated as being a 'fixed' price because the contract value is 'fixed', less price escalation.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Thales Australia	2 PMV-L	8 PMV-L	Design, develop and demonstrate prototype vehicles			
Thales Australia	1100 PMV-L and 1058 Trailers	1100 PMV-L and 1058 Trailers	Thales Australia is contracted to deliver 1100 PMV-L (635 4-Door and 465 2-door vehicles) and 1058 Trailers	1		

Major equipment received and quantities to 30 Jun 19						
Defence received 10 pre-production baseline vehicles and five trailers from Thales Australia on schedule for the purpose of various test and evaluation activities under Stage One (Engineering and Manufacturing Development) of the LAND 121 Phase 4 Acquisition Contract. Defence received an additional six pre-production baseline vehicles and four trailers for reliability testing, and verification & validation activities in Stage Two. 80 vehicles and 88 trailers from the Low-Rate Initial Production quantities have been accepted by the Commonwealth as at 30 June 2019 .						
Notes						
1	The 16 test vehicles and nine test trailers for development and testing activities are in addition to the 1100 PMV-L and 1058 trailers.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Detailed Design	PMV-L and Trailer	Mar 16	N/A	Apr 16	1	1
	ICS	Jan 17	N/A	Dec 16	(1)	2
Preliminary Design	ICS	Sep 16	N/A	Sep 16	0	
Critical Design	PMV-L, Trailer and ICS	Apr 17	Aug 17	Oct 17	6	3
Support System Detailed Design (Operator)	Support System	Jun 17	Jun 18	Aug 18	14	4, 5
Support System Detailed Design (Maintainer)	Support System	Jun 17	Jan 19	Oct 19	28	5
Notes						
1	The variance is caused by the Contractor's delay in closing out the action items.					
2	The Contractor and the project agreed to conduct the Review early, thus the early achievement. The Commonwealth approval of ICS Detailed Design Review Minutes of Meeting was achieved on 19 December 2016.					
3	The variance is due to the vehicle performance exceeding the number of critical failures allowable under RGT. Stage One (Engineering and Manufacturing Development) was extended by a four month period via CCP032 (executed 05 April 2017) to allow Thales Australia to remediate the critical failures and to undertake an additional RGT in order to fulfil the contractual requirements under Stage Two .					
4	The variance of Support System Detailed Design Review (SSDDR) of 14 months is due to the LRIP baseline not being ready for review until Critical Design Review exit in October 2017 and the contractor failed to meet the entry criteria in the SSDDR Checklist.					
5	The SSDDR was split into separate 'Operator' and 'Maintainer' reviews after the execution of CCP055 in November 2018 to align the training deliverables with the Introduction Into Service of the capability.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Maintenance Demonstration	PMV-L, Trailer and ICS	Dec 16	Dec 16	Jul 17	7	1
Reliability Growth Trial (RGT)	PMV-L and Trailer	Mar 17	Jul 17	N/A	N/A	2
Reliability Demonstration Test (RDT)	PMV-L and Trailer	Feb 18	N/A	Nov 18	9	3
Development Test & Evaluation (DT&E)	PMV-L, Trailer and ICS	Mar 17	Sep 17	Sep 17	6	4
Initial Maintenance Evaluation	PMV-L, Trailer and ICS	Oct 17	Jan 18	Jun 18	8	5
Second Maintenance Evaluation	PMV-L, Trailer and ICS	Jan 19	N/A	Jul 19	7	5
Acceptance Verification and Validation (AV&V)	PMV-L, Trailer and ICS	Jun 18	Jan 19	Dec 19	18	6, 7
Production Reliability Acceptance Test (PRAT)	PMV-L and Trailer	Jun 18	Jan 19	Mar 20	21	7
Low-Rate Initial Production (LRIP) Acceptance Last Batch	PMV-L, Trailer and ICS	Jun 18	Jan 19	Aug 19	14	6, 7
Full-Rate Production (FRP) Acceptance Last Batch	PMV-L, Trailer and ICS	Oct 20	May 21	Sep 21	11	6, 7
Notes						
1	The variance is due to the Commonwealth rejecting the first two versions of the Maintenance Demonstration Acceptance Verification Reports (AVR) submitted on 24 January 2017 and 30 March 2017. The approved version of the report was submitted to the Commonwealth on 01 June 2017, with the Notice of Approval signed on 03 July 2017.					
2	RGT was separated into the following three activities: <ul style="list-style-type: none"> RGT Number One was conducted over the period July to December 2016 and provided Thales with the opportunity to resolve any issues with the vehicles ahead of the formal trial activities that commenced under RGT Number Two. 					

Project Data Summary Sheets

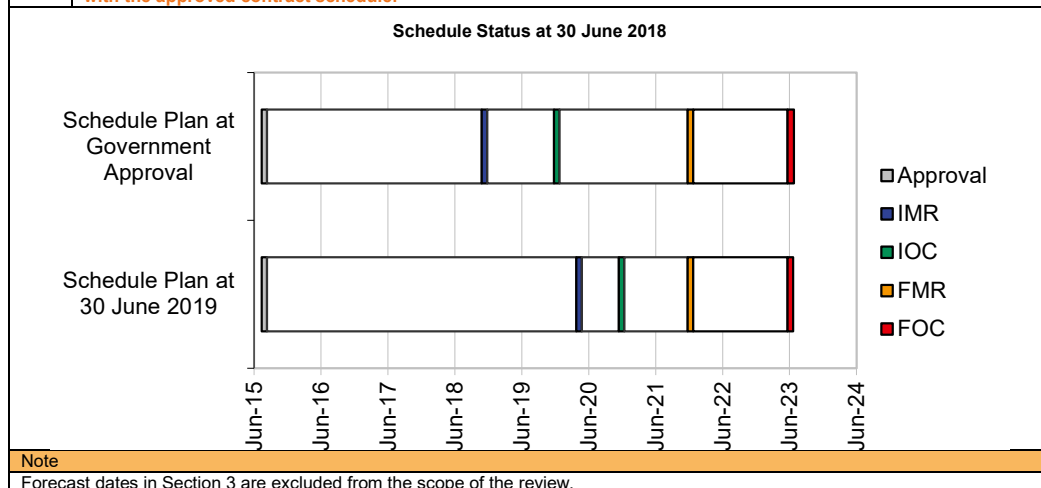
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	<ul style="list-style-type: none"> RGT Number Two commenced in November 2016. In January 2017, the pilot Hawkei vehicles had exceeded the seven allowable critical failures under the contract. Identified key root causes include supplier quality issues and immature components affecting hardware and software integration. A six-week corrective action period was implemented to allow Thales to undertake engineering upgrades. RGT Number Three (May to July 2017) followed this, which demonstrated reliability improvements on a number of sub-systems, but a number of recurring failures were evident.
3	The RDT was introduced as a Contract Change to confirm that failures identified during the RGT had been rectified before entering into the Production Readiness Acceptance Test. The RDT will prove that the implemented solutions for Critical Failure and Effective Function Failure described in the Reliability Remediation Plan have been resolved to the Commonwealth's satisfaction. The nine month delay in completing RDT is due to the delay in remediating the outstanding reliability issues.
4	As part of the extension of Stage One (Engineering and Manufacturing Development), DT&E has also been extended to facilitate further development testing and to mitigate against the AV&V activities required under Stage Two (LRIP).
5	The approval of AVR for the Initial Maintenance Evaluation was delayed by seven months due to the initial submission of the report being rejected by the Commonwealth, primarily due to the incompleteness of the Interactive Electronic Technical Publication (IETP) presented by Thales Australia. A second Maintenance Evaluation (ME2) was conducted in September 2018 to ensure the changes requested by the Commonwealth from the Initial Maintenance Evaluation were incorporated into the IETP. The Commonwealth received the final report from Thales supporting the achievement of this activity on 21 June 2019.
6	AV&V has been delayed by 18 months due to the requirement to extend reliability testing, which impacted on the date that the LRIP vehicle build state was established between the Commonwealth and Thales. The delay in establishing the vehicle build state impacted on vehicle availability to conduct AV&V activities. The reliability issues, design maturity and production delays have further impacted the completion of AV&V.
7	As part of the extension of Stage One (Engineering and Manufacturing Development), the start dates of some Stage Two (LRIP) and Stage Three (FRP) activities have also been delayed. Defence senior leadership is working closely with Thales to assess the vehicle's progress through PRAT, a pre-requisite for FRP.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

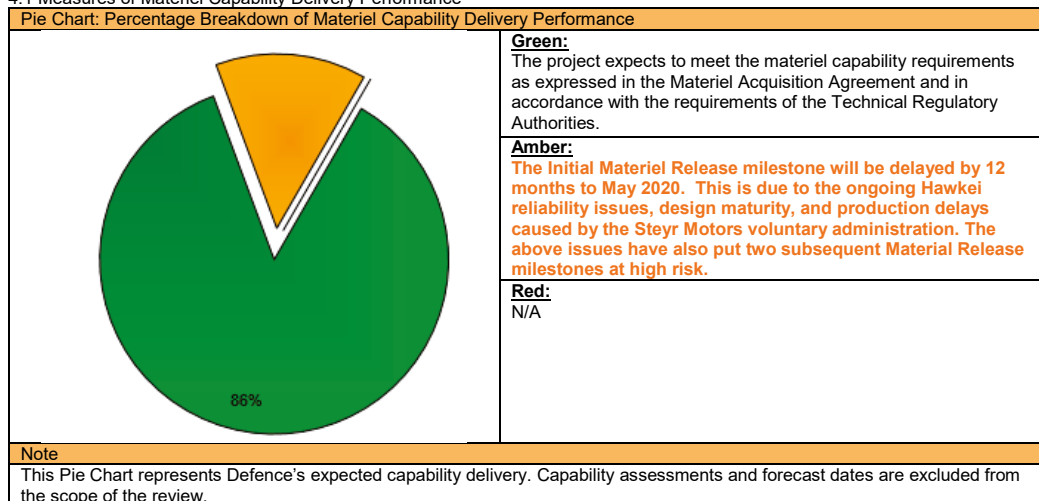
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 18	May 20	17	1
Initial Operational Capability (IOC)	Dec 19	Dec 20	12	1
Final Materiel Release (FMR)	Dec 21	Dec 21	0	2
Final Operational Capability (FOC)	Jun 23	Jun 23	0	2

Notes	
1	IMR was initially deferred by five months to enable the conduct of an additional vehicle reliability demonstration activity (four months) and the extension of Introduction into Service Training and the associated increase in vehicle deliveries (one month). IMR has been delayed by a further 12 months to May 2020, due to the Hawkei reliability issues, design maturity and production delays caused by Steyr Motors entering voluntary administration. IOC will be delayed by 12 months due to the Hawkei reliability issues, design maturity and production delays caused by Steyr Motors entering voluntary administration.
2	Thales has advised the Commonwealth that production can be increased to achieve FMR and FOC in accordance with the approved contract schedule.



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<p>IMR is a future dated milestone projected for May 2020.</p> <p>By IMR, the following will be delivered:</p> <ul style="list-style-type: none"> 108 PMV-L and 108 Trailers to be delivered in accordance with the Force Generation Cycle; 22 PMV-L and 22 Trailers for Introduction Into Service Training (increased from 14 PMV-L and 14 Trailers); Eight PMV-L and eight Trailers for the conduct of Verification and Validation (V&V), and PRAT; and Logistics support arrangements, including Training, Supply and Maintenance Systems. 	Not yet achieved
Initial Operational Capability (IOC)	<p>IOC is a future dated milestone projected for December 2020.</p> <p>Declaration of IOC will be made by the Capability Manager following the conduct of a Battle Group sized Operational Test and Evaluation (OT&E) activity to validate the Hawkei Fundamental Input to Capability components. The OT&E assessment criteria is to be defined by the Capability Manager.</p>	Not yet achieved
Final Materiel Release (FMR)	<p>FMR is a future dated milestone projected for December 2021.</p> <p>By FMR, the following will be delivered:</p> <ul style="list-style-type: none"> 1100 PMV-L and 1058 Trailers; and Introduction Into Service (IIS) Training and transfer of IIS training packages. 	Not yet achieved
Final Operational Capability (FOC)	<p>FOC is a future dated milestone projected for June 2023.</p> <p>Declaration of FOC will be made by the Capability Manager supported by the results of OT&E and confirmation by the Delivery Group (CASG) that the Fundamental Input to Capability components have been delivered as agreed. The FOC criteria are to be defined by the Capability Manager.</p>	Not yet achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the PMV-L will fail to successfully complete the Reliability Growth Program (RDT and PRAT), which will impact on schedule and performance. This could result from vehicle performance deficiencies or additional design modifications needing to be implemented into the developmental vehicle.	<ul style="list-style-type: none"> RDT was completed in November 2018 with reliability issues outstanding. This caused a delay to commencing PRAT while residual failures were remediated. This is now disclosed as an issue in Section 5.2. There remains a risk that PRAT will not be successfully completed. This risk is being treated through: <ul style="list-style-type: none"> Close Commonwealth supervision and involvement during the conduct of the Reliability Growth Program. Commonwealth and Supplier senior leadership engagement to maintain oversight of critical reliability issues, responding to help needed, and resource requirements / prioritisation.
There is a chance that delays in the provision of technical and logistic support data will impact the development of the PMV-L training and support system. This could result in the vehicle being rolled-out to units without a fully developed support system.	<ul style="list-style-type: none"> The inability to finalise the vehicle design, due to reliability issues, delayed the provision of technical and logistic support data required for the development of training materials. Maintenance courses therefore could not commence as planned. This is now disclosed as an issue in Section 5.2.
There is a chance that the evolutionary nature of the PMV-L C4I system and the misalignment of Defence C4I programs will delay the system development.	<ul style="list-style-type: none"> The ICS support system and maintenance documentation were not finalised in a timely manner, resulting in delay to ICS development. This is now disclosed as an issue in Section 5.2.
There is a chance that production delays from vehicle reliability, quality issues, and component availability will impact on the achievement of the Initial Materiel Release and Initial Operating Capability milestones.	<ul style="list-style-type: none"> Lower than expected production rate due to component availability and outstanding reliability issues has resulted in 12 months delay to IMR and IOC. This is now disclosed as an issue in Section 5.2. There remains a risk that further issues will cause further delays to IMR and IOC. This risk is being treated through: <ul style="list-style-type: none"> Commonwealth and supplier senior leadership engagement to maintain oversight of critical reliability and quality issues, responding to help needed, and resource requirements / prioritisation. Embed Commonwealth production and quality assurance representatives at the production line. Close engagement between the Project Office and Capability Manager to ensure the milestone requirements and capability delivery priorities are aligned.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
There is a chance that the Hawkei Full-Rate Production baseline will not fully meet the user's expectations, due to scope, budget and vehicle design constraints. This will impact on cost, schedule and reputation.	<ul style="list-style-type: none"> Conduct design traceability activities, in conjunction with the Capability Manager to validate scope and manage user expectations. Continual assessment of design maturity and scope compliance with the Prime Contractor.
There is a chance that the LAND 121 Phase 4 Program may be discontinued impacting on cost, schedule, performance and reputation. This will result in the PMV-L capability not being acquired.	<ul style="list-style-type: none"> Continuous engagement with Thales through Strategic Relationship Board on vehicle reliability remediation and Steyr Motors voluntary administration. Thales's progress towards remediating reliability failures increases confidence that the project will be successful and the capability acquired as planned.

5.2 Major Project Issues

Description	Remedial Action
Reliability Program development was not completed on time, resulting in delay to entering PRAT.	<ul style="list-style-type: none"> Re-benchmark key milestones and reset program schedule in consultation with the Capability Manager. Monitor Thales' progress through Strategic Relationship Board meetings and seek early intervention to remediate delays.
The delays in the provision of technical and logistic support data, due to design maturity and reliability issues, has impacted the development of the PMV-L through-life-support package.	<ul style="list-style-type: none"> Close Commonwealth oversight and support for the development and provision of the associated through life support contract deliverables. Implement interim support arrangements in consultation with the Capability Manager to ensure the Hawkei is sustained during the early stages of rollout.

ICS development has been delayed due to the ICS support system and maintenance documentation not being completed to schedule.	<ul style="list-style-type: none"> Alignment of ICS development with C4I and ILS development. Working groups hold regular meetings to manage the issue.
The vehicle reliability issues and component delays have impacted the project schedule and delayed the achievement of IOC, by 12 months from December 2019 to December 2020.	<ul style="list-style-type: none"> Close engagement between the Project Office, Prime Contractor and Capability Manager to ensure the milestone requirements and capability delivery priorities are aligned. Defence and the Prime Contractor are working collaboratively to resolve these issues.
The Introduction Into Service of the Hawkei has been affected by the Introduction Into Service of other LAND 121 vehicles, impacting on schedule and reputation.	<ul style="list-style-type: none"> Dedicated assessment of the LAND 121 training program to ascertain the way ahead. Additional funding and personnel allocated to Introduction Into Service tasks.
Some capability requirements have not been met by Thales' current design at this stage of the design process.	<ul style="list-style-type: none"> Requirements will need to be considered against suitable balance of capability need and feasible engineering options. Issues are openly discussed at Project Management Stakeholder Group meetings to seek the Capability Manager's direction as the project customer. Thales continues to progress design maturity to meet required specifications.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

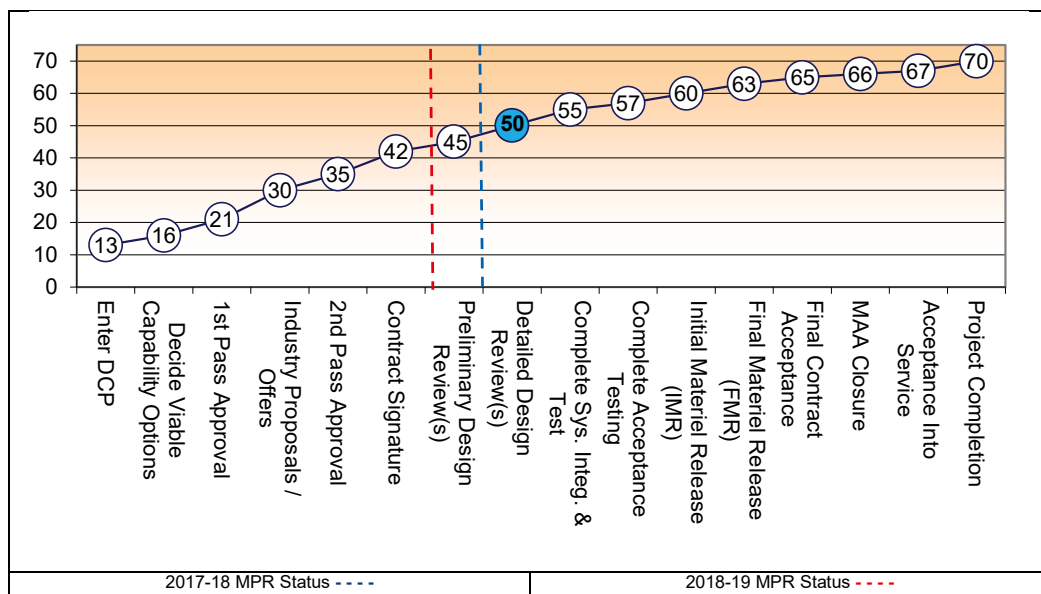
Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	6	7	6	7	6	6	6	44
	Explanation	<ul style="list-style-type: none"> Schedule: Hawkei reliability issues, design maturity and production delays have impacted the project schedule by 12 months. Thales has advised the Commonwealth that production can be increased to achieve FMR and FOC in accordance with the approved contract schedule. Requirement: The baseline design of the developmental capability is yet to be finalised and endorsed by the Capability Manager. Technical Understanding: The baseline design of the development capability is yet to be finalised, and verification & validation activities are still ongoing before full rate production of the vehicle commences. Technical Difficulty: Vehicle design and validation will not be finalised until the completion of PRAT. Commercial: Maintaining the contract against the ongoing reliability issues and production delays has been commercially challenging. Operations and Support: Completion of the baseline design will enable the Support System to be finalised. Detailed materiel and support requirements have been specified to a level necessary for procurement. The user trial in Iraq and Afghanistan informed the project of the support requirements for deployed vehicles. 							

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
<p>Developmental Capability. The PMV-L is a technically complex development project that requires active engagement with the contractor, multiple interagency stakeholders and projects from other domains.</p> <p>Maintaining close collaboration and communication with all stakeholders is critical for understanding the technical requirements for a first-of-type capability, and facilitating proactive risk management and contingency planning.</p>	First of Type Equipment
<p>Adequate Resourcing. First-of-type projects contain significant levels of complexity and require substantial effort to fulfil the right balance of technical, performance, risk, cost and schedule requirements. Appropriate investment is required by projects and the contractor from the outset to ensure such requirements are not over-optimistically represented or underestimated.</p> <p>Projects operating in a developmental environment are to pay greater attention to workforce management and project governance. The project is also to frequently assess contractor resources, capabilities and capacity in the lead up and during project delivery.</p>	Governance Contract Management First of Type Equipment
<p>Support from External Subject Matter Experts. A number of external subject matter experts with vast Defence and commercial experience were engaged during Tender Evaluations and Negotiations, and the Acquisition Phase, for advice and to provide independent assessments of technical, commercial and financial matters.</p> <p>Active participation of external advisors during Tender Evaluations and Negotiations, and the Acquisition Phase, considerably improved the project's understanding and approach towards commercial, industry and programmatic issues.</p>	First of Type Equipment
<p>Integrated ICS Team. The uncertainty in developing the ICS concept would have benefited from having an integrated and centralised team consisting of:</p> <ul style="list-style-type: none"> PMV-L project staff; staff from other interrelated communication projects; Capability Manager specialists; external subject matter experts/contractors; and specialist staff such as engineers. 	Resourcing Contract Management
<p>Vehicle Acceptance Resourcing and Planning. The early planning and generation of dedicated Commonwealth Production Liaison and Vehicle Acceptance staff (and processes) enables improved planning in conjunction with the OEM for Vehicle Acceptance and QA processes. This improves transition from design into the production and vehicle acceptance stage of the program.</p>	Contract Management Governance Resourcing

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	MAJGEN Andrew Bottrell
Branch Head	Ms Sarah Myers
Project Director	COL John-Paul Ouvrier

Project Data Summary Sheet¹⁴⁹

Project Number	AIR 8000 Phase 2
Project Name	BATTLEFIELD AIRLIFT – CARIBOU REPLACEMENT
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Acquisition Type	MOTS
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Apr 12
Government 2nd Pass Approval	Apr 12
Budget at 2 nd Pass Approval	\$1,156.5m
Total Approved Budget (Current)	\$1,442.1m
2018-19 Budget	\$55.7m
Project Stage	Initial Materiel Release
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project was approved to replace the retired Caribou capability and provide the Australian Defence Force (ADF) with an enhanced intra-theatre and regional airlift capability through acquisition of a fleet of ten new Light Tactical Fixed Wing aircraft. The Government approved solution is acquisition through United States Air Force (USAF) Foreign Military Sales (FMS) of the Leonardo built C-27J aircraft modified by L-3 Product Integration Division (PID) to the United States (US) Department of Defense Joint Cargo Aircraft (JCA) C-27J configuration, known as Spartan. The JCA C-27J is a Military Off The Shelf (MOTS) acquisition offering enhanced self-protection and interoperability that meets Australian requirements. The aircraft was operated by 35 Squadron at its Interim Main Operating Base (MOB) at Royal Australian Air Force (RAAF) Base Richmond and is now operated from its Final MOB at RAAF Base Amberley. Government agreed in May 2016 to delay Final Operating Capability (FOC) until December 2019. Project acquisition includes the ten aircraft, a training system, support system materiel elements, and three years of initial FMS training and support services from the aircraft In-Service Date (ISD), through Initial Operational Capability (IOC) to FOC.

1.2 Current Status

Cost Performance

In-year

The end of financial year underspend of \$7.7m is due to reductions in spares procurement requirements, refinement to implementation schedules for aircraft modification programs, and realignment of Structural Substantiation Program delivery timings.

Project Financial Assurance Statement

As at 30 June 2019, Project AIR 8000 Phase 2 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope, but yet-to-execute contracts carry some cost risk.

Contingency Statement

The project has not applied contingency in the financial year.

149 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

Schedule Performance

The original schedule of IMR and IOC were declared with caveats in December 2016. The IOC declaration encompassed the materiel caveats described by the project at IMR. FOC at end of 2017, as originally planned, was unachievable as a result of: Leonardo aircraft production delays associated with the transfer of the fuselage assembly line; reduced training throughput due to aircraft availability; the delayed start to US-based training in 2014; and delays associated with establishing facilities at the Main Operating Base at RAAF Base Amberley. Under a revised schedule agreed by Government, FOC is to be achieved by December 2019 (24 months behind original schedule), noting the capability will continue to mature beyond FOC, **including delivery of the Mature Training System. A key achievement of financial year 2018-19 was agreement of a head contract with Leonardo S.p.A., known as the Enduring Leonardo Contract deed, under which packages of work in support of project outcomes could be delivered. Under the deed, Defence signed contracts for Leonardo to establish a Program Management Office to manage work assigned by Defence, and for Leonardo to conduct a Flight Loads Test Program, which centres on gaining data to manage aircraft structural fatigue for the aircraft's life-of-type.**

FMR is unlikely to be achieved in October 2019 due to further work being required to support the Identification Friend or Foe (IFF) modification upgrade, achievement of full military type certification and provision of spares to support achievement of FMR.

Materiel Capability Delivery Performance

The C-27J aircraft is a relatively mature and well tested MOTS product. Notwithstanding, the project office is working through a number of capability baseline considerations identified post-establishment of the FMS Case. These baseline issues are associated with the configuration and certification status of the USAF JCA C-27J program, which were not finalised by the USAF at the time of divestiture. All ten aircraft have been accepted, with the last aircraft accepted in December 2017.

The project remains committed to the timely delivery of capabilities to support the operational intent of the C-27J. The project is unlikely to achieve FMR in October 2019 with further work required to support an ongoing IFF modification upgrade, achievement of full military type certification, and final spares delivery (less than 1% remaining).

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

A requirement to replace Defence's battlefield airlift capability was first identified in the 1980s. Defence ensured the battlefield airlift capability was maintained via a sustainment commitment to the Caribou until their retirement in 2009 and lease of additional B300 King Air aircraft until suitable replacement platforms and appropriate Defence Capability Plan funding could be allocated.

Government authorised Defence to issue a Letter of Request seeking price and availability information from the USAF for the C-27J on 30 September 2011. Defence approached Airbus Military for price and availability data for the Airbus Military C295 aircraft. Raytheon data for C-27J was solicited via Direct Commercial Inquiry. On 10 May 2012 Government announced it had approved the purchase of ten C-27J battlefield airlift aircraft via FMS from the US Government to replace the Caribou aircraft, at a total program cost of up to A\$1.4 billion.

Leonardo manufactured the C-27J Military Industrial Baseline Aircraft configuration which was then flown to the US for modification. L-3 PID, acting as the prime contractor to the US Government, was responsible for post-production integration of US improved mission systems. The design and integration work by L-3 PID enhanced the effectiveness of the baseline aircraft, ensuring that the US JCA variant, as offered through the FMS agreement, meets the battlefield airlift capability needed by Defence.

The USAF's potential to divest the C-27J was a known consideration that was factored into the business case presented to and approved by Government at project combined First and Second Pass in April 2012. In early 2013 the USAF confirmed its intention to divest their C-27J fleet and accelerated its schedule for withdrawal. Subsequently, in mid-2013, the USAF advised that it would not complete Military Type Certification (MTC) and that L-3 PID was, contrary to earlier advice, required by the Air National Guard to vacate the facilities occupied by the C-27J training school located at Robins Air Force Base, Georgia USA. This resulted in a late notice requirement for relocation of the L-3 training school to L-3 facilities in Arlington and Waco Texas, which resulted in a three-month delay to ISD (achieved June 2015).

Military Type Certification (MTC) is leveraging the Federal Aviation Authority civilian certification and USAF work completed at the time of its decision to cease its MTC. The USAF decision not to complete MTC has materially increased the cost, effort and schedule risk associated with the project achieving MTC. The Commonwealth has secured significant Intellectual Property licensing rights to technical data from Leonardo and L-3 PID to aid in MTC and through-life support of the C-27J.

Training Systems were impacted by the USAF's inability to acquire a suitable system for the Commonwealth. Consequently, the decision was made to manage and undertake training in Australia and acquire the Mature Training System via commercial arrangements. **The accepted Interim Training System currently offers training to aircrew and maintenance personnel at a dedicated training facility at RAAF Base Amberley and in Italy.**

Defence continues to build a close commercial and working relationship with Leonardo S.p.A., the original equipment manufacturer of the C-27J Spartan. In early 2019, Defence established a four-person C-27J Resident Project Team, located in Leonardo's facilities in Turin, Italy. This has contributed to the Project retiring numerous Risks and Issues associated with contracting, delivery of spares and support, Government approved aircraft upgrades, and OEM technical support.

Uniqueness

The C-27J is a MOTS aircraft acquisition with a limited number of changes to meet Australian requirements, such as: paint scheme; upgraded Radar Warning Receiver; updates to address obsolescence; and upgrade to the Mode 5 IFF system.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

The uniqueness of the project lies in the degree of Australian-specific contracting effort that was conducted by the USAF C-27J FMS Program Office to establish initial FMS training and support services as a result of USAF C-27J divestiture (generally, FMS leverages off a contemporary US military procurement). USAF contracting of US-based initial training from L-3 PID utilising the ADF Airworthiness Management System is also atypical. Historically, the USAF airworthiness management system has been utilised for such training arrangements; however, due to USAF C-27J divestiture, this option was no longer possible. Both the USAF and L-3 were unfamiliar with Australian airworthiness management system requirements.

Major Risks and Issues

The Government endorsed acquisition strategy accepted a number of risks stemming from, or exacerbated by, the likelihood of USAF C-27J divestiture. Notwithstanding these risks, the benefits of acquiring the USAF JCA-configured C-27J via FMS were assessed to outweigh these risks, and their likelihood of occurring was taken into account when developing initial project strategies and plans. However, the accelerated pace of USAF C-27J divestiture resulted in greater impact to the program than originally anticipated.

Current major project residual risks and issues are as follows:

C-27J Capability Baseline. The project has reviewed the C-27J capability baseline and identified a number of known incomplete capability requirements, some of which will be matured beyond FOC. Following confirmation of divestment, USAF ceased MTC activity and rectification of those incomplete capability requirements. The project has undertaken a detailed analysis to quantify and characterise the structural life-of-type of the airframe and proposed capability upgrades. These include Electronic Warfare Self Protection systems which impact project budget and schedule. They are not anticipated to be an impediment to achieving the overall capability defined in approved scope, but the capability is expected to mature beyond FOC.

USAF divestiture of C-27J. The C-27J capability delivery has been affected by US Government divestiture of their C-27J program leading to an impact on project schedule and cost. The USAF decision to divest of C-27J effectively decreases the global fleet by approximately 150 aircraft to an estimated 80 aircraft, reducing opportunities for sustainment and training cost sharing.

Spares Availability. The availability of spares and Support and Test Equipment delivered under the FMS case has not met the requirements of the Commonwealth. **The Project has completed all FMS and direct commercial sales ordering and is completing receipting into logistics systems.**

Commonwealth Support. The Project provided required Commonwealth support to Leonardo at the required time to conduct flight test activities in Italy. Competing priorities and the requirement for RAAF Aircraft Research and Development Unit (ARDU) personnel to participate had the potential to delay flight test, delaying the IFF Mode 5 upgrade.

Training. Delays in establishment of training services contracts under FMS impacted the training schedule and student throughput. Once established, the courseware standard delivered required active involvement by the Commonwealth to implement ongoing improvements.

During 2016-17 the Government agreed that alternative approaches to the training delivered under FMS were required. The project transitioned training from the USA to RAAF Richmond in July 2017, with the simulator element undertaken in Italy.

The project continues to investigate opportunities to deliver a Mature Training System at RAAF Amberley. Work is in progress to procure the Operational Flight Trainer through the Enduring Leonardo Contract. An opportunity to procure a Fuselage Trainer is also under development. These activities will form the basis of Mature Training System delivery post-FOC.

Other Current Related Projects/Phases

N/A.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Apr 12	Original Approved (Second Pass Approval)	1,156.5	
Jun 19	Exchange Variation	285.6	
Jun 19	Total Budget	1,442.1	
Project Expenditure			
Prior to Jul 19	Contract Expenditure – US Government	(648.1)	1
	Contract Expenditure – Leonardo Intellectual Property and Technical Data	(66.5)	1
	Contract Expenditure – Leonardo- Mode 5 IFF Upgrade	(3.8)	1
	Contract Expenditure – Leonardo- Structural Substantiation Program (Fuselage)	(3.5)	1
	Other Contract Payments/Internal Expenses	(63.6)	2
		(785.5)	
FY to Jun 19	Contract Expenditure – US Government	(3.2)	1
	Contract Expenditure – Leonardo Intellectual Property and Technical Data	(5.6)	1
	Contract Expenditure – Leonardo- Mode 5 IFF Upgrade	(7.7)	1
	Contract Expenditure – Leonardo- Structural Substantiation Program (Fuselage)	(12.7)	1

	Other Contract Payments/Internal Expenses	(18.8)		3
Jun 19	Total Expenditure		(48.0) (833.4)	
Jun 19	Remaining Budget		608.6	
Notes				
1	The scope of these contracts is explained further in Section 2.3 – Details of Project Major Contracts.			
2	Other expenditure comprises: operating expenditure, minor contract expenditure and other capital expenditure not attributed to the listed contracts.			
3	Other expenditure comprises: contractor support costs for Structural Substantiation Program, loadmaster seat development and certification purposes (\$7.7m), Support and Test Equipment, spares and global freight costs (\$5.2m), other project management support and administrative costs (\$5.6m) and operating expenditure related to initial sustainment costs (\$0.3m) also contribute to other expenditure.			

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
68.3	69.0	55.7	PBS - PAES: The variation is primarily due to a combination of adjustments to remaining aircraft spares, aircraft updates, certification, structural substantiation program schedules and other minor changes. PAES - Final Plan: Variance is due to reductions in spares procurement requirements, and refinement to implementation schedules for aircraft modification programs and realignment of Structural Substantiation Program requirements as an outcome of contract negotiations.
Variance \$m	0.7	(13.3)	Total Variance (\$m): (12.6)
Variance %	1.0	(19.3)	Total Variance (%):(18.4)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(0.0)	Australian Industry	The major factors contributing to the variance are amendments to aircraft modification contracts forecasts as a result of schedule slippage; revised Structural Substantiation Program and certification schedules; and increased FMS disbursement activity. The key reduction in spend centres on transfer of responsibility for spares and support equipment procurement to the C27J sustainment organisation.
		(9.6)	Foreign Industry	
			Early Processes	
		(1.3)	Defence Processes	
		3.2	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
55.7	48.0	(7.7)	Total Variance	
		(13.8)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
US Government	May 12	882.4	664.1	Reimbursement	FMS	1,2,3,
Leonardo	May 12	62.0	72.1	Firm Price	Modified ASDEFCON (Complex)	1,
Leonardo	Sept 17	18.7	23.1	Firm Price	ASDEFCON (Complex)	1, ,4
Leonardo	Dec 17	16.9	18.0	Firm Price	ADEFCON (Shortform Goods)	1,5
Leonardo	Feb 19	27.4	27.6	Firm price	Modified ASDEFCON (Complex)	1, 6
Leonardo FLTP	Mar 19	19.8	19.9	Firm price	Modified ASDEFCON (Complex)	1, 7
Notes						
1	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

2	Amendment 4 to FMS case AT-D-SGU was approved in May 2017 reducing the case value to \$US655.5m. The Amendment reflects removal of training device acquisition funding and an overall release of management reserve funding no longer require under the case. The amendment also reflects the CoA's intention to close the case early.			
3	Amendment 5 to FMS case AT-D-SGU was approved on 2 July 2018 reducing the FMS Case value to \$US617.7m. The Amendment releases further management reserve funding no longer required under the case. The amendment also reflects the CoA's intention to close the case early. Amendment 6, was approved in May 19 and has further reduced the FMS case to a value of \$US601.9m.			
4	Mode 5 IFF upgrade contract. Contract Change 1 was approved in October 2018 updating the milestone payment schedule introducing new maintenance related activities and DASR certification requirements.			
5	Aircraft Fuselage contract (Structural Substantiation Program Test Article).			
6	Leonardo Management of Services Contract.			
7	Flight Loads Test Program.			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 19		
US Government	10	10	10 C-27J Aircraft and associated training, training equipment, spares, ground support equipment and initial support	
Leonardo	N/A	N/A	C-27J Intellectual Property and Technical Data	
Leonardo	10	10	Mode 5 IFF modification for 10 C-27J aircraft	
Leonardo	1	1	Aircraft Fuselage procurement in support of C-27J Structural Substantiation Program	
Leonardo	N/A	N/A	Provision of Project Management Services in support of the Enduring Leonardo Contract (ELC)	
Leonardo	1	1	Provision of a Flight Loads Test Program in support of the C-27J Structural Substantiation Program	
Major equipment received and quantities to 30 Jun 19				
Ten aircraft accepted plus a substantial amount of the IP rights and Technical data received.				
Notes				
1	N/A			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Preliminary Design	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Critical Design	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Notes						
1	Contracts for the acquisition of the training devices have yet to be established. Training devices are not included in the revised FOC definition approved by Government in May 2016. Initial work is underway for the acquisition and maintenance support contracting for a Fuselage Trainer through L-3, USA.					
2	As of Quarter 1 2019, collaborative development of detailed requirements for the Operational Flight Trainer acquisition is underway with Leonardo S.p.A. Final negotiations are anticipated to commence in Quarter 4 2019.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Acceptance	C-27J Aircraft 1 (A34-001)	Jul 14	N/A	Nov 14	4	
	C-27J Aircraft 2 (A34-002)	Sep 14	N/A	Dec 14	3	
	C-27J Aircraft 3 (A34-003)	Nov 14	N/A	Aug 15	9	3
	C-27J Aircraft 4 (A34-004)	Feb 15	N/A	Mar 16	13	4
	C-27J Aircraft 5 (A34-005)	Aug 15	N/A	Aug 16	12	5
	C-27J Aircraft 6 (A34-006)	Oct 15	N/A	Nov 16	13	5
	C-27J Aircraft 7 (A34-007)	Dec 15	N/A	Mar 17	15	5
	C-27J Aircraft 8 (A34-008)	Feb 16	N/A	Aug 17	18	3, 5
	C-27J Aircraft 9 (A34-009)	Apr 16	N/A	Oct 17	18	3, 5
	C-27J Aircraft 10 (A34-010)	May 16	N/A	Dec 17	19	3, 5
	Operational Flight Trainer	TBA	TBA	TBA	TBA	1, 2

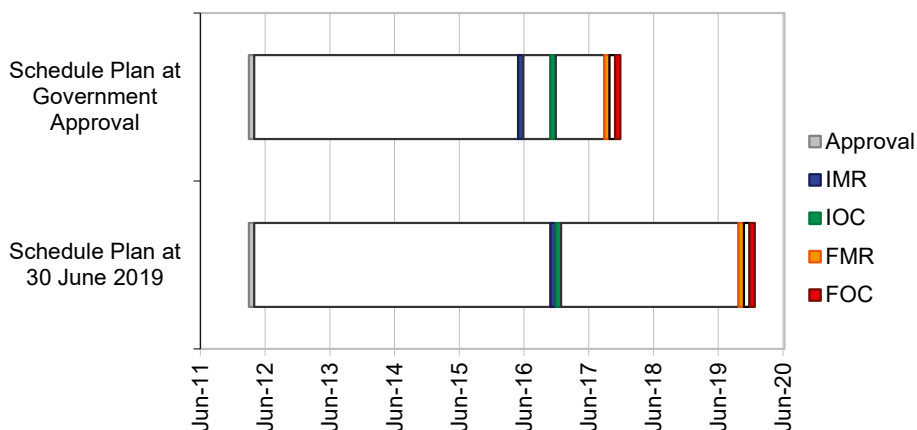
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Notes						
1	Contracts for the acquisition of the training devices have yet to be established.					
2	See Section 3.1 Note 2.					
3	Delivery of Aircraft was delayed due to the requirement for repair of the life raft door following damage sustained during the acceptance test flight, and the requirement for delivery of minor waiver data to support aircraft acceptance (later rectified through a contract change proposal).					
4	Delivery of Aircraft 4 was delayed due to availability of required spares from Leonardo to rectify a number of discrepancies and the prioritisation of aircraft components for use on other aircraft.					
5	Leonardo's decision to close its Naples fuselage production facility and consolidate all C-27J production at its Turin facility resulted in a delay to delivery of Aircraft 5 through 10. However, Leonardo's production consolidation was beneficial to the overall production of aircraft. From Aircraft 5, there were considerable improvements in aircraft build quality and the project was able to recover some lost production schedule. Improvements continued as a result of Leonardo's consolidation decision and management of its supply chain.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Mar 15	Jun 15	3	1
Initial Materiel Release (IMR)	Jun 16	Dec 16	6	2
Initial Operational Capability (IOC)	Dec 16	Dec 16	0	3
Final Materiel Release (FMR)	Oct 17	Oct 19	24	4, 5
Final Operational Capability (FOC)	Dec 17	Dec 19	24	4

Notes				
1	Variance due to delays in establishing FMS support and training arrangements in the US.			
2	Variance due to delay in delivery of Aircraft and adequate support. IMR was declared with caveats relating to deficiencies in supply support and training courseware.			
3	IOC was declared with caveats in December 2016 with four aircraft delivered to Australia. The IOC caveats encompassed the limitations described by the project at IMR, which have been resolved.			
4	Variance due to delays in aircraft production, and construction of facilities at RAAF Amberley. In May 2016, noting the decision by Leonardo to consolidate aircraft production at its Turin facility and cognisant of issues surrounding USAF C-27J divestiture, Government agreed to delay FOC to December 2019 and redefine FOC to exclude the Mature Training System including the flight simulator. Scoping work for capability improvements in avionics and electronic self-protection systems may contribute to capability maturity post-FOC. These changes are included in project management documentation.			
5	The project is unlikely to achieve FMR in October 2019 due to further work being required to support the IFF modification upgrade, achievement of full military type certification and provision of spares to support achievement of FMR.			

Schedule Status at 30 June 2019



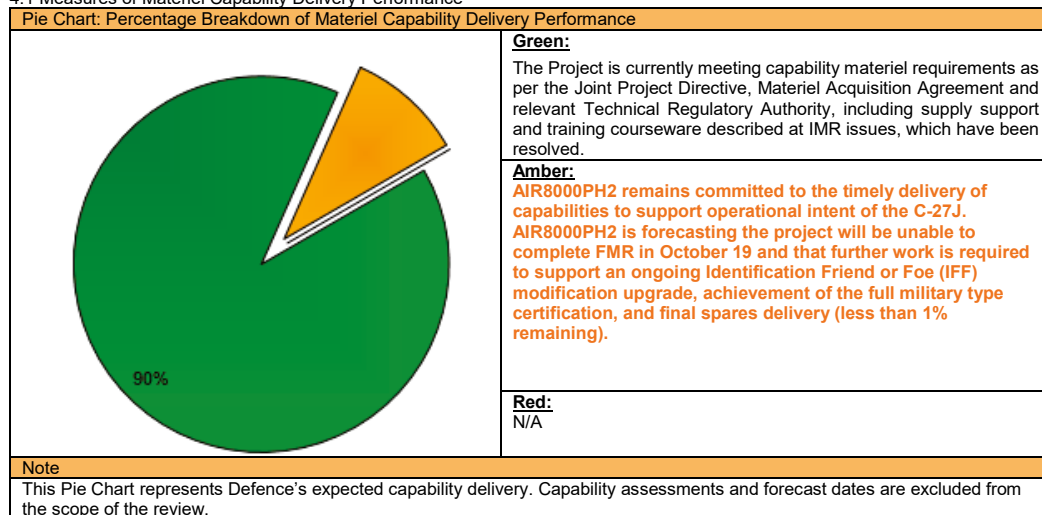
Note	
Forecast dates in Section 3 are excluded from the scope of the review.	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Delivery of three aircraft and sufficient logistics support (including trained personnel) to support initial operations. IMR was declared with caveats in December 2016 (refer to section 5.2). Caveats were resolved Quarter 2 2017.	Achieved
Initial Operational Capability (IOC)	Initial operations from interim Main Operating Base (MOB) (RAAF Richmond). Three C-27J aircraft delivered to the Interim MOB with sufficient operational crews, maintenance teams, training, and support infrastructure. The squadron will conduct air logistics support and airborne operational roles.	Achieved
Final Materiel Release (FMR)	All 10 aircraft delivered and associated logistics support (including trained personnel) to support mature level of operations. Aeromedical Evacuation and Search and Rescue roles enabled, and logistics support available at the final Main Operating Base. FMR is forecast for October 2019.	Not yet achieved
Final Operational Capability (FOC)	Mature level of operations from the final MOB. MOB Operational Facilities complete and occupied. Sufficient spares and maintenance equipment to maintain mature operations. A training system sufficient to maintain mature operations is achieved.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks –

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
C-27J Capability Baseline. The project has reviewed the C-27J capability baseline and identified a number of known incomplete capability requirements, some of which will be matured beyond FOC. The review identified limitations to the structural life-of-type of the airframe and proposed capability upgrades including Electronic Self Protection systems impacting project budget and schedule.	A capability baseline confirmation process was established to address the known deficiencies. The baseline confirmation process has culminated in a plan to address deficiencies. Each deficiency will be assessed based on its acceptability or importance to capability in order to determine a priority for rectification. A Structural Substantiation Program will test the life-of-type of the airframe. Post mitigation review of the structural life-of-type assesses the wing risk as medium and the fuselage risk as low as it is assumed that testing will be completed before the fuselage life of type is reached.

	<p>As approved by Government in the original 2012 project approval, an upgrade to the Mode 5 IFF system was signed in September 2017 with the Original Equipment Manufacturer of the aircraft. Additional resources are being applied to Mode 5 IFF delivery (which incorporates AIMS) in an attempt to meet FOC and Chief of Air Force directive.</p> <p>The Project monitored the sustainment TLS provider ramp up forecasting possible additional workload prior to the TLS provider reaching certified engineering entity status.</p> <p>Management and mitigation activities for the whole of project affordability assess the risk to achieving capability requirements as low.</p>
<p>Training. Delays in establishment of contracts between the US Government and L-3 has impacted the training schedule and student throughput. The courseware standard delivered required active involvement by the Commonwealth to implement ongoing improvements and meet perceived gaps in US based training.</p>	<p>The project transitioned training from the USA to RAAF Richmond in July 2017, with the simulator element undertaken in Italy. Continuity of training leading up to cessation in the US was actively managed, planned and tested to ensure continuity without impact to capability.</p> <p>During 2016-17 the Government agreed that alternative approaches to FMS were required. The project continues to investigate opportunities to deliver a Mature Training System at RAAF Amberley. Work is in progress to procure the Operational Flight Trainer through the Enduring Leonardo Contract. An opportunity to procure a Fuselage Trainer is also under development. These activities will form the basis of Mature Training System delivery post-FOC.</p> <p>The Estate and Infrastructure Group has now completed construction of the Training Support Facility at RAAF Amberley, and the facility was accepted by the project in February 2018.</p>
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues –

Description	Remedial Action
<p>USAF Divestiture of C-27J. The USAF C-27J divestiture has had a greater than anticipated impact on project budget and schedule. Accelerated USAF divestiture resulted in incomplete Military Type Certification (MTC) by the USAF with unanticipated impact on airworthiness and training outcomes.</p>	<p>Completion of MTC has required additional Project resourcing to achieve FOC on schedule.</p> <p>The delayed start to training in the US translated to a three month delay to achievement of the planned In-Service Date at 35 Squadron.</p> <p>Finalisation and closure of the US-based initial training system has occurred and the interim training system was established in Australia in July 2017.</p> <p>Activities to refine scope of the mature training system, avionics and electronic self-protection systems are progressing to schedule.</p> <p>The final impact to cost will be understood once the contracts for the various systems have been finalised.</p>
<p>Spares availability. The availability of spares and Support and Test Equipment delivered under the FMS case has not met the requirements of the Commonwealth.</p>	<p>The Project worked closely with the USAF to minimise delays to the delivery of spares and Support and Test Equipment. The Project has completed all FMS and Direct Commercial Sales ordering, is completing receipting into logistics systems, and the sustainment organisation is managing and modelling spares requirements into the future.</p> <p>As a result this issue has been closed.</p>
<p>Inability of Commonwealth to support Leonardo Mode 5 IFF flight test activities.</p>	<p>The Project continues to support Leonardo in refining the Mode 5 IFF schedule to an acceptable standard and actively managing resources availability to ensure competing priorities are considered and alternatives implemented. Flight test support was achieved during February – March 2019.</p> <p>As a result this issue has been closed.</p>
Note	
Major risks and issues in Section 5 are excluded from the scope of the review	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total																																																			
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support																																																				
Project Stage	Benchmark	10	8	8	8	9	8	9	60																																																			
Initial Materiel Release	Project Status	7	7	8	9	9	6	9	55																																																			
	Explanation	<ul style="list-style-type: none">Schedule: Critical Path activities understood, however, delays to critical milestones have been realised against original schedule and since has been replanned in line with advice to Government. Performance against the schedule indicates achievement within the delivery window of the Materiel Acquisition Agreement.Cost: Progress of USAF contracting action has enabled FMS cost to be better understood. Current activity for Mature Training System delivery and scoping of capability enhancements indicate that the costs are currently expected to be contained within the available budget.Technical Understanding: Knowledge necessary to operate and support the solution has been transferred to ADF and contractors as appropriate.Commercial: Contractor has delivered all ten aircraft and has the plans, skills and capacity to undertake the remaining work and ramp-up resources needed as planned.																																																										
<table><caption>Project Maturity Score (MPR) Data</caption><thead><tr><th>Project Stage</th><th>2017-18 MPR Status</th><th>2018-19 MPR Status</th></tr></thead><tbody><tr><td>Enter DCP</td><td>13</td><td></td></tr><tr><td>Decide Viable Capability Options</td><td>16</td><td></td></tr><tr><td>1st Pass Approval</td><td>21</td><td></td></tr><tr><td>Industry Proposals / Offers</td><td>30</td><td></td></tr><tr><td>2nd Pass Approval</td><td>35</td><td></td></tr><tr><td>Contract Signature</td><td>42</td><td></td></tr><tr><td>Preliminary Design Review(s)</td><td>45</td><td></td></tr><tr><td>Detailed Design Review(s)</td><td>50</td><td></td></tr><tr><td>Complete Sys. Integ. & Test</td><td>55</td><td>55</td></tr><tr><td>Complete Acceptance Testing</td><td>57</td><td>57</td></tr><tr><td>Initial Materiel Release (IMR)</td><td>60</td><td>60</td></tr><tr><td>Final Materiel Release (FMR)</td><td>63</td><td>63</td></tr><tr><td>Final Contract Acceptance</td><td>65</td><td>65</td></tr><tr><td>MAA Closure</td><td>66</td><td>66</td></tr><tr><td>Acceptance Into Service</td><td>67</td><td>67</td></tr><tr><td>Project Completion</td><td>70</td><td>70</td></tr></tbody></table>										Project Stage	2017-18 MPR Status	2018-19 MPR Status	Enter DCP	13		Decide Viable Capability Options	16		1st Pass Approval	21		Industry Proposals / Offers	30		2nd Pass Approval	35		Contract Signature	42		Preliminary Design Review(s)	45		Detailed Design Review(s)	50		Complete Sys. Integ. & Test	55	55	Complete Acceptance Testing	57	57	Initial Materiel Release (IMR)	60	60	Final Materiel Release (FMR)	63	63	Final Contract Acceptance	65	65	MAA Closure	66	66	Acceptance Into Service	67	67	Project Completion	70	70
Project Stage	2017-18 MPR Status	2018-19 MPR Status																																																										
Enter DCP	13																																																											
Decide Viable Capability Options	16																																																											
1st Pass Approval	21																																																											
Industry Proposals / Offers	30																																																											
2nd Pass Approval	35																																																											
Contract Signature	42																																																											
Preliminary Design Review(s)	45																																																											
Detailed Design Review(s)	50																																																											
Complete Sys. Integ. & Test	55	55																																																										
Complete Acceptance Testing	57	57																																																										
Initial Materiel Release (IMR)	60	60																																																										
Final Materiel Release (FMR)	63	63																																																										
Final Contract Acceptance	65	65																																																										
MAA Closure	66	66																																																										
Acceptance Into Service	67	67																																																										
Project Completion	70	70																																																										
2017-18 MPR Status - - -					2018-19 MPR Status - - -																																																							

Section 7 – Lessons Learned

7.1 Key Lessons Learned –

Description	Categories of Systemic Lessons
The level of risk and complexity contained in an FMS Letter of Offer and Acceptance is often understated and poorly understood. Whilst an FMS program for MOTS equipment and associated support affords a number of advantages, the transfer of a significant amount of project and technical management to the US Government implementing agency, and the weak bargaining position of the Commonwealth, increases the project's exposure to technical, schedule and cost risk. For an FMS program the level of Commonwealth contract and financial management involvement and oversight of industry is very low in comparison to that mandated for Direct Commercial Sale contracts, yet both procurement methods confront similar issues. This accords the FMS customer a 'Best Endeavours' approach to business. Adequate Commonwealth participation in key project management and technical oversight activities in the US, as provided for in the Government Combined First and Second Pass submission, is critical to providing the necessary level of project and contract management. In the case of C-27J, divestiture has further accentuated project risk and complexity, increasing the need for ongoing engagement of the USAF FMS program office and L-3 PID to ensure Commonwealth requirements and risks are adequately understood and managed. The planned downsizing and closing of the USAF's project office and cessation of USAF C-27J activities and contracts further reduces the ability of the USG to achieve customer requirements normally delivered under the FMS system. This drives the Commonwealth's approach to deliver certain outputs via Direct Commercial Sales.	Contract Management
The practice of approving projects with staffing to be found from within existing Divisional resourcing can result in 'late to need' or understaffing at critical project planning and execution phases that is counter productive to achieving project outcomes. Further, the recruitment process lead times for candidates not already within the ADF or Australian Public Service can create significant extended vacancies within the Project workforce, with this being exacerbated by the relatively short notice that personnel are obliged to provide for internal transfers. This is exacerbated when the Department imposes a recruiting freeze on the workforce. Whilst outsourced services may be suitable in some instances to mitigate this risk, in such circumstances they are not always available, the most efficient, or affordable, and come with an additional administrative overhead. In particular, rapidly approved projects, such as AIR 8000 Phase 2, which gained combined Government Pass approval, should be priority staffed as outlined in the approved project workforce plan, on which the Materiel Acquisition Agreement schedule was developed.	Resourcing
Accelerated project approval, through a combined government 1st and 2nd Pass, carries additional project execution risk given the likelihood that data fidelity and planning maturity will be otherwise inherently lower. As such, all effort should be made to understand the associated risk premium versus the benefit an accelerated project approval offers. In the case of AIR 8000 Phase 2 the potential impact of USAF divestiture was not fully appreciated across the full breadth and depth of the project. Any assumption that because procurement is via FMS it is low risk must be fully tested.	Off-The-Shelf Equipment
Contracting with commercial entities that have had no previous experience with how the Commonwealth contracts, manages, controls, and reviews contract performance requires significant awareness, education and adjusting by both parties. Commonwealth acknowledgement that outcomes can be achieved without following the Commonwealth's usual or embedded processes requires substantial effort by Commonwealth personnel to accept the change, mentor and educate other Commonwealth entities, and to act with restraint towards the contractor. Commonwealth personnel having largely only worked with or in one system, the Commonwealth system, and are challenged to accept other ways to achieve the same outcome. Similarly, processes judiciously established in Defence are not always easily mapped to a civilian entity's system. This requires substantial detailed communication and time commitment to map dissimilar system outcome points between the two organisations' systems by Subject Matter Experts in that field - this takes time and effort that may not have been foreseen.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 2019

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Graham Edwards
Project Director	GPCAPT Chris Ellison
Project Manager	WGCDR Susan Liddy

Project Data Summary Sheets

Auditor-General Report No.19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁵⁰

Project Number	SEA 1654 Phase 3
Project Name	Maritime Operational Support Capability (Replacement Replenishment Ships)
First Year Reported in the MPR	2017-18
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Apr 14
Government 2nd Pass Approval	Apr 16
Budget at 2 nd Pass Approval	\$1,004.6m
Total Approved Budget (Current)	\$1,070.6m
2018-19 Budget	\$216.5m
Project Stage	Detailed Design Review
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The SEA 1654 Phase 3 Maritime Operational Support Capability (MOSC) Project will replace both HMA Ships *Success* and *Sirius* with a single class of two Auxiliary Oiler Replenishment (AOR) Ships to sustain deployed maritime forces.

The primary role of the AOR Ships is the provision of afloat-support capability to fleet units. Afloat support is the underway replenishment of liquid and solid cargo, including high-flashpoint marine diesel fuel and aviation fuel, potable water, explosive ordnance, fresh and frozen provisions and general stores, utilising ship fitted systems or helicopters. The secondary role of the AOR Ships is to provide limited resupply in support of operations ashore.

1.2 Current Status

Cost Performance

In-year

End of year underspend is \$22.5m. This variance is primarily due to a delay in payment for training, spares provisioning, escalation adjustments, and other materiel procurement activities until the 2019/20 financial year. This delay in payments has no impact on the delivery or introduction into service dates of the AOR Ships for the SEA 1654 Phase 3 Project.

Project Financial Assurance Statement

As at 30 June 2019, the SEA 1654 Phase 3 Project has reviewed the approved scope and budget for those elements required to be delivered. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget **including contingency** remaining for the project to complete against the agreed scope.

Contingency Statement

The project has applied contingency in the financial year. This is due to budgetary pressure as a result of the cost impact for contingent events:

- **The cost of implementing capability requirements, including provisioning of spares, Identification Friend or Foe (IFF) and the Navigation Display System (NDS), exceeding the project budget allocated at 2nd Pass Approval;**
- **The cost of increased Australian Industry Capability (AIC) activities; and**
- **The cost of engaging a commercial crew arrangement for transit of the AOR Ships from Spain to Australia prior to introduction into service.**

150 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

The SEA 1654 Phase 3 Project previously completed Critical Design Review (CDR) and cut steel for the AOR Ship 1 on schedule in June 2017.

Major SEA 1654 Phase 3 Project milestones achieved in 2018-19 include:

- **Launch of Supply in November 2018;**
- **Keel Laying of the second AOR Ship, *Stalwart*, in November 2018;**
- **70% Blocks Erected of *Stalwart*, with the 30th Block erected on the slipway in June 2019; and**
- The successful completion of a number of contracted Mandated System Reviews (MSRs) **necessary for the future Acceptance of the Mission System and Support System of the AOR Ships** including the **Provisioning Preparedness Review (PPR) and Test Readiness Review (Platform) (TRR) in June 2019.**

Production of the AOR Ships has continued to progress throughout 2018/19 in Spain, with ship launch of *Stalwart* currently forecast for **Q3 2019**.

Final Operational Capability (FOC), which was forecast for an early achievement date of May 2022 in the 2017-18 MPR, is currently forecast for achievement in December 2022. This remains within the original schedule approved by Government at Second Pass.

The SEA 1654 Phase 3 Project remains on track to achieve the schedule requirements for the achievement of Materiel Release and Operational Capability of the AOR Ships as approved by Government at Second Pass.

Materiel Capability Delivery Performance

The SEA 1654 Phase 3 Project has not delivered any materiel capability to date. *Supply* was launched in November 2018, with the launch of *Stalwart* scheduled for **Quarter 3** 2019. The project is on track to meet the IMR and FMR milestones in 2020 and 2021 respectively.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Royal Australian Navy (RAN) currently has two afloat-support ships to conduct Replenishment at Sea (RAS) operations. HMAS *Success* was commissioned in 1986 and is based on the French designed Durance class AOR. HMAS *Sirius* was commissioned in 2006 and is a Korean built commercial product tanker acquired and converted to an Auxiliary Oiler (AO).

The Defence White Paper 2013 (DWP 2013) identified the requirement for the RAN to resupply its deployed ships as an essential capability given the size of the area over which its Naval forces operate and the extended periods they may be required to remain at sea. It advised the Government's intention to replace the capability currently provided by *Success* and *Sirius* at the first possible opportunity; which would include the examination of options for local, hybrid and overseas build, or the leasing of an existing vessel.

In light of the urgent need to forestall a capability gap in this crucial area, and supported by value for money considerations, the Government provided First Pass approval in April 2014 for Defence to conduct a limited competitive tender process between Navantia S.A. (Navantia) of Spain and Daewoo Shipbuilding and Marine Engineering (DSME) of South Korea for two replacement replenishment ships based on existing Military-Off-the-Shelf (MOTS) designs.

The SEA 1654 Phase 3 Project entered into contracts with DSME and Navantia on 7 and 10 October 2014 respectively, for the Risk Reduction and Design Studies (RRDS). The primary RRDS deliverable was the Mission System Specification (MSS) for the AOR Ship design solution, as well as an indicative support strategy.

The Government provided Second Pass approval in April 2016 to acquire two AOR ships and associated support systems from Navantia, including an initial period of five years in-service support. On 5 May 2016, the \$640 million acquisition contract was signed with Navantia to build the two AOR Ships in Spain, with delivery contracted to occur in 2019 and 2020 respectively.

Although the new AOR Ships will be built overseas, Australian Industry participation is estimated to be in excess of \$120 million. In addition, the initial \$250 million five-year sustainment contract also signed with Navantia, will be undertaken in Australia (note this contract is not included within Section 2.1 of this PDSS given it refers to the funding of sustainment).

On 17 November 2017, the Minister for Defence announced the AOR Ships would be named HMAS *Supply* and HMAS *Stalwart*.

Uniqueness

The acquisition and support contracts were both signed on the same date and with the same Contractor, Navantia, with linkages between the acquisition and initial transitional five year in-service support Conditions of Contract.

While the AOR Ships are based on the existing MOTS design, based on the Spanish *Cantabria* class design, the minimal changes incorporated into the MSS have been limited to those required to meet the RAN's essential requirements, environmental obligations and statutory requirements.

The AOR Ships will be built and delivered in Spain, before transit to Australia for completion of an Australian fit out period prior to the introduction into service of each AOR Ship.

Major Risks and Issues

The major risk the SEA 1654 Phase 3 Project currently faces is the risk to the achievement of Initial Operational Release (IOR) in mid-2020 as a result of the current issue of delays and deficiencies associated with the Logistics Support Analysis (LSA) program, related Integrated Logistic Support (ILS) deliverables **and the production and test program in Ferrol Spain.**

The project also currently has a key issue relating to delays to delivery and Approval of ILS deliverables **and crew Training (including availability of Training Facilities, Equipment and Aids)** are impacting the schedule leading up to the **June 2020**

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Acceptance of the AOR Ship Support System and Operative Date (OD) of the Support Contract.
Other Current Related Projects/Phases Project N2262 - Facilities to Support SEA1654 Phase 3 MOSC: The SEA 1654 Phase 3 Project Second Pass Approval also included the approval of scope for, and a significant percentage of the capital acquisition cost allocated to, the delivery of the facility requirements for the MOSC under the Estate and Infrastructure Group (E&IG) Project N2262. The supporting facilities and infrastructure works being delivered at Stirling, Garden Island Defence Precinct and Randwick Barracks under N2262 will be critical to the successful introduction and sustainment of the MOSC. Note the total approved budget and expenditure history included within this PDSS only includes Capability Acquisition and Sustainment Group (CASG) allocated funding and therefore Project N2262 budget and expenditure is excluded from the scope of this report.
Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Apr 14	Original Approved	13.2	1
Apr 16	Government Second Pass Approval	991.4	2
	Total at Second Pass Approval	1,004.6	
Jun 16	Real Variation - Transfer	69.1	3
Apr 19	Real Variation - Transfer	0.3	5
Jun 19	Exchange Variation	(3.4)	
Jun 19	Total Budget	1,070.6	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Navantia S.A.	(323.5)	
	Contract Expenditure – Raytheon Australia	(20.6)	
	Other Contract Payments/Internal Expenses	(12.1)	4
		(356.2)	
FY to Jun 19	Contract Expenditure – Navantia S.A.	(184.4)	
	Contract Expenditure – Raytheon Australia	(4.5)	
	Other Contract Payments/Internal Expenses	(5.1)	4
		(194.0)	
Jun 19	Total Expenditure	(550.2)	
Jun 19	Remaining Budget	520.4	
Notes			
1	This project's original budget amount is that prior to achieving Second Pass Government approval.		
2	The Government Second Pass Approval transfer amount only includes funding transferred to CASG, including contingency. It does not include approved capital funding transferred to Navy and other Defence Groups.		
3	Transfer of funding for Training under the acquisition contract Not To Exceed (NTE) price for Training delivery and development CCPs from Navy.		
4	Other expenditure comprises operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts.		
5	Transfer of funding is for Materiel Data Exchange Specification (MDES) CCP under the acquisition contract from Navy.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
280.0	285.7	216.5	PBS-PAES: The forecast variation is primarily due to the increase in Contract Change Proposals for the Prime Contract relating to Training Development and spares. PAES-Final Plan: Slippage, primarily due to the reprogramming of spares provisioning and

			training delivery, forecast to occur early in the next financial year.
Variance \$m	5.7	(69.2)	Total Variance (\$m): (63.5)
Variance %	2.0	(24.2)	Total Variance (%): (22.7)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	In-year variance to date is primarily due to the reprogramming of spares provisioning and training delivery, forecast to occur early in the next financial year.
		(22.5)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
216.5	194.0	(22.5)	Total Variance	
		(10.4)	% Variance	

2.3 Details of Project Major Contracts

3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Navantia S.A.	May 16	646.8	688.3	Fixed with indices escalation	ASDEFCON	1, 2, 3
Raytheon Australia	Nov 16	45.8	46.0	Fixed	ASDEFCON	3, 4
Notes						
1	This relates to the acquisition contract with Navantia only. The responsibility for the scope and funding of support contract is under the AOR Systems Program Office (AORSPO).					
2	The increase in the acquisition contract price with Navantia, partly offset by foreign exchange fluctuations, predominately relates to agreed CCPs for the delivery of the Identification Friend or Foe (IFF) Capability solution for each AOR Ship, training development, and the supply of 4,501 tonnes of Australian steel for use in the construction of the second AOR Ship, Stalwart.					
3	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
4	The small increase in the contract price with Raytheon Australia is due to minor fluctuations foreign exchange.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Navantia S.A.	2	2	AOR Ships Mission and Support Systems.			
Raytheon Australia	2	2	Phalanx Block 1B Baseline 2 Close-In Weapon System (CIWS) and ancillary equipment.	1		
Major equipment received and quantities to 30 Jun 19						
Nil.						
Notes						
1	The CIWS will be delivered with one Remote Control Station (RCS) and one Local Control Station (LCS) per AOR Ship.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirement	Mission System	May 16	N/A	May 16	0	1
	Support System	Jul 16	N/A	Jul 16	0	
Preliminary Design	Mission System and Support System	Dec 16	N/A	Dec 16	0	
Critical Design	Mission System and Support System	Jun 17	N/A	Jun 17	0	2
Notes						
1	The key objectives of the System Requirements Review (SRR) and System Definition Review (SDR) for the Mission System, primarily establishing and validating the functional baseline contained in the contracted MSS, were achieved prior to the acquisition contract Effective Date (ED) as part of the First Pass RRDS contract and subsequent Request for Tender (RFT) Offer Definition and Improvement Activity (ODIA).					
2	Production on the AOR Ships commenced following CDR, with cutting steel occurring on 19 June 2017.					

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

3.2 Contractor Test and Evaluation Progress

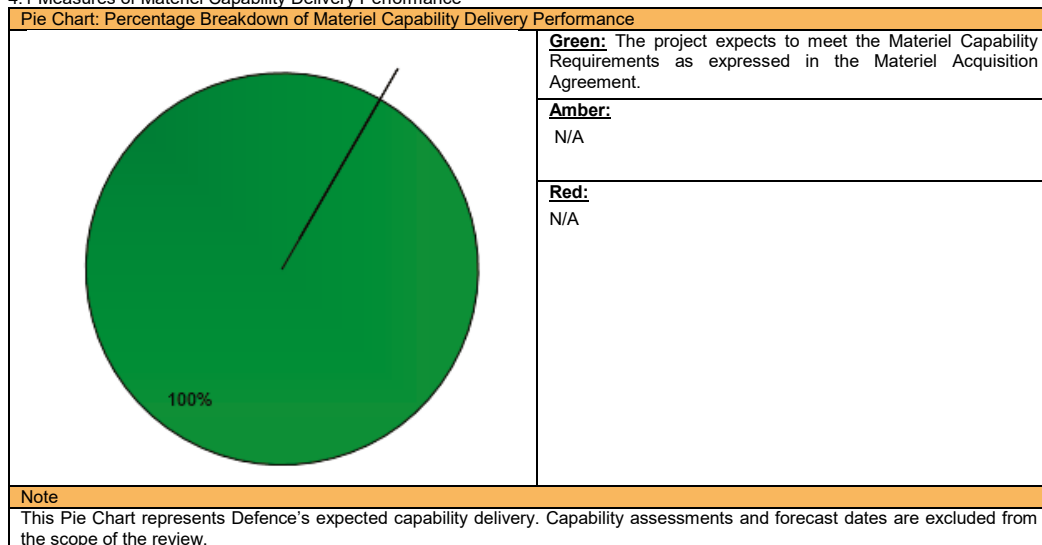
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	AOR Ship 1	Aug 19	N/A	Jan 20	5	1, 2, 3
	AOR Ship 2	May 20	N/A	Jul 20	2	1, 2, 3
Acceptance	AOR Ship 1	Sep 19	Jun 20	Jun 20	9	3, 4
	AOR Ship 2	Jun 20	Dec 20	Dec 20	6	3, 4
Notes						
1	System integration planned and forecast dates, including the installation, set-to-work, and testing of all systems on-board the AOR Ships by Navantia, are based on the completion of the Sea Acceptance Trials (SATs) for each AOR Ship.					
2	The integration of some systems such as the torpedo-self-defence (NIXIE), CIWS, Integrated Broadcast System (IBS), and remaining Information Communications Technology (ICT) Networks are required to take place in Australia after delivery of each AOR Ship from Spain.					
3	The forecast for System Integration and Acceptance of the AOR Ships are based on the revised dates taking into account the agreed CCP for delivery of the AOR Ships from Spain and the final fit out to be undertaken by Navantia in Australia. These latest forecast dates for SATs have been delayed to maximise full use of the extended production period now available to Navantia to complete the Mission System and Support System prior the transit of the AOR Ships from Spain to Australia in Quarter 1 2020 for Ship 1 and Quarter 3 2020 for Ship 2.					
4	The Support System Acceptance is a prerequisite for the Acceptance of both AOR Ships Mission Systems. This includes the successful completion of the Provisioning Preparedness Review (PPR), Long Lead Times Item (LLTI) Review, Facilities Readiness Review (FACRR), Training Readiness Review (TNGRR), Functional Configuration Audit (FCA), Physical Configuration Audit (PCA), crew Training and the Support System Effectiveness Demonstration.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Q2 2020	Jun 20	0	
Initial Operational Capability (IOC)	Q1 2021	Mar 21	0	
Final Materiel Release (FMR)	Q1 2021	Mar 21	0	
Final Operational Capability (FOC)	2022	Dec 22	0	1
Notes				
1	Current forecast achievement of FOC aligns with the latest SEA 1654 Phase 3 Integrated Project Management Planning documentation. This integrated planning has matured the project's understanding of FOC activities since the 2017/18 MPR, which previously forecast an early achievement of FOC.			
<div><p>Schedule Status at 30 June 2019</p><p>Schedule Plan at Government Approval</p><p>Schedule Plan at 30 June 2019</p><p>Jun-15 Jun-16 Jun-17 Jun-18 Jun-19 Jun-20 Jun-21 Jun-22 Jun-23</p><p>Approval IMR IOC FMR FOC</p></div>				
Note				
Forecast dates in Section 3 are excluded from the scope of the review.				

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	AOR Ship 1 delivered ready for training, work-up and Operational Test and Evaluation (OT&E). Those CASG Fundamental Inputs to Capability (FIC) elements including transition into sustainment as defined by the AOR Support System sufficient to support OT&E. IMR is currently scheduled to be achieved in June 2020.	Not yet achieved.
Initial Operational Capability (IOC)	IOC is defined as the ability for an AOR Ship to conduct replenishment at sea for existing Navy Major Fleet Units by demonstrating the capacity to operate two replenishment stations concurrently with helicopter replenishment. IOC is currently scheduled to be achieved in March 2021.	Not yet achieved.
Final Materiel Release (FMR)	AOR Ship 1 and AOR Ship 2 complete in accordance with the Government Approved scope. FMR is currently scheduled to be achieved in March 2021.	Not yet achieved.
Final Operational Capability (FOC)	FOC is defined as: a. both new AOR Ships being able to deploy with a Navy Task Group to an operational area, major exercise or activity and conduct fully-integrated Task Group replenishment operations including multi-ship replenishment of liquids, solids and explosive ordnance, including by embarked helicopter; and b. achievement of the full scope of the project including delivery and acceptance into operational service of the Mission System, Support System and training systems and required facilities. FOC is currently scheduled to be achieved in December 2022.	Not yet achieved.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the SEA 1654 Phase 3 Project may not meet Navy's forecast date for introduction into service for the first AOR Ship, <i>Supply</i> , as a result of the current delays and deficiencies associated with the LSA program and related ILS deliverables.	<p>The SEA 1654 Phase 3 Project has agreed corrective actions with Navantia for current omissions and defects of ILS deliverables to ensure fitness for purpose in time for IOR of Ship 1, <i>Supply</i>.</p> <p>Navy direction for the commercial crew delivery of the AOR Ships from Spain to Australia has reduced the risk to schedule for introduction into service due to the resultant shift in scheduled training and in service support activities.</p>
There is a chance that ineffective management of subcontractor performance may result in poor quality product, delays or requirements that do not meet fitness for purpose.	<p>Active management by the SEA 1654 Phase 3 Project, through close collaboration and interface working groups with Navantia, its subcontractors, CASG and Navy representatives, to ensure the system requirements are understood. Regular Interface working Group.</p> <p>CASG senior management engagement as required to ensure the performance of subcontractors to meet the fitness for purpose of the AOR Ships.</p> <p>Note this risk has been downgraded to medium due to a reduction in the assessed consequence rating from Major to Moderate since the 2017/18 MPR, whereby realisation of this risk would not impact the AOR Ships ability to be functionally fit for all desired missions or tasks.</p>
There is a chance that Materiel Seaworthiness Assurance planning does not align with the SEA1654 Phase 3 Project contracted acquisition scope.	<p>Continuing close liaison with RAN stakeholders in development of Materiel Seaworthiness Assurance Plan (MSAP) seeks to provide early identification of any misalignment to the SEA 1654 Phase 3 Project's acquisition strategy and contracted scope of Supplies to enable the development and implementation of appropriate mitigation activities.</p> <p>Note this risk has been downgraded to medium due to a reduction in the assessed consequence rating from Moderate to Minor since the 2017/18 MPR, based on the assessed schedule risk to achievement of Initial Operational Release (IOR).</p>
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
There is a chance that the SEA1654 Phase 3 Project may not meet Navy's forecast date for introduction into service for the first AOR Ship, <i>Supply</i> , as a result of delays associated with the production and test program in Ferrol Spain prior to the ship transit to Australia.	<p>Implementation of risk response strategies by Navantia including engagement of additional workforce and prioritisation of engineering publishing activities, as well as active management by the SEA 1654 Phase 3 Project.</p> <p>Navy direction for the commercial crew delivery of the AOR Ships from Spain to Australia has reduced the risk to schedule for introduction into service due to the resultant shift in the test program and ship acceptance date.</p>

5.2 Major Project Issues

Description	Remedial Action
Delays and deficiencies associated with a range of Integrated Logistic Support (ILS) Supplies. Incorporating the necessary Technical Data (TD) furnished from subcontracted vendors, as well as the long lead times for the development and delivery of Training (including Training Facilities, Equipment and Aids), are impacting the delivery of the acquisition Support System, contractor Transition/Phase-In activities, and achievement of the OD of the Support Contract.	<p>The SEA 1654 Phase 3 Project has agreed corrective actions with Navantia prior to submission of future ILS deliverables for Commonwealth review. This mitigation is ongoing and has seen a significant increase in the quality of ILS deliverables due to the implementation of a number of steps including improved quality processes and engagement of experienced local Australian industry by Navantia.</p> <p>Regular meetings, communication and proactive engagement on Training development and delivery between Navantia, the N2262 Project, COMTRAIN and CASG senior management.</p> <p>This issue currently has no realised impact on the forecast schedule for the Materiel Release and Operational Capability Milestones of the AOR Ships.</p>
The RAN has directed that the Authorised Maintenance Organisation (AMO) and Authorised Engineering Organisation (AEO) responsibilities must be retained within the Commonwealth. Therefore Navantia are unable to undertake the full AMO/AEO scope contracted under the support contract.	<p>The SEA 1654 Phase 3 Project is working with the RAN to understand the requirement for the AORSPO AMO/AEO accreditation. This will identify the implications to the allocated resources for the AORSPO as well as inform the development and negotiation of a CCP to the support contract to remove AMO/AEO responsibilities from the scope and contract price.</p> <p>Note this issue does not impact the SEA1654 Phase 3 acquisition project scope. The issue has been downgraded to medium due to a reduction in the assessed consequence rating as there are known workarounds to ensure the supportability of the AOR Ships by the AORSPO post IMR.</p>
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	7	7	7	8	7	7	50
	Explanation	<ul style="list-style-type: none">Technical Understanding – The project is currently assessed as behind the benchmark maturity score for this attribute due to the issue in relation to ILS Supplies, identified in Section 5.2 of this PDSS, noting the necessary logistics data and arrangements to support the capability continue to be developed by Navantia following the recent completion of the logistics support analysis leading up to PPR in June 2019.Technical Difficulty – The project is currently assessed as ahead of this benchmark maturity score following the successful completion of the Critical Design Review (CDR) in June 2017, and all subsequent internal Navantia Quality Gate reviews were completed in March 2018, to enable full production to be undertaken on the AOR Ships.							

Project Milestone	2017-18 MPR Status	2018-19 MPR Status
Enter DCP	13	13
Decide Viable Capability Options	16	16
1st Pass Approval	21	21
Industry Proposals / Offers	30	30
2nd Pass Approval	35	35
Contract Signature	42	42
Preliminary Design Review(s)	45	45
Detailed Design Review(s)	49	49
Complete Sys. Integ. & Test	55	55
Complete Acceptance Testing	57	57
Initial Material Release (IMR)	60	60
Final Material Release (FMR)	63	63
Final Contract Acceptance	65	65
MAA Closure	66	66
Acceptance Into Service	67	67
Project Completion	70	70

2017-18 MPR Status - - - - -

2018-19 MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 19

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	Mr Peter Croser
Project Director/Manager	Mr Chris Horner

Project Data Summary Sheet¹⁵¹

Project Number	AIR 5431 Phase 3
Project Name	Civil Military Air Traffic Management System (CMATS)
First Year Reported in the MPR	2016-17
Capability Type	Replacement
Acquisition Type	Developmental
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Nov 11
Government 2nd Pass Approval	Dec 14
Budget at 2 nd Pass Approval	\$731.4m
Total Approved Budget (Current)	\$975.8m
2018-19 Budget	\$115.4m
Project Stage	Contract Signature
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

AIR 5431 Phase 3 seeks to replace the current Fixed Base Defence Air Traffic Management and Control Systems at 12 Australian Defence Force (ADF) fixed base locations with a new harmonised system, referred to as the Civil Military Air Traffic Management System (CMATS). The CMATS component of AIR 5431 Phase 3 is being conducted as a joint acquisition program with Airservices Australia (Airservices). New and refurbished control towers and approach centres, and upgraded network infrastructure, is being delivered under separately funded works through the Estate and Infrastructure Group, the Chief Information Officer Group and Air Force.

1.2 Current Status

Project Status

AIR5431 Phase 3 was removed from the Project of Concern list on May 2018 **but remains a Project of Interest.**

Cost Performance

In-year

In-year expenditure is **\$109.3m** against a budget of **\$115.4m**. The underspend is due to **delays in achieving contract award for the Australian Defence Air Traffic System (ADATS) life of type extension procurement (Autotrac II); delay in signature of CCP004 to the Airservices OSA; less than anticipated spend on contractor workforce and project management expenses; and amendments to the Air-Ground-Air engineering services contract.**

Project Financial Assurance Statement

As at **30 June 2019**, Project AIR 5431 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Thales achieved CMATS System Definition Review during November 2018. SDR was achieved through the application of a maturity-based approach to system requirements analysis. This approach carries forward technical debt from one design milestone to another, as requirements are only matured to a satisfactory level required for each milestone. The technical debt carried forward from SDR has yet to be comprehensively analysed and scheduled to ensure the work required to address the technical debt does not lead to delays to the Preliminary Design Review milestone, planned to occur during quarter 4 2019.

A revised Materiel Acquisition Agreement (MAA) was approved on 14 January 2019, incorporating updated milestone dates and scope definition for AIR5431 Phase 3 Initial Operational Capability (IOC) planned November 2022 and Final Operational Capability (FOC) planned October 2025.

151 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

As foreshadowed at the time of contract signature, the CMATS contract required a number Contract Change Proposals (CCPs) to affect the agreed Defence scope changes and address engineering changes, including Airservices options, known at the time of contract signature. Airservices have executed Three CCPs since contract signature, with a further two subject to negotiation with Thales. Execution of the CCPs is critical to stabilisation of the functional and schedule baselines.

The ability for Thales to progress the CCPs as well as performing the activities under the contract have been strained due to lower than desired staffing rates. This has resulted in the CCPs being executed serially with the consequent delays and has meant that changes are now being incorporated into the program sub optimally.

CCP3, which was to change the Capability Base Line (CBL) from the Joint Functional Performance Specification (JFPS) to the Thales System Specification (SS) was executed June 2019 and provided no schedule impact.

CCP4 was a Defence initiated CCP to correct the quantities of some items, and make changes to the interfaces for the radios. Delays in executing CCP4 has resulted in a slippage of 5.5 months to IOC due to having to insert the changes after the subcontractor had completed the original engineering. CCP4 is expected to be signed by Airservices and Thales in July 2019.

CCP5 incorporates the remaining Defence collaboration initiatives, the major one being the relocation of Townsville and Darwin Approaches into Brisbane centre. This CCP is likely to have a further impact on the schedule with the possibility of some of the Defence sites moving to the right. Thales is expected to provide a response to the CCP in SEP 2019 with a period of negotiation after that.

Defence's Independent Assurance Review conducted Quarter 1 2019, although not recommending the project go back on the project of concern list, did express concern over the Thales schedule and the optimistic dates, noting an underperformance in the schedule to date.

The Schedule Compliance and Risk Assessment Methodology (SCRAM), conducted in March 2019, determined the Thales schedule to have a significant number of logic errors and poor implementation of Monte Carlo three point estimates. The SCRAM team was not able to replicate the Thales schedule from the known activities and considered the Thales Schedule lacked credibility. Remediation activities are underway with an Integrated Baseline Review(IBR) expected Quarter 4 2019.

During this reporting period, Thales found deficiencies in the way they flowed down engineering Activities to subcontractors and initiated a Global Engineering Management Plan (GEMP) to address those shortcomings. Due to staffing, this has also had an effect on the schedule and about half the delay to IOC attributed to CCP4 was due to changes made as a result of the GEMP.

Because of the way the CCPs are looked at in isolation, and remediation of the Thales schedule based on the SCRAM recommendations, it was agreed by CASG and Air Force, to maintain the MAA as is until CCP5 and the Integrated Baseline review is completed in Quarter 4 2019.

Materiel Capability Delivery Performance

CMATS has not delivered any materiel capability to date. As a result of affordability constraints, Defence has **accommodated** a number of CMATS scope changes to deliver an equivalent capability more cost effectively. The most significant changes are:

- Airservices supplying alternative, non-CMATS Tower Air Traffic Management systems at four locations – Edinburgh, Richmond, Gingin and Oakey;
- Relocating Darwin and Townsville Approach from Darwin and Townsville to the Airservices Approach Centre in Brisbane; and
- Relocating Oakey approach from Oakey to Amberley.

CCP2, to remove Defence scope, including the tower systems for Edinburgh, Richmond, Gingin and Darwin and removal of the approach systems from Darwin, Townsville and Oakey, was agreed to by Airservices in December 2018. CCP5, to update the CMATS contract to incorporate the co-location of Darwin and Townsville approach services at the Airservices Brisbane Air Traffic Service Centre and include Oakey approach at Amberley, is planned for execution in Quarter 4 2019.

Materiel Capability is also being delivered by BAE Systems Australia for the Air Ground Air (AGA) transition solution, Raytheon for the ADATS life-of-type extension and Defence site preparation and support. Delivery of materiel capability associated with these procurements are delivered outside the On-Supply Agreement.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

AIR5431 Phase 3 will acquire a fixed Air Traffic Management (ATM) system to replace the existing Australian Defence Air Traffic System (ADATS) capability (Tower and Approach Centres) at 12 ADF fixed base locations, and a simulator system for the School of Air Traffic Control (SATC). Defence is procuring for its replacement ATM capability under AIR 5431 Phase 3, a common Civil Military Air Traffic management and control System (CMATS) through a joint acquisition and support program with Airservices, also referred to as OneSKY Australia (OneSKY).

Beyond the joint CMATS procurement, Defence is also acquiring elements necessary for successful integration of the CMATS into the broader Defence ATM system.

The strategic objectives of Airservices and Defence for the CMATS program include:

- to harmonise Australia's civil and military air traffic management systems so as to deliver improvements in safety, efficiency, flexibility, economy and business continuity and accords with the Australian Government's policy to maximise the efficiency of Australian airspace through increased cooperation and collaboration between Airservices and Defence; and

Project Data Summary Sheets

Auditor-General Report No.19 2019–20
2018–19 Major Projects Report

- to successfully acquire, transition, support and operate the CMATS across Australia's national airspace and every major civil and military aerodrome in Australia within agreed schedule, cost and performance constraints.

Consistent with the Government's 2013 Policy for Aviation, Defence will work jointly with Airservices as the lead agency for the CMATS, to establish a harmonised national air traffic system.

AIR 5431 Phase 3 achieved First Pass approval in November 2011 as part of a combined project with AIR 5431 Phase 2, which included combined Defence Capability Plan (DCP) capital and Net Personnel and Operating Costs (NPOC) provisions. The Project Initial Review Board (PIRB) held in November 2013, subsequently directed AIR 5431 Phase 2 and Phase 3 be presented to government as separate projects, which was noted by the Minister for Defence in March 2014. The revised DCP 2014 included AIR 5431 Phase 2 and Phase 3 as separate projects. A PIRB held April 2014 agreed to seek Second Pass for AIR 5431 Phase 3 in December 2014, vice March 2015, to better align with Airservices' project approval timeline and to mitigate the identified Defence risks with the delivery of associated facilities and communications projects.

AIR 5431 Phase 3 achieved Second Pass approval in December 2014 on the basis of tender agnostic capability, schedule and cost data provisioned by Airservices in the form of a Not-to-Exceed (NTE) price for the Defence share of the common and Defence unique elements of the CMATS. **After a period of complex negotiations**, AIR5431 Phase 3 formally returned to Government in February 2018 and was granted a RCI of \$243.0m (including contingency) to cover additional CMATS costs, a transition radio solution (AMACCS), Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation. Approval of the RCI for AIR 5431 Phase 3 included a requirement that Defence provide 6 monthly updates to Government.

The CMATS offer and negotiation process was protracted, primarily due to the difficulties experienced by Thales in producing an acceptable offer that represented value for money for Defence and Airservices, an underestimation of the time required to settle the requirements, total cost and cost attribution of a harmonised capability and alignment of customer approval processes through two separate governance structures. Notwithstanding, Airservices signed both acquisition and support contracts with Thales in February 2018.

The joint civil-military acquisition originally intended to procure a **principally** commercial off-the-shelf (or military off-the-shelf) system; however, the only compliant and viable solutions tendered all required significant development and integration effort to deliver the specified capability. Furthermore, there **were** no similar civil-military Air Traffic Management systems fielded elsewhere in the world. **Due to this**, Thales priced a large **portion** of risk into the fixed price offer to cover uncertainty in software development and site implementation. **To** better manage this risk, **Airservices and Thales** agreed to move from a Fixed Price to a Target Price Incentive contract, **in order to incentivise** Thales to deliver the capability at the lowest price possible. **Defence is not subject to the risks or benefits associated with the Target Price Incentive arrangement.** The Target Price Incentive model, along with improved relational governance arrangements, provide Defence and Airservices stakeholders confidence that challenges presented during contract execution can be overcome collaboratively through transparency of technical, schedule and cost risk between the parties.

Airservices' management of the contracts with Thales and on-supply to Defence will be governed by an On-Supply Agreement (OSA) **executed in** February 2018. In addition to defining the on-supply to Defence of the Defence supplies and services delivered to Airservices by Thales, the OSA is underpinned by a principles-based governance framework, aligned to that established between Airservices and Thales for the CMATS acquisition and support contracts.

The CMATS program organisation is structured to ensure Defence provides an equitable contribution towards the delivery of the CMATS. This is achieved through the implementation of a Joint Program Team consisting of both Airservices and Defence subject matter experts, a CMATS Review Group (CRG), consisting of Defence and Airservices senior representatives, and higher level forums above the CRG consisting of the Program Sponsors including CEO Airservices, Chief of Air Force and Deputy Secretary CASG. Whilst the parties have opted for a lead agency construct, the organisation is underpinned by embedded staff and decision-makers to assure that both parties' interests and requirements are addressed in terms of management of the project. However, the dual sponsorship, and the governance and stakeholder management that arises, does lead to challenges where there is a variation between the timelines of approval or organisational direction.

On 18 August 2017 the Ministers for Defence and Defence Industry announced this project as a Project of Concern. AIR 5431 Phase 3 was subsequently removed from the Project of Concern list on 8 May 2018 with the criteria for removal met at contract award. In recognition that AIR 5431 Phase 3 will remain complex and require significant governance to ensure capability, cost and schedule risks are adequately managed; AIR 5431 Phase 3 will continue to be managed as a Project of Interest.

Uniqueness

CMATS represents the first time that a Defence project is contributing to a major national infrastructure project. The December 2009 National Aviation White Paper identified the need to implement a harmonised national civil and military air traffic management system. The activities identified in the White Paper for the implementation of a comprehensive, collaborative approach to nation-wide air traffic management included the procurement of a single solution air traffic management (ATM) platform between civil and military agencies.

At the time of decision to enter into a joint project arrangement there was no history of a similar governance structure in operation that aligned with the scope of this project. As a consequence, Airservices and Defence have established and continued to refine the CMATS joint delivery structure without the benefit of adapting from proven existing models.

Major Risks and Issues

While both organisations have risk policy and practices in place, Airservices and Defence manage risk separately in accordance with their respective risk management frameworks. The CMATS joint program risk register is maintained and managed by Airservices on behalf of the CMATS program and considers risk that may collectively impact both Defence and Airservices. AIR 5431 Phase 3 operates a separate risk register for Defence specific/unique risks and issues. All major risks that have an impact on AIR 5431 Phase 3 have been disclosed, regardless of where they are managed.

During the reporting period, the risks identified for AIR 5431 Phase 3 and the CMATS joint program have shifted as a result of progress through the system design milestones and a maturing of the agreed Defence scope changes. While five risks have been retired or downgraded in severity, a number of existing risks remain, with new sources of risk emerging as identified in the following summary:

<ul style="list-style-type: none"> - Consolidation of approach services into Amberley approach centre and removal of four Defence towers from CMATS scope in absence of detailed definition and planning. - Delays to the procurement of the Air Ground Air (AMACCS) transition solution may result in insufficient AGA assets to enable CMATS and Four Alternate Tower Solution (FATS) transition within the agreed contract schedule. - Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues - Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources for the FATS. - The functional availability of external Defence delivered systems on CMATS implementation within the Defence ATM environment. - Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW. - Inadequate levels of appropriately trained Verification and Validation (V&V) personnel to support V&V activities in 2019. - Availability of the Joint Software Support Facility in time for Rz system of systems readiness demonstration for Rz transition. - Delayed delivery of the Support System Specification (SSS). - Insufficient Defence and Airservices project resources to oversight system design work for PDR and Critical Design Review (CDR). - CMATS system maturity and residual SDR technical debt. - Alignment of the maturity-based engineering approach with the software design model and design assurance activities. - Composition and flexibility of Thales' resource profile. - Onerous, long-term and ongoing travel obligations associated with site acceptance integration and verification activities. - Impact of delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2 - If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose - Transition of the Project's support services arrangement to the Major Service Provider. 			
<p>The key issues impacting Airservices and Defence have remained relatively stable and continue to be actively managed, these include:</p> <ul style="list-style-type: none"> - Insufficient dependent AMACCS system assets during CMATS introduction into service will impact current operations. A procurement related risk associated with this issue that has the potential to impact transition activities for CMATS and FATS. - The joint program has yet finalise remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities. 			
<p>Other Current Related Projects/Phases</p> <p>AIR5431 Phase 1 – Deployable Air Traffic Control (ATC) Capability will introduce Deployable Air Traffic Management (ATM) command and control systems into the ADF inventory.</p> <p>AIR5431 Phase 2 – Fixed Base ATC Replacement Capability will replace the existing fixed base defence ATC surveillance radars.</p>			
<p>Note</p> <p>Major risks and issues are excluded from the scope of the review.</p>			

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Dec 14	Original Approved (Second Pass Approval)	731.4	1
Dec 17	Real Variation – Budgetary Adjustment	(6.8)	2
Feb 18	Real Variation – Real Cost Increase	247.5	3
	Exchange Variation	3.7	
Jun 19	Total Budget	975.8	4
Project Expenditure			
Prior to Jul 18	Contract Expenditure - Airservices Australia	(127.8)	
	Contract Expenditure - Jacobs Australia – Integrated Support Contract	(21.5)	
	Other Contract Payments/Internal Expenses	(5.8)	5
		(155.1)	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

FY to Jun 19	Contract Expenditure - Airservices Australia	(96.0)	
	Contract Expenditure - Jacobs Australia – Integrated Support Contract	(5.6)	
	Contract Expenditure – Jacobs Australia – Integrated Work Package	(2.7)	
	Other Contract Payments/Internal Expenses	(5.0)	5
Jun 19	Total Expenditure	(109.3)	
		(264.4)	
Jun 19	Remaining Budget	711.4	
Notes			
1	In addition to these direct project costs, Defence received approximately \$175m for Major Capital Facility costs and enabling ICT costs.		
2	This variation is due to administrative decisions to temporarily harvest funds from the project. These funds were returned to the project as part of the RCI approved in February 2018. These funds were part of the original Second Pass approval budget.		
3	A RCI of \$249.7m was approved by Government in February 2018 to cover additional costs related to the acquisition. This includes \$2.2m for Air Force to relocate the current Tindal Australian Military Airspace Control Communications System (AMACCS) air traffic control radio equipment site, leaving \$247.5m for CASG related costs (additional CMATS costs, transition radio solution (AMACCS), Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation). This figure includes the \$6.8m returned to the project to correct the Budgetary Adjustment which occurred in December 2017. Given this, the total approved RCI above Second Pass approval is \$242.9m including the \$2.2m for Air Force.		
4	The total budget includes planned expenditure for the Air Ground Air Transition Solution, ADATS life-of-type extension and Defence site preparation and support. These procurements will be incorporated into Section 2.3 as each agreement is reached.		
5	Other contract payments/internal expenses: Operating expenditure, contractors, minor contract expenditure and other capital expenditure not attributable to the listed contracts.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
116.4	125.0	115.4	PBS - PAES : The variation is due to the estimated cost of the Procurement of the Autotrac II Air Traffic Control System which is the preferred option to address ADATS Life Of Type Extension Issues. PAES- Final Plan: The variation is due to re-phasing the Air-Ground-Air transition trial hardware and installation procurement and delays in finalising the Autotrac II procurement.
Variance \$m	8.6	(9.6)	Total Variance (\$m): (1.0)
Variance %	7.4	(7.7)	Total Variance (%): (0.9)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(1.0)	Australian Industry	The underspend is due to delays in achieving contract award for the ADATS life of type extension (Autotrac II); delay in signature of CCP004 to the Airservices On Supply Agreement; less than anticipated spend on contractor workforce and project management expenses; and amendments to the Air-Ground-Air engineering services contract.
			Foreign Industry	
			Early Processes	
		(5.1)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
115.4	109.3	(6.1)	Total Variance	
		(5.3)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Jacobs Australia – Integrated Support Contract	Dec 14	107.7	27.0	Variable	Modified ASDEFCON	1,2

Airservices Australia	Feb 18	521.0	521.0	Fixed	On Supply Agreement	1,3	
Jacobs Australia – Integrated Work Package	Dec 18	47.0	47.0	Variable	Integrated Work Package	1,4	
Notes							
1	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).						
2	This contract is closed following the transition to a Branch wide Integrated Work Package (IWP) contract.						
3	CMATS will be procured via the Contracts (Acquisition) and (Support) between Airservices and Thales. Airservices manages both Contracts with Thales on behalf of Defence through the OSA. The agreed acquisition price of AUD \$521m was based on the agreed Airservices and Thales EUR exchange rate of 0.6722. This is not consistent with the Department of Finance exchange rates. Due to exchange rate variance, the addition of Defence approved scope and the inclusion of Contract (Support), the price of the OSA will increase over time.						
4	Contract value is the estimated Project share of the Branch IWP contract and is based on the estimate of project expenditure for 8 x 6 monthly work packages to the end of December 2022.						
Contractor	Quantities as at		Scope			Notes	
	Signature	30 Jun 19					
Jacobs Australia	N/A	N/A	Service based integrated support.				
Airservices Australia	N/A	N/A	Through the OSA, delivery of CMATS control tower and approach centres at Amberley (including Oakey approach), East Sale, Williamtown, Tindal and Nowra, consolidated Darwin and Townsville approach services at Airservices Brisbane approach centre, CMATS control towers at Darwin, Townsville and Pearce and a simulator system at SATC.				
Jacobs Australia	N/A	N/A	Serviced based integrated work package.				
Major equipment received and quantities to 30 Jun 19							
Nil.							
Notes							
1	This was a result of revised schedule Control tower systems for Oakey, Gingin, Richmond and Edinburgh (also referred to as the Four Alternate Tower Solution (FATS)) will be delivered within the agreed fixed-price cap of \$521.0m. The obligation for Airservices to provide FATS was established through the OSA signed 22 February 2018. The FATS Statement of Work and Functional Performance Specification are the subject of negotiations between Defence and Airservices.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	CMATS System Requirements Analysis	Aug 17	N/A	Jan 18	5	1
Preliminary Design Rz	CMATS	Oct 19	N/A	Oct 19	0	2,3,4
Critical Design Rz	CMATS	Apr 20	N/A	Apr 20	0	2,3,4
Notes						
1	Airservices entered into contact with Thales for the acquisition of the CMATS in February 2018; System Requirements Analysis was achieved later than expected due to an underestimation of the effort required to develop the Functional Baseline.					
2	Dates for Preliminary Design and Critical Design are derived from the contract Delivery Schedule. The forecast dates are subject to revalidation during the Integrated Baseline Review to reflect implementation of the CMATS scope changes.					
3	Rz is the initial Defence system build for the first five Defences sites and represents the minimum software functionality for safe air traffic services at Defence sites. R1 is a software release that represents the minimum functionality required for Airservices to operate Brisbane and Melbourne Air Traffic Centres. R2 is a software release that represents the full CMATS functionality.					
4	Thales intends to conduct separate Preliminary Design Review and Critical Design Review activities for each software release for Rz, R1 and R2. The table at 3.1 will continue to be updated to reflect the design stages as the project progresses through each software release.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Rz System Integration	CMATS	N/A	TBA	TBA	0	1
System Acceptance	SATC – CMATS	Jan 22	Feb 22	Feb 22	1	4
	RAAF Base East Sale – CMATS	May 22	N/A	May 22	0	
	RAAF Base Amberley – CMATS	Jun 22	N/A	Jun 22	0	
	RAAF Base Edinburgh – FATS	Jun 22	TBA	TBA	0	2
	RAAF Base Pearce – CMATS	Oct 22	Nov 22	Nov 22	1	4
	RAAF Base Gingin – FATS	Oct 22	TBA	TBA	0	2

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

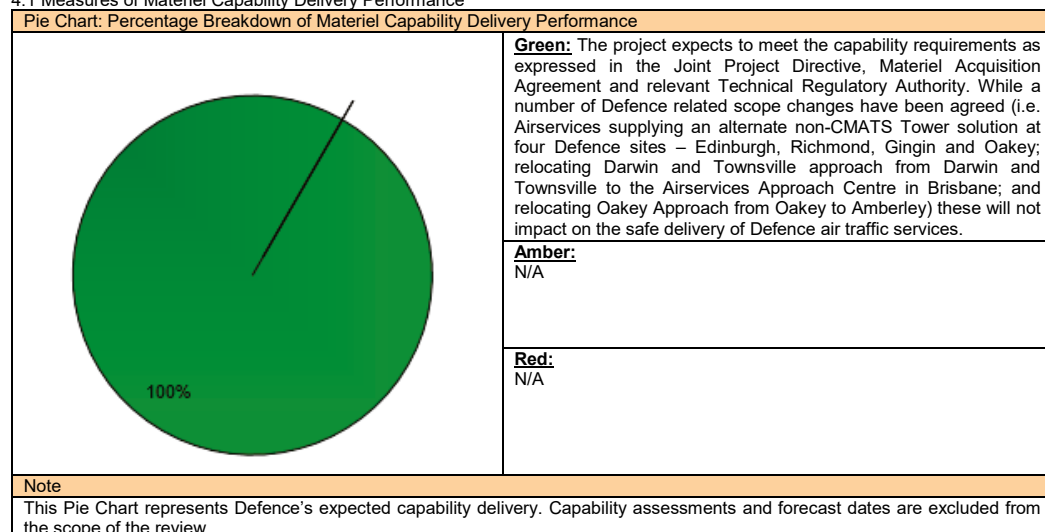
	RAAF Base Tindal – CMATS	Nov 22	N/A	Nov 22	0	
	Army Aviation Centre Oakey – FATS	Nov 22	TBA	TBA	0	2
	RAAF Base Townsville – CMATS	Nov 23	Nov 24	Nov 24	12	4
	Naval Air Station Nowra – CMATS	Mar 24	Nov 24	Nov 24	8	4
	RAAF Base Williamtown – CMATS	Apr 24	Oct 24	Oct 24	6	4
	RAAF Base Darwin – CMATS	Apr 24	Oct 24	Oct 24	6	4
	RAAF Base Richmond – FATS	May 24	TBA	TBA	0	2
Rz System Acceptance	CMATS	Aug 22	N/A	Aug 22	0	3
R1 System Acceptance	CMATS	Jul 24	N/A	Jul 24	0	
R2 System Acceptance	CMATS	Feb 25	N/A	Feb 25	0	
Final Acceptance	CMATS	Aug 25	N/A	Aug 25	0	
Notes						
1	These dates are expected to be updated once the Integrated Baseline Review is complete.					
2	The Current Planned and Forecast dates are expected to be updated once the FATS agreement is in place.					
3	Rz System Acceptance includes East Sale Tower and Approach (including the School of Air Traffic Control (SATC)), Amberley Tower and Approach including consolidated Oakey Approach and Edinburgh FATS Tower. The selected sites constitute the AIR 5431 Phase 3 IOC, as the combination of these sites demonstrates all possible system variants for Defence's portion of the CMATS system.					
4	The delay is due to the execution of Contract Change Proposal 2 in December 2018 which changed to schedule logic for the software builds post Release 1.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

3.3 Progress Toward materiel Release and Operational Capability milestones				
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Aug 22	Aug 22	0	1
Initial Operational Capability (IOC)	Jun 20	Nov 22	29	2
Final Materiel Release (FMR)	Aug 25	Aug 25	0	1
Final Operational Capability (FOC)	Jun 23	Oct 25	28	2
Notes				
1	The IMR and FMR milestones reflect the revised MAA signed January 2019.			
2	The initial delay to IOC and FOC is due to a protracted period of complex negotiations between the customer and Thales.			
<div><p style="text-align: center;">Schedule Status at 30 June 2019</p><p>Legend:</p><ul style="list-style-type: none">ApprovalIMRIOCFMRFOC</div>				
Notes				
Forecast dates in Section 3 are excluded from the scope of the review.				

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Amberley, East Sale (including SATC) and Edinburgh transitioned from ADATS. Forecast achievement date August 2022 .	Not yet achieved
Initial Operational Capability (IOC)	Amberley, East Sale, SATC and Edinburgh have been accepted into Operational service. Forecast achievement date November 2022.	Not yet achieved
Final Materiel Release (FMR)	Delivery of all CMATS material system elements configured to the final system build. Forecast achievement date August 2025 .	Not yet achieved
Final Operational Capability (FOC)	All Defence Sites have been accepted into operational service. Forecast achievement date October 2025.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Poor provision of Customer Furnished Materials, Supplies and Services including non-compliance of, deficiencies in, or unavailability of CIOG and E&IG infrastructure and networks, will result in the customer impacting the contracted schedule.	This risk has been reassessed as Medium due to effective and regular engagement with service providers and suppliers, building confidence through working groups and configuration change boards.
Delays to the procurement of the Air Ground Air (AMACCS) transition solution may result in insufficient AGA assets to enable CMATS and FATS transition within the agreed contract schedule.	Progress urgent acquisition of the AGA transition solution design and associated equipment, using the Survey and Quote provisions of the AMACCS support contract with BAE. Strategies such as progressive delivery and concurrent build, installation and testing are being considered to meet site schedule constraints.
The current approach to aggregate CMATS data within the Defence network may not satisfy the requirements for the Civil Aviation Safety Authority (CASA) accreditation.	This risk has been retired following confirmation through that the Defence network architecture is capable of meeting the anticipated necessary regulatory/safety requirements.
Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues.	Implement recommendations articulated in the plan developed by the INFOSEC Registered Assessors Program (IRAP) assessor, outcomes from this activity will be input into the joint security working group to develop the CMATS accreditation plan.
A lack of coordination between Airservices and Defence during development and implementation of the Defence/Airservices network gateway may lead to an impact on the delivery and performance of dependent Customer Furnished Services (CFS).	This risk has been downgraded to Medium due to more effective and coordinated engagement between Airservices and Defence.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Agreement to consolidate Darwin and Townsville approach services into the Airservices Brisbane approach centre, Oakey approach services into Amberley and removal of four Defence towers (Richmond, Edinburgh, Gingin and Oakey) from CMATS scope in absence of detailed definition and planning, may impact the achievement of Preliminary Design Review (PDR) and create dependency complexity.	The OSA established the high-level agreement for the CMATS scope changes. In line with this agreement, progress remaining CCPs to remove and/or change the CMATS requirements as well as identify and agree requirements outside of CMATS to reflect the agreed scope changes.
Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources, may impact the delivery of the Four Alternate Tower Solution (FATS) at Richmond, Edinburgh, Gingin and Oakey.	Defence have engaged additional resources to provide close management of the FATS agreement development.
Achievement of SDR exit may be impacted by the Contractor's inadequate resource profile, a failure of the Parties appropriately specifying system interface requirements and convergence of the safety system of system consolidation work required for SDR maturity and the Functional Baseline.	This risk has been retired following achievement of SDR exit in November 2018.
A failure of the Prime System Integrator (PSI) to align parallel system engineering activities, such as identification and management of interfaces, dependencies and system of systems deliverables, may result in omissions or rework in the development and delivery a system of systems solution.	This risk has been retired following achievement of SDR exit in November 2018.
Implementation of CMATS within the Defence ATM environment may be impacted by the functional availability of external Defence delivered systems, potentially limiting the ability of the Defence portion of the ATM solution to meet regulatory and licencing requirements.	Air Force are engaged through the Stakeholder Working Group (SWG) to analyse each function end-to-end to establish those systems that don't meet the availability requirements and identify possible mitigation options for shortfalls.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW, this may lead to schedule delay and cost transfer from Thales to the customer.	Defence are closely monitoring the CMATS design process to raise areas of concern early, as well as ensure the Systems Engineering Management Plan includes customer constraints.
An inadequate level of appropriately trained Verification and Validation (V&V) personnel to support Voice Communication Services and Airfield Management Services V&V activities in 2019, may lead to system acceptance of test results non-compliant with JFPS requirements, resulting in delays and rework.	Action is being taken to source additional resources through the Major Service Provider (Jacobs) and suitable courses identified to ensure personnel are trained in the conduct of V&V activities.
The Joint Software Support Facility may not be available or operationally effective in time for demonstrating R2 system of systems readiness for R2 transition, this may cause delays to commissioning at R2 sites.	This risk is being addressed via a provisional acceptance process through each functional baseline validation and regression testing. Identification of alternate acceptance strategies for Defence sites may be required.
Delivery of the Support System Specification (SSS) has been delayed; this is a key product for the determining the Allocated Baseline (ABL) for PDR and may result in schedule delays to the PDR milestone.	The Thales Global Engineering Management Plan will reinforce baseline management and configuration management and verify and drive alignment through the Technical Review Meetings (TRM).
A lack of Defence and Airservices project resources may impact oversight of system design work as it relates to PDR and Critical Design Review (CDR) milestones, and progress on the Human Machine Interface and Automation (HMI&A) de-risking workshops, leading to fitness for purpose issues and potential schedule delays.	The organisational structure and resource allocation to work packages is designed to enhance flexibility within the CMATS program and tailored to focus on strategic elements against maturity goals.
CMATS system maturity and residual SDR technical debt may impact the progression of the ABL through the PDR, CDR and Test Readiness Review (TRR) milestones, resulting in schedule impacts to R2 sites, with the potential for flow on effects to R1 and R2 implementation.	Early PDR planning at SDR exit identified a need for the customer to focus on oversight and assurance of the system maturity profiles, areas of technical debt and reinforce Thales' role as the Prime System Integrator.
The maturity-based engineering approach adopted for CMATS requirements analysis may not align with the software design model and design assurance activities prescribed by the relevant industry standard.	A plan to satisfy the software design assurance objectives has been jointly developed between the Customer and Thales.
Thales' resource profile lacks flexibility and the necessary composition of skills to concurrently deliver the requirements for PDR and CDR milestones, cater for ECPs and CCPs and any emergent scope should it arise. This risk is compounded by staff turnover, leading to productivity inefficiencies and potential schedule delay.	Ongoing monitoring of Thales' progress to address resourcing composition is occurring through the Program Review Board. Independently, Thales are implementing the Thales Global Engineering Maturity Plan to consolidate transverse engineering activity and enhance consistency of artefacts.

Site acceptance and the quality of site integration and verification activities, may be impacted by a requirement to support onerous, long-term and ongoing travel obligations.	Strategies that focus on the recruitment of suitably skilled resources within proximity of each sites is being undertaken.
Delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2 may impact development and transition into service of CMATS.	Alternate sources of radar data required to enable CMATS design, test and evaluation and verification and validation activities are being investigated. Options for live data sources to support operations are also being considered.
If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose	Defence teams will undertake conformance checks between key documents, and specifically assess the service delivered over interfaces as part of the test and evaluation program prior to final delivery
The increased cost of the Major Service Provider contract, compared to the original Integrated Support Contract, may exceed the available budget, resulting in less support being provided or an increase in costs, leading to project delays or a requirement to seek additional funds	The Project is monitoring the cost of resources within affordability constraints. Strategies to treat funding shortfalls might include a reduction in the joint support Defence provide to the Joint Project Team above the OSA requirement, a reduction in the oversight of supplier deliverables to free up resource availability and an increase to APS and ADF placements.

5.2 Major Project Issues

Description	Remedial Action
AIR 5431 Phase 3 is unable to introduce CMATS into service without impacting current operations due to insufficient dependent AMACCS system assets.	While procurement activity for the Air Ground Air (AGA) transition solution has commenced there is uncertainty on the availability of new generation AMACCS assets and viable fall-back options for ongoing delays in execution of the AGA transition contract with BAE.
The joint program has yet finalise remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities.	Additional configuration and data management resources have been brought on to support design and process reform, however progress towards upgrading the existing configuration management tool is still ongoing.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

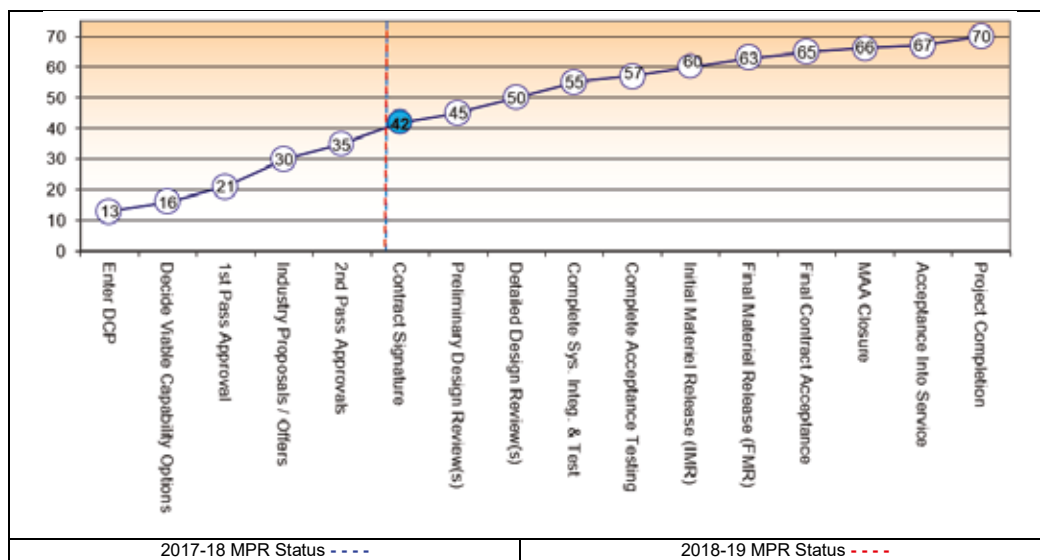
Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	6	6	6	6	42
Contract Signature	Project Status	5	6	6	6	6	6	6	41
	Explanation	<ul style="list-style-type: none"> Schedule – The contracted schedule will require significant modification to reflect the agreed Defence CMATS de-scoping options. Schedule confidence should increase after Integrated Baseline Review. 							

Project Data Summary Sheets

Auditor-General Report No.19 2019–20
2018–19 Major Projects Report



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Set up the Governance structure earlier in the process – the decision regarding lead agency and harmonisation was determined at a strategic level without detailed analysis of the nuances between the two organisations. Although there is now a robust governance structure in place, there are still areas of disunity that are now difficult to change.	Governance
Better communication with Stakeholders - although the establishment of joint project was at the direction of a harmonisation initiative of the Government, the joint project has been slow to re-engage with stakeholders, up to and including Government, to seek refined direction based on prevailing and emerging risks and issues.	Contract management/Governance
A lack of resources at the initiation stage of the project, and during the preparation of the Request For Tender, can create a significant technical and stakeholder management debt that will affect the ability to agree on requirements, forecast a realistic schedule and determine future workforce requirements.	Resourcing
Whilst waiting to initiate dependant projects (i.e. facilities) 'just in time' increases the risk of delays to the delivery of prime mission system, starting dependant projects too early can result in them being delivered so far in advance of the prime mission system, that the outputs of the dependant project no longer satisfy the 'evolved' mission system intent.	Schedule Management
As a result of long-running schedule maturity issues, it is recommended that long-term planning beyond the nearest major milestone is essential to reducing program risk and sub-optimal short-term planning, and furthermore schedule logic applied to the Contract Master Schedule (CMS) must reflect the logic identified in the contract to ensure activities are sequenced according to precedence and priority.	Schedule Management
Aggressive timeframes to meet schedule milestones often results in compressed timeframes to engage stakeholders (operational, engineering/technical and strategic), leading to compromises to proper requirements management. Consequently, a schedule needs to be developed to include opportunities for specified periods of stakeholder consultation and alignment during the capability delivery life-cycle.	Schedule Management/Governance

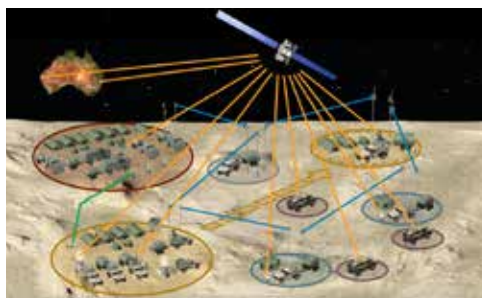
Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 2019

Position	Name
Division Head	Mr Ivan Zlabur
Branch Head	AIRCDRE Phil Tammen
Project Director	GPCAPT Darren Spee
Project Manager	WGCDR Terry Atkinson

Project Data Summary Sheet¹⁵²

Project Number	LAND 2072 Phase 2B ¹⁵³
Project Name	BATTLESPACE COMMUNICATIONS SYSTEMS
First Year Reported in the MPR	2017-18
Capability Type	Replacement
Acquisition Type	Developmental
Capability Manager	Chief of Army
Government 1st Pass Approval	May 2011
Government 2nd Pass Approval	Apr 2015
Budget at 2 nd Pass Approval	\$915.7m
Total Approved Budget (Current)	\$942.6m
2018-19 Budget	\$150.7m
Project Stage	Initial Materiel Release
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND (formally known as JP) 2072 Phase 2B will provide the Battlespace Communications System Land (BCS-L) deployed wide-band backbone by replacing and enhancing the existing Battlefield Telecommunications Network (BTN) capability within Army and Air Force. LAND 2072 Phase 2B shall deliver the Integrated Battlefield Telecommunications Network (I-BTN) in **three** capability Releases. Release 1 shall provide transit case nodes, and Release 2 **and Release 3** shall provide vehicle mounted nodes and additional capabilities. The end state will be an I-BTN that provides greater capacity, more effective switching, wireless and wired network infrastructure supporting secure voice, data and video services.

LAND 2072 Phase 2B is required to provide end to end connectivity from the enhanced Deployable Local Area Network (eDLAN), through and within the I-BTN, and to the Defence Terrestrial Communications Network (provided by JP2047 Phase 3).

Under separate funding arrangements Joint Command, Control, Communications, Computers & Intelligence Systems Program Office (JC4ISPO) is responsible for design, verification, procurement and delivery of the DLAN. LAND 2072 Phase 2B **has** provided supplementary funding to JC4ISPO for the procurement of **259** DLAN systems **for integration with I-BTN**.

LAND 2072 Phase 2B will also acquire a Terrestrial Range Extension System (TRES) to extend the range of tactical radios procured under earlier phases of Joint Project 2072.

1.2 Current Status

Cost Performance

In-year

The Project has spent **\$157.8m year to date against a budget of \$150.7m with the overspend \$7.1m due to early completion of User Training for Material Release 3 and higher than anticipated price variation claims offset by decreases to planned spend on Enhanced Deployable Local Area Network and delays in equipment acquisition for Headquarters on the Move.**

Project Financial Assurance Statement

As at **30 June 2019**, LAND 2072 Phase 2B has reviewed the approved scope and budget for those elements required to be delivered by the Project. Having reviewed the current financial and contractual obligations of the Project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, that there is sufficient budget including contingency remaining for the Project to complete against the agreed scope.

Contingency Statement

The Project has applied contingency in the financial year **for the treatment of the programmatic risk related to eDLAN**

152 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

¹⁵³ LAND 2072 Phase 2B was originally approved as a JOINT PROJECT (JP) within the broader JP 2072 program, but since second pass it has been managed and reported as a LAND project. The remainder of this report will refer to LAND 2072 Phase 2B.

Integration that caused project delays.

Schedule Performance

Boeing Defence Australia (Boeing) is required to integrate a number of capabilities being delivered by other projects into its technical solution. Two of these projects experienced delays in the delivery of their capabilities and this resulted in delaying Boeing. Initial Materiel Release 1A was delayed by 6 months due to delays in interfacing projects. The implementation of an alternate solution resolved this issue and IMR 1A was achieved in February 18.

Due to continual delays with the eDLAN program, LAND 2072 Phase 2B has removed eDLAN interfacing requirements and replaced them with an alternate LAN as part of CCP015. Whilst this alternate LAN provides a more limited capability, the change has been endorsed by the Capability Manager. This has reduced the risk of further delays in the delivery of GFM to Boeing, however it has resulted in a slip of FMR by 16 months, to March 2022. CCP015 also introduced a new capability Release 3 that allows for those capabilities that were not impacted by the eDLAN delay to be delivered in capability Release 2, and those that were impacted by the delay to be delivered in capability Release 3. The eDLAN hardware procured with LAND 2072 Phase 2B funds will be repurposed (with different software) as an alternate LAN which may be integrated with the I-BTN at a later date.

Materiel Capability Delivery Performance

IMR, as defined in the contract, **was achieved** by Boeing in December 2017, allowing the Capability Manager to declare IMR, **as defined in the MAA V2.1**, February 2018. **Initial Operating Capability was declared as being achieved in March 2018**. Boeing is on schedule to deliver future releases of the contracted capability in accordance with CCP15, which includes the slip of Final Materiel Release (FMR) by 16 months, to March 2022

JC4ISPO has procured 259 eDLAN hardware systems, but note that they cannot be integrated in their current form. Army has sought additional funding from Government to remediate this integration problem using software from a different DLAN system. LAND 2072 Phase 2B has agreed with the Capability Manager to remove the requirement to integrate the eDLAN hardware with the I-BTN. Army agreed to consider declaration of the eDLAN Materiel Release milestone, as no further work will be undertaken due to the I-BTN system no longer being required to integrate with the eDLAN system.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

JP 2072 is a multi-phased program to define the Battlespace Communication Systems (Land) (BCS (L)) Communications Architecture, govern the design, incremental implementation and verification of system elements across a number of projects as well as acquire systems and equipment.

LAND 2072 Phase 2B will enhance and modernise land force communications by replacing existing ADF deployable communication information systems. It will replace and enhance the existing Battlespace Telecommunications Network (BTN) with an Integrated Battlespace Telecommunications Network (I-BTN). The I-BTN will provide secure communications within deployed ADF Headquarters, in order to effectively network commanders and their subordinate staff, allowing them to exchange voice, data and video. This capability will be further enhanced through the provision of a Headquarters On The Move (HQOTM) capability. LAND 2072 Phase 2B will also deliver a TRES, with the project currently preparing the Request for Tender documentation.

Second Pass approval also included a new purpose built System Support Facility (SSF). This facility replaces the previous support facility that has been operating out of demountable buildings. The design and construction of the SSF was delivered by E&IG, with the new facility commissioned in September 2017.

The I-BTN capability being delivered is classified as developmental, as no Off-The-Shelf systems were available to meet the requirements for the I-BTN. The I-BTN is being developed to integrate a range of both developmental components as well as a range of Off-The-Shelf components, to meet the requirements.

The I-BTN capability is being delivered in **three** releases:

Release 1 is a Transit Case based capability with an initial level of functionality of the Network Planning and Management System (NPMS). Commencement of delivery of Release 1 capability is aligned to achievement of IMR 1A.

Release 2 is **additional bearers** and includes the Medium Mounted Satellite Communications capability, **Troposcatter**, **External Network Access Point** and an **additional Currawong Network Edge Strategic to Tactical (CNEST)**.

Release 3 will include Vehicle Mounted nodes and will also deliver the Headquarters On The Move (HQOTM) node as well as secure voice and video services. Completion of delivery of Release 3 capability is aligned to achievement of Final Materiel Release (FMR).

A Performance Based Support Contract was signed at the same time as the Acquisition contract in September 2015 with the Contractor. The Support Contract **initially had** a three year **term** with a rolling wave of one year extensions to a maximum of 12 years. The operative date of the Support Contract **was 29 January 2018**. **As a consequence of CCP015, the introduction into service of equipment has been delayed resulting in an extension in Support Contract term of 3 to 5 years at a reduced yearly expenditure. The total saving over the 5 year period is approximately \$6 million. The Support Contract was transitioned to Battlespace Communications Operations Group (BCOG) in June 2018.**

Uniqueness

The project is highly complex and technically challenging as a result of having to design an I-BTN which integrates capabilities being delivered by other projects within CASG and Chief Information Officer Group (CiOG), as well as to deliver an I-BTN technical solution which is required to interoperate with a multitude of external interfaces.

Boeing is required to design and verify that the I-BTN provides end-to-end connectivity of specified Battlespace Communications System (Land) Services from the tactical environment into the strategic network. Boeing is executing the project in **three**

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

<p>capability releases across seven years.</p> <p>Boeing is developing both hardware and the network planning and management system software, as well as buying and integrating Off-The-Shelf equipment. Boeing is also required to integrate its system with existing satellite bearer systems and IT systems that have been delivered by other projects within CASG and CIOG.</p>
<p>Major Risks and Issues</p> <p>Progress in design maturity and schedule extensions introduced by CCP015 enabled the retirement or downgrade of a number of risks in-year.</p> <p>The remaining high risks relate to establishment of the capability baseline for the HQOTM vehicle. There is also significant risk in being able to successfully achieve Wideband Global Satellite (WGS) Certification for one of the I-BTN component capabilities within schedule.</p>
<p>Other Current Related Projects/Phases</p> <p>JP 2072 Phase 1, BCS(L): The initial phase of the JP 2072 program, this project has delivered communications bearers to the BMS, and enhancing communications for Australian Defence Force Land elements through the development of an holistic battlespace communications architecture for the Land environment.</p> <p>JP 2072 Phase 2A, BCS(L): Phase 2A is continuing the rollout of products selected during Phase 1 to primarily provide voice services to dismounted users. Phase 2A will also establish a mature support system for ongoing sustainment of the Phases 1 and 2A materiel systems and contribute to ongoing Prime System Integration activities to evolve the BCS(L) design. Investigation and/or market survey activities will be conducted to specify and identify products for potential procurement in future phases.</p> <p>LAND 2072 Phase 3, BCS(L): This project will introduce into service a digital communication backbone for land based elements of the Australian Defence Force (ADF) and their enabling elements. The capability is aligned with LAND 75 Phase 4 as part of a second tranche of LAND 200 with the capability being a vital function of the BMS. This phase will enhance the digital communications backbone delivered under previous phases, expand the provisioning to additional land forces and ADF elements, and provide a new capability to support the distribution and data management of the land Battlespace.</p> <p>The I-BTN is required to interface with multiple ADF platforms, including combat and non-combat vehicles, deployable satellite communication systems, and strategic communication systems. Any delays or issues within these platforms and systems can affect the testing, design, delivery or useability of the I-BTN.</p>
<p>Note</p>
<p>Major risks and issues are excluded from the scope of the review.</p>

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Oct 11	Project Budget		
May 15	Original Approved	3.9	1
	Government Second Pass Approval	911.8	4
	Total at Second Pass Approval	915.7	
Jun 19	Exchange Variation	26.9	
Jun 19	Total Budget	942.6	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Boeing Defence Australia	(225.6)	
	Contract Expenditure – Kellogg Brown and Root	(5.8)	
	Other Contract Payments/Internal Expenses	(100.9)	2
		(332.3)	
FY to Jun 19	Contract Expenditure – Boeing Defence Australia	(127.9)	
	Contract Expenditure – Kellogg Brown and Root	(3.4)	
	Other Contract Payments/Internal Expenses	(26.5)	3
		(157.8)	
Jun 19	Total Expenditure	(490.1)	
Jun 19	Remaining Budget	452.5	
Notes			
1	The project's original budget amount prior to Second Pass Approval.		
2	Other expenditure includes: enhanced Deployable Local Area Networks work package 754 (Order managed by Joint Command, Control, Communications, Computers and Intelligence Systems (JC4ISPO)) (62.7), software (19.1), ICT hardware & other equipment (11.8), technical and engineering services (4.3), Travel (1.8), legal fees (1.0) and other (0.1).		
3	Other expenditure includes: enhanced Deployable Local Area Network work packages 754 802 (Orders managed by JC4ISPO) (22.9), software (1.9), Other (0.6), Travel (0.5), Headquarters on the Move (0.5) and ICT hardware & other equipment (0.1).		
4	The total budget amount includes supplementary funding to JC4ISPO for the procurement of additional eDLAN systems (\$126m).		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
136.3	164.7	150.7	PBS – PAES: Variation relates to delays in delivery of enhanced Deployable Local Area Network (eDLAN) and additional Integrated Battlefield Telecommunications Network costs for non-delivery of eDLAN as Government Furnished Equipment. PAES – Final Plan: Variation relates to delay to Integrated Battlefield Telecommunications Network due to non-delivery of Government Furnished Equipment and delay in equipment deliveries for Headquarters on the Move.
Variance \$m	28.4	(14.0)	Total Variance (\$m): 14.4
Variance %	20.8	(8.5)	Total Variance (%): 10.6

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
-------------------------	------------	--------------	-----------------	-------------

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

		7.1	Australian Industry	Overspend is due to early completion of User Training for Material Release 3 and higher than anticipated price variation claims offset by decreases to planned spend on Enhanced Deployable Local Area Network and delays in equipment acquisition for Headquarters on the Move.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
150.7	157.8	7.1	Total Variance	
		4.7	% Variance	

2.3 Details of Project Major Contracts

2.6 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Kellogg Brown and Root (Integrated Support Contract)	Jul 15	9.6	13.1	Fixed	ASDEFCON (Services)	1,2
Boeing Defence Australia (I-BTN)	Sep 15	487.2	666.5	Fixed	ASDEFCON (Strategic Materiel)	1,3
Notes						
1	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
2	Increase in contract price due to additional security certification and accreditation services and annual updates to labour rates.					
3	Increase in Contract Price due to changes required for the Headquarters on the Move vehicle, Medium Satellite Terminal trailer, Support and Test Equipment and Spares, and eDLAN delays.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Kellogg Brown and Root (Integrated Support Contract)	N/A	N/A	Range of Integrated Support Contractor (ISC) Services in support of the LAND 2072 Phase 2B Project.			
Boeing Defence Australian (I-BTN)	See scope	See scope	1 Force Node Vehicle Mounted 8 Formation Nodes Vehicle Mounted 18 Formation Nodes Transit case 16 Unit Nodes Vehicle Mounted 21 Unit Nodes Transit Case 23 Relay Nodes Transit Case 3 Tactical Interface Stations 18 Headquarters on the Move Nodes	1		
Major equipment received and quantities to 30 Jun 19						
18 Formation Nodes Transit Case						
19 Unit Nodes Transit Case						
19 Relay Nodes Transit Case						
1 Tactical Interface Station						
Notes						
1	The scope of the contract was varied under CCP015, in agreement with the Capability Manager, amending the number of required Tactical Interface Stations from 4 to 3.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Requirement	System Requirements Review (SRR) Release 1 and 2	May 16	N/A	Mar 16	(2)	1
	System Definition Review (SDR) Release 1 and 2	Jul 16	N/A	Mar 16	(4)	1
Preliminary Design	Release 1	Oct 16	N/A	Sept 16	(1)	
	Release 2	Oct 17	Oct 18	Jul 18	9	2,5
Detailed Design	Release 1	Dec 16	N/A	Nov 16	(1)	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	Release 2	Jan 18	Feb 19	Dec 18	11	2
	Release 3	Mar 20	N/A	Mar 20	0	4
	Support System – Release 1	Nov 16	Feb 17	Dec 16	1	3
	Support System – Release 2	Jan 18	Mar 19	Feb 19	13	2
	Support Systems – Release 3	May 20	N/A	May 20	0	4
Notes						
1	SRR/SDR covered both Release 1 and Release 2.					
2	Release 2 was impacted by delays affecting interfacing projects and note this against all Note 2 delays.					
3	The Contract was changed with CCP 9 to correct the sequencing of the Support System Detailed Design so it was logically scheduled to occur after the Mission System Detailed Design. Support System Detailed Design for Release 1 was achieved ahead of the current Contract Date.					
4	Release 3 was introduced as part of CCP015 that replaced the need for eDLAN integration with an alternate LAN. This reduced reliance on delayed interfacing projects.					
5	Preliminary Design for Release 2, which was completed in July 2018, included the capabilities that are now being delivered in both Release 2 and Release 3.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	Release 1 Mission System Integration & Interoperability Verification	Jul 17	Dec 17	Dec 17	5	1
	Release 2 Mission System Integration & Interoperability Verification	Apr 19	May 20	May 20	13	1
	Release 3 Mission System Integration & Interoperability Verification	Mar 21	N/A	Mar 21	0	2
Acceptance	System Acceptance – R1	Aug 17	Feb 18	Dec 17	4	1
	System Acceptance – R2	Jun 19	Jul 20	Jul 20	13	1
	System Acceptance – R3	May 21	N/A	May 21	0	2
	Final Acceptance (FA) - Acquisition Contract	Feb 21	May 22	May 22	15	2
Notes						
1	Release 2 expands the capability of Release 1, and has been impacted by delays affecting interfacing projects					
2	Release 3 was introduced as part of CCP015 that replaced the need for eDLAN integration with an alternate LAN. This reduced reliance on delayed interfacing projects.					

Project Data Summary Sheets

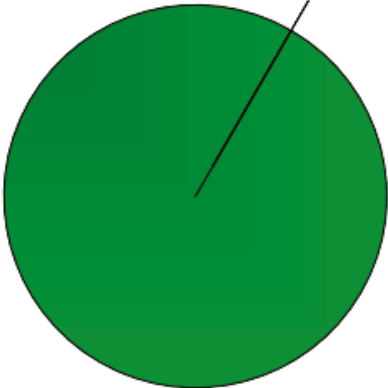
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Progress: Toward Materiel Release and Operational Capability Milestones				
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
I-BTN				
Initial Materiel Release (IMR) 1A	Aug 17	Feb 18	6	1
I-BTN Initial Operational Capability (IOC)	Sep 17	Mar 18	6	1
(Release 1) Materiel Release 1	Oct 17	May18	7	2
(Release 1) Materiel Release 2	May 18	Dec 18	7	2
(Release 1) Materiel Release 3	Oct 18	Jul 19	9	2
(Release 2) Materiel Release 5	Dec 19	Nov 20	11	1, 2
(Release 2) Materiel Release 6	Oct 20	Mar 21	5	1, 2
(Release 3) Materiel Release 7	Nov 21	Nov 21	0	1, 2
(Release 3) Materiel Release 8	Mar 22	Mar 22	0	1, 2
I-BTN Final Materiel Release (FMR)	Nov 20	Mar 22	16	2
eDLAN				
eDLAN Materiel Release	Jul 18	Jun 19	12	3
I-BTN Final Operational Capability (FOC)	Sep 20	Sep 22	24	4
Notes				
1	Due to delays incurred to date with interfacing projects, alternative interim interface requirements for Release 1 were implemented and resulted in a six month slip to IMR 1A and IOC I-BTN. This also deferred the Release 2 Materiel Releases (Materiel Releases 5 and 6) by making Materiel Release 4 no longer used and introducing Materiel Release 6. CCP15 introduced Release 3 (Materiel Releases 7 and 8) to remove the requirement to integrate I-BTN with eDLAN. There was a resultant slip to FMR of 16 months to forecast date.			
2	Materiel Release (Release 1, Release 2, Release 3) milestones will be achieved when the units receiving the capability sign the unit acceptance certificate. This variance is dependent on unit availability to conduct the unit test activity.			
3	Integration between eDLAN and the I-BTN is no longer required. Army agreed to consider declaration of the eDLAN Materiel Release milestone, as no further work will be undertaken due to the I-BTN system no longer being required to integrate with the eDLAN system.			
4	The planned FOC date will occur 6 months after FMR. This is a combination of the delay related to CCP015 and to allow time for Army to conduct testing and evaluation during Army exercises			
<div><div>Schedule Status at 30 June 2019</div><div><div><div>Schedule Plan at Government Approval</div><div>Schedule Plan at 30 June 2019</div></div><div><div><div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><</div></div></div></div>				

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	Green: The Project is currently meeting the majority of capability requirements as expressed in the Materiel Acquisition Agreement and supporting suite of Capability Definition Documentation.
	Amber: N/A
	Red: N/A
	Note This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR) 1A	<ul style="list-style-type: none"> Verification & validation, testing and certification completed Initial Learning Management Packages Approved Initial Support Contract is in place Commonwealth acceptance of supplies for those units identified for Materiel Release 1 Completion of AT for initial release 	Achieved
	IMR 1A was achieved in February 2018	
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> For Army - Delivery of four man portable formation nodes, four unit nodes, and three HCLOS with trained soldiers to enable planning, configuration and operation of Force and Formation level networks. For Air Force - Delivery of four man portable formation nodes, two man portable unit nodes and one HCLOS with trained crew to enable planning, configuration and operation of a Formation level network. 	Achieved
	IOC was achieved in March 2018	
Final Materiel Release (FMR)	<ul style="list-style-type: none"> Verification & validation, testing and Certification completed All elements of the Mission System are delivered to units All introduction into service training is completed and approved Learning Management Plans for sustainment training delivered to Army Mature Support Contract in place including delivery of Data Transfer Equipment (DTE); Delivery of Hand Held Satellite Terminal (HHST) 	Not yet achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	FMR is currently forecast for achievement in March 2022	
Final Operational Capability (FOC)	<p>The provision, support and training of the IBTN to all Army and Air Force in accordance with the Basis of Issue (BOI).</p> <p>Scope includes;</p> <ul style="list-style-type: none"> • 1 Force Node Vehicle Mounted • 8 Formation Nodes Vehicle Mounted • 18 Formation Nodes Transit case • 16 Unit Nodes Vehicle Mounted • 21 Unit Nodes Transit Case • 23 Relay Nodes Transit Case • 3 Tactical Interface Stations • 18 Headquarters on the Move Nodes <p>FOC is currently forecast for achievement in September 2022.</p>	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Development of two bespoke I-BTN components present technical risks of failure of the components or unsuitability for use with Defence planning processes.	Remediation through early and extensive component testing both in laboratory and field environments, and close engagement with the user community. Design progress and reliability of technical solutions have allowed this risk to be downgraded to Medium.
WGS certification for HQOTM and Medium SATCOM Terminal (MST) systems may take longer than anticipated.	Remediation through conduct of stakeholder working groups, and early and close engagement with WGS certification authorities. HQOTM certification has been downgraded to medium risk as delays introduced by CCP015 allow additional schedule to complete certification. MST certification remains high risk.
Delayed availability of an approved capability baseline for the HQOTM vehicle platform may cause I-BTN re-work (with associated costs and schedule impacts) and delays in establishment of the HQOTM support system.	Close engagement with the vehicle platform Systems Program Office, and Army Capability Manager to provide advance warning of potential baseline changes and to identify support system limitations that require remediation. The sustainment organisation has taken responsibility for support of the vehicle. However, technical certification and consistency of the vehicle platform baseline remain high risk.
Required HQOTM “mission fits” may place design constraints on the HQOTM or require design re-work to accommodate critical emerging requirements.	Remediation through the conduct of working groups with key stakeholders. This risk has been retired as deployability of the HQOTM vehicle fleet is being managed by the sustainment organisation.
Due to operational and exercise requirements, and the aggressive Release 2 training schedule, the responsible Service HQ Training Authority (TA) may not have sufficient time to review and endorse the Learning Management Packages (LMP), and Defence personnel may be unavailable to attend I-BTN training to meet the schedule, resulting in increased Gap Training being required	Remediation through involving the TAs in development of the Training Implementation Plan, close involvement of the TAs during development of the LMPs, and maintaining as much flexibility as possible in the construct of training courses and schedules. The TA has been engaged and prior experience of Release 1 training approval provides confidence that further approvals will go well. Based on this, the risk has been downgraded to Medium.
The platform directed for use by the Commonwealth as the MST trailer chassis may be unsuitable due to its physical characteristics. Additionally platform design changes between prototype and mature states may have critical impacts on the MST design.	Remediation through early MST prototype testing, close engagement between all stakeholders to examine impacts of proposed design changes and alternatives. Increased maturity of the trailer and integration designs has allowed this risk to be reduced to Medium.
Defence test ranges and Boeing environmental test facilities may not be available when required by the project schedule, or may not be suitable in meeting project Verification and Validation requirements.	Remediation through regular engagement with range authorities to confirm schedules, close examination of the suitability of test facility capabilities to meet project V&V requirements, and investigation of alternative test methodologies and/or backup facilities. Changes in test range requirements and progress of test facility certification has provided confidence that the requirements of V&V will be met. This has enabled this risk to be downgraded to Medium.

Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
Some network architecture and application incompatibilities may impact on performance of the I-BTN if not addressed.	Remediation through investigation of alternative architectures and tailored redesign of applications to improve backward compatibility. Progress in design and testing activities has enabled this issue to be downgraded to Medium.
Delays in development and delivery of interfacing projects, such as eDLAN, have led to delays in the I-BTN Release 2 schedule.	Remediation through implementation of an eDLAN interim version, realignment of project schedule dependencies and close engagement with interfacing projects. CCP015 removed the requirement to interface with eDLAN, and the delays to FMR have allowed additional time for delayed sub-projects to be completed. Based on this, the issue has been downgraded to Medium.
The TRES schedule is not achievable within the existing I-BTN FMR schedule due to resourcing constraints.	Seek additional staff to undertake the work. Reallocate work to existing workforce as capacity and priorities permit. This issue has been downgraded to Medium as the change to FMR date has allowed more time for the TRES work to be completed.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

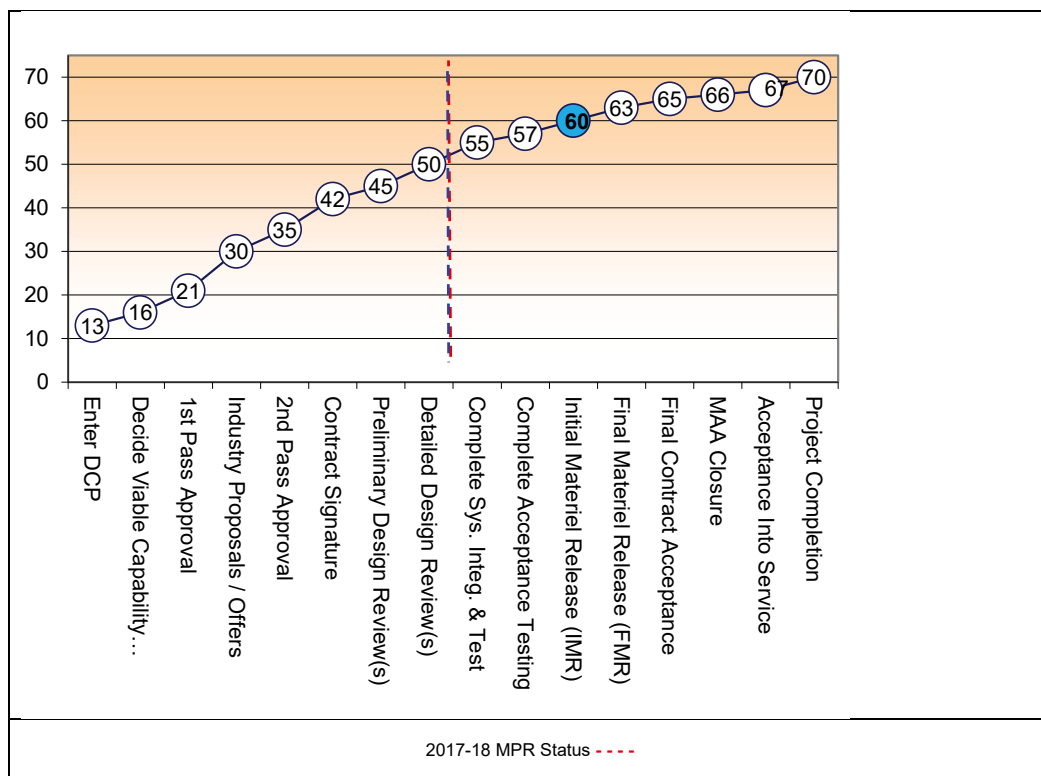
Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	7	7	7	8	7	8	9	53
	Explanation	<p>LAND 2072 Phase 2B has achieved IMR 1A. There are three capabilities releases. Release 1 was required for achievement of IMR 1A, Release 2 is beginning formal testing and Release 3 design is underway. LAND 2072 Phase 2B has assessed this score to cover the whole project (Release 1, 2 and 3).</p> <p>Schedule. Whilst IMR 1A has been achieved, there remain schedule risks to the development of the Release 2&3 capability. The Capability Manager has endorsed a revised schedule that introduces Release 3 and delays FMR/FOC.</p> <p>Cost. The project has applied contingency to treat risks and issues in this financial year. The budget estimate at completion remains within the approved budget and contingent allocation.</p> <p>Requirement. Whilst IMR 1A has been achieved and Release 2 has completed design, Release 3 is yet to complete design and testing requirements.</p> <p>Technical Difficulty. Whilst IMR 1A has been achieved, Release 2 is yet to complete testing requirements and Release 3 is yet to complete design and testing requirements.</p>							

Project Data Summary Sheets

Auditor-General Report No.19 2019–20
2018–19 Major Projects Report



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Collaborative engagement by the Contractor, CASG and the Capability Manager has resulted in better outcomes for the delivered capability.	Requirements Management
Contracting for a performance based support contract at the same time as the acquisition contract results in better design decisions during the acquisition contract.	Contract Management
User engagement during the Mission System Integration Test Events (MSITE) has resulted in an improved capability by early user engagement during the design phase. This also leads to improving the management of user expectations.	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Mr Ivan Zlabur
Branch Head	Ms Myra Sefton
Project Director	Mr Michael Peel
Project Manager	CAPT(Army) Sean Cahir

Project Data Summary Sheet¹⁵⁴

Project Number	AIR 7403 Phase 3
Project Name	Additional KC-30A Multi-role Tanker Transport
First Year Reported in the MPR	2015-16
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jun 15
Budget at 2 nd Pass Approval	\$681.9m
Total Approved Budget (Current)	\$894.3m
2018-19 Budget	\$53.1m
Project Stage	Initial Materiel Release
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

AIR 7403 Phase 3 has acquired two A330-200 aircraft and converted them to KC-30A Multi-role Tanker Transport (MRTT) aircraft. **Both aircraft have been** delivered and associated spares and support equipment **delivery is ongoing**. This project follows on from AIR 5402 which delivered five MRTT aircraft equipped with both hose and drogue and boom refuelling systems capable of in-flight refuelling of current and future aircraft. The second additional aircraft, MRTT#7, **has also completed** further modification to include an enhanced interior and communications suite known as the Government Transport and Communications (GTC) capability.

1.2 Current Status

Cost Performance

In-year

In-year cost performance to **30 June 2019** has resulted in an underspend of **\$11.0m**. This variance is primarily attributed to the **reprioritisation of commitments within Defence**.

Project Financial Assurance Statement

As at 30 June **2019**, project AIR 7403 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Aircraft conversion schedule supports achievement of the Final Materiel Release (FMR) / Final Operational Capability (FOC) planned dates.

Initial Materiel Release (IMR) was declared in February 2018 with Initial Operational Capability (IOC) achieved in April 2018.

The most significant milestones achieved in financial year 2018-19 were the acceptance of the MRTT#7 GTC modification in September 2018 and the delivery of the aircraft to Air Force in May 2019.

Materiel Capability Delivery Performance

The project **has completed delivery of** the two additional KC-30A MRTT aircraft to Air Force with MRTT#7, being the second additional KC-30A MRTT aircraft, modified to include the GTC capability.

The project remains on schedule to deliver all critical support systems for the additional aircraft by Final Operational Capability (FOC).

Note

Forecast dates and capability assessments are excluded from the scope of the review.

154 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

1.3 Project Context

<p>Background</p> <p>AIR 7403 Phase 3 is an extension of the original AIR 5402 acquisition contract that provided the Australian Defence Force with five KC-30A MRTT aircraft. The KC-30A MRTT aircraft design was previously accepted under AIR 5402.</p> <p>Government provided a combined first and second pass approval in June 2015 for the purchase of two additional Airbus A330-200 aircraft for conversion to KC-30A MRTT aircraft.</p> <p>In February 2016, the project received interim Government approval for a scope increase to further modify the second MRTT aircraft to provide an enhanced communications capability in support of long-range international government transport (the GTC).</p> <p>In accordance with Government approval, AIR 7403 Phase 3 is scoped to provide two additional KC-30A MRTT aircraft that meet the same configuration to the maximum extent possible to the Air Force fleet of five KC-30A MRTT aircraft. To meet these requirements there is a need to Australianise the MRTT aircraft as provided by Airbus Defence and Space. In August 2016, Defence signed a contract with Airbus Defence and Space for the MRTT#7 GTC Capability.</p>
<p>Uniqueness</p> <p>The two aircraft were previously operated under lease by Qantas and originally assembled between the first two Royal Australian Air Force (RAAF) MRTT aircraft that are the basis of the KC-30A design. Being the same overall civil build status provides an opportunity to maintain close commonality with the configuration of the existing RAAF KC-30A fleet.</p> <p>The enhanced communications capability in support of long-range international government transport installed on a KC-30A MRTT aircraft will be the first of type for Air Force.</p>
<p>Major Risks and Issues</p> <p>Given the project has accepted both aircraft, the project is not currently managing any high or extreme risks and/or issues.</p>
<p>Other Current Related Projects/Phases</p> <p>N/A</p>
<p>Note</p> <p>Major risks and issues is excluded from the scope of the review.</p>

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Jun 15	Original Approved (Second Pass Approval)	681.9	
Mar 16	Real Variation – Scope	187.7	1
Mar 16	Real Variation – Budgetary Adjustment	(4.8)	2
		182.9	
Jun 19	Exchange Variation	29.5	
Jun 19	Total Budget	894.3	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Airbus Defence and Space	(533.0)	3
	Contract Expenditure – US Government	(4.0)	3
	Other Contract Payments / Internal Expenses	(53.3)	4
		(590.3)	
FY to Jun 19	Contract Expenditure – Airbus Defence and Space	(34.6)	3
	Other Contract Payments / Internal Expenses	(7.5)	5
		(42.1)	
Jun 19	Total Expenditure	(632.4)	
	Remaining Budget	261.9	
Jun 19			
	Notes		
1	The approved scope increase associated with interim pass approval has been incorporated into the budget, increasing the project approval by \$187.7m, for the Government Transport and Communications modification.		
2	Budgetary adjustment was to correct an error in the price basis immediately following guidance transfer.		
3	The scope of this contract is explained in Section 2.3 – Details of Project Major Contracts.		
4	Other expenditure comprises an additional spare engine procurement, contractor support, legal support, salaries and other capital expenditure inclusive of Discrete Tasking Orders and travel.		
5	Other expenditure comprises Northrop Grumman minor contracts (\$2.2m), Airbus Defence and Space minor contracts (\$0.7m), Equipment procurements (\$2.6m) and (\$2.0m) for other contractors, technical and engineering support, and travel.		

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
78.2	59.6	53.1	<p>PBS to PAES: The variation is primarily due to the retirement of risk within the prime contract, a revised schedule for the delivery of spares and support equipment plus budgeted exchange rate adjustments from the PBS to the PAES plan.</p> <p>PAES to Final Plan: The variation is primarily the result of further retirement of risk, a revised schedule for FMS deliveries and budget exchange rate adjustments.</p>
Variance \$m	(18.6)	(6.5)	Total Variance (\$m): (25.1)
Variance %	(23.8)	(10.9)	Total Variance (%): (32.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(1.6)	Australian Industry	The variation is primarily driven by a reprioritisation of commitments within Defence for Foreign Military Sales, deeper level maintenance and entry into service contract payments.
			Foreign Industry	
		(9.4)	Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
53.1	42.1	(11.0)	Total Variance	
		(20.7)	% Variance	

2.3 Details of Project Major Contracts

3. Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Airbus Defence and Space	Jun 15	408.8	587.4	Variable	ASDEFCON	1, 2, 5
US Government	Mar 16	9.9	9.7	Fixed	FMS	1, 3, 4
Notes						
1	Contract Value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current budget exchange rates, and includes adjustments for indexation (where applicable).					
2	Price at 30 June 2019 includes the addition of Contract Change Proposals (CCPs) 141 (Deferred arrival of MRTT#6 and Conduct of additional maintenance), 143 (Cabin Changes, Landing Gear Service Bulletins, and Refuelling Boom Roller Improvement) and 144 (Repair to Left Hand Main Landing Gear Support Rib 6).					
3	Price at signature has changed from the 2017-18 MPR to exclude the ISREWSP0 sustainment organisation funded component worth \$1.2m.					
4	Price at 30 June 2019 includes \$2.8m expected to be funded by the HALSPO sustainment organisation due to cross-levelling of financial resources within the Branch.					
5	The Airbus Defence and Space Contract Value in the 2017-18 Major Projects Report was incorrectly reported as \$532.8m. This should have been reported as \$586.4m with a variance of \$53.6m.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Airbus Defence and Space	2	2	Purchase of two additional A330-200 aircraft, conversion to KC-30A MRTT, and further modification of one KC-30A MRTT aircraft to include a GTC capability.			
US Government	2	2	This FMS case value is to fund Large Aircraft Infra-Red Counter Measure (LAIRCM) kits.			
Major equipment received and quantities to 30 Jun 18						
Two additional Airbus A330-200 aircraft were accepted in July and November 2015 respectively. Both aircraft were immediately transferred to Airbus Defence and Space, Madrid Spain for conversion to MRTT aircraft. MRTT#6, the first additional KC-30A MRTT aircraft was accepted in June 2017 and the second in May 2019.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
--------	-------------------------------	------------------	-----------------	-------------------	-------------------	-------

System Requirements	MRTT Aircraft	N/A	N/A	N/A	0	1
Preliminary Design	MRTT Aircraft	N/A	N/A	N/A	0	1
	MRTT# 7 - GTC Aircraft	Oct 16	N/A	Nov 16	1	2, 3
Critical Design	MRTT Aircraft	N/A	N/A	N/A	0	1
	MRTT# 7 - GTC Aircraft	Dec 16	N/A	Mar 17	3	2, 4
Production Readiness Review	MRTT Aircraft	Dec 15	N/A	Mar 16	3	5
	MRTT# 7 - GTC Aircraft	Jun 17	N/A	Jul 17	1	2, 6
Test Readiness Review	MRTT# 7 - GTC Aircraft	Sep 18	Oct 18	Nov 18	2	2, 7
Notes						
1	MRTT aircraft system requirements and design reviews not required as the design was previously approved under the original acquisition contract, project AIR 5402 Air to Air Refuelling Capability.					
2	Additional Design Review milestones have been added for development of the MRTT GTC modification.					
3	MRTT# 7 GTC aircraft Preliminary Design Review (PDR) was completed in October 2016 with PDR milestone achieved in November 2016.					
4	MRTT# 7 GTC aircraft Critical Design Review (CDR) was completed in January 2017 with CDR milestone achieved in March 2017.					
5	The Additional MRTT Aircraft Production Readiness Review (PRR) was completed in December 2015 with PRR milestone achieved in March 2016.					
6	MRTT# 7 GTC aircraft PRR was completed and milestone achieved in July 2017.					
7	Test Readiness Review (TRR) physically completed in Oct 18. Milestone sign off occurred in November 2018 after all other administrative activities were completed.					

3.2 Contractor Test and Evaluation Progress

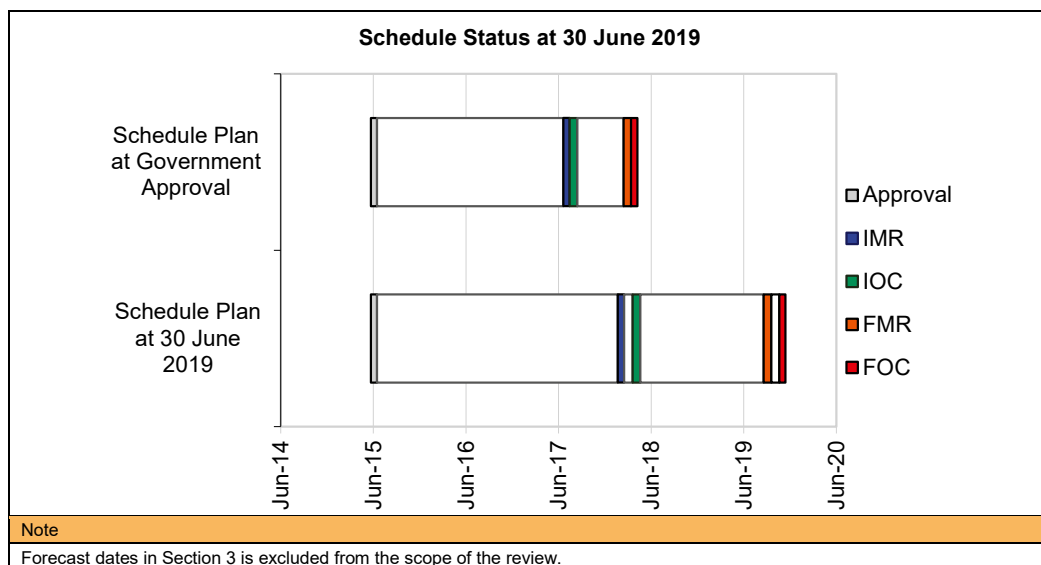
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Acceptance	Purchase of first additional A330-200 aircraft	Jul 15	N/A	Jul 15	0	
	Purchase of second additional A330-200 aircraft	Nov 15	N/A	Nov 15	0	
	Acceptance of MRTT# 6	May 17	N/A	Jun 17	1	1
	Completion of MRTT#7 conversion	Aug 17	N/A	Aug 17	0	1
	MRTT#7 GTC Fitout Completion	Dec 18	Sep 18	Sep 18	(3)	2
	MRTT#7 GTC Final Acceptance	May 19	N/A	May 19	0	
	Contract Final Acceptance	Oct 17	Sep 19	Sep 19	23	3
Notes						
1	The Commonwealth has factored in additional time to accommodate rework activities that may be required to close out these milestones. This remains within the project's planned delivery window.					
2	The variance represents the work was achieved ahead of schedule.					
3	Variance is directly linked to the inclusion of the GTC modification and acceptance and introduction into service of the MRTT GTC aircraft. Additionally, final acceptance will occur after the delivery of maintenance publications that occurs in September 2019 as detailed in the Airbus DS schedule.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul 17	Feb 18	7	1
Initial Operational Capability (IOC)	Jul 17	Apr 18	9	1
Final Materiel Release (FMR)	Mar 18	Oct 19	19	1
Final Operational Capability (FOC)	Mar 18	Dec 19	21	1, 2
Notes				
1	Variance is directly linked to the inclusion of the GTC modification and acceptance and introduction into service of the MRTT GTC aircraft.			
2	FOC is identified in the MAA as December 2019. The 2 month variance to the forecast date previously reflected in the 2017-18 MPR represents non-realised predicted schedule savings with the forecast returning to the date as agreed when the GTC capability was introduced in March 2016. No variance currently exists to the planned FOC date for the GTC capability scope.			

Project Data Summary Sheets

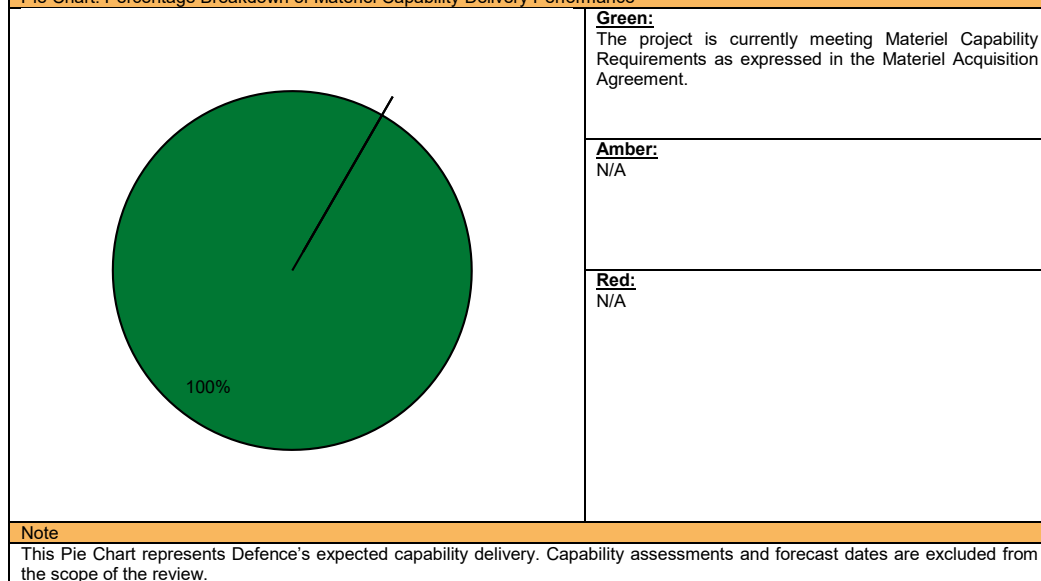
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	KC-30A MRTT#6 delivered and accepted including the following: <ul style="list-style-type: none"> Initial MRTT spares; and Initial Support equipment. IMR was achieved in February 2018.	Achieved
Initial Operational Capability (IOC)	One KC-30A MRTT aircraft delivered to Defence with sufficient personnel at 33 squadron trained to perform their assigned roles. IOC was achieved in April 2018.	Achieved

Final Materiel Release (FMR)	KC-30A MRTT#7 with GTC capability delivered and accepted including the following: <ul style="list-style-type: none"> • Final delivery of remaining MRTT spares and support equipment; • Delivery of MRTT GTC spares and support equipment; and • Delivery of Aircraft Stores Replenishment Vehicle. FMR is expected to be achieved in October 2019.	Not yet achieved
Final Operational Capability (FOC)	Two KC-30A aircraft delivered to Defence; one with a GTC capability and with sufficient personnel at 33 squadron trained to perform their assigned roles. Also includes other critical supporting elements delivered. FOC is expected to be achieved in December 2019.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
1. The Logistics suite of products required to support both integration of the modification and or acceptance into service may not be synchronised with the aircraft delivery schedule.	Early identification of potential shortfalls and engagement with both prime contractor and external agencies to develop plans to secure adequate resources and or procurement of spares and support equipment for introduction into service of the additional two MRTT aircraft. Risk closed as sufficient additional MRTT spares and support equipment have been delivered to support FMR & FOC. Further the aircraft delivery has completed with the transfer of title and entry onto the defence register achieved May 2019. Therefore the risk has been fully retired.
2. The additional suite of Logistics products required to support both integration of the modification and or acceptance into service, including Training Courses and Courseware to support the MRTT#7 GTC configuration may not be synchronised with the aircraft delivery schedule.	Early identification of potential shortfalls and engagement with prime contractor, their partnering contractors and external agencies to develop plans to secure adequate resources, training courseware and or procurement of spares and support equipment for introduction into service of MRTT#7 in GTC configuration. This risk is closed following successful completion and delivery of GTC initial training and the recommended GTC spares provisioning list.
3. Accreditation and certification of the suite of Information, Technology and Communications (ITC) equipment to be installed as part of MRTT#7 GTC fitout may not be achieved due to conflict with Airworthiness and security accreditation design requirements and deficiencies in the ITC design solution.	Early engagement with contractor and other Commonwealth agencies including airworthiness and accreditation authorities to verify and validate design, including conduct of formal verification testing in Europe prior to delivery and acceptance of MRTT#7 GTC aircraft in Australia. This risk is closed following successful completion of the ICT accreditation process.
4. Contractual acceptance of the KC-30A Government Transport and Communications (GTC) capability may be delayed / impacted by the identification of and time required to rectify unserviceability's identified during MRTT#7 scheduled maintenance. Contractual acceptance may also be impacted if, due to other contractual obligations Prime contractor resources are not available support MRTT#7 regression testing on completion of GTC conversion.	Maintain close communications with Airbus Defence and Space (AD&S) to ensure that the Commonwealth is informed of any unserviceability that may impact MRTT#7 GTC schedule, and that if required, activate contractual mechanisms to ensure prompt commitment so as not to delay rectifications and or MRTT regression testing, including any specialist resources to support that program prior to contractual acceptance of the MRTT#7 GTC capability. This risk is closed as the aircraft has been contractually accepted.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

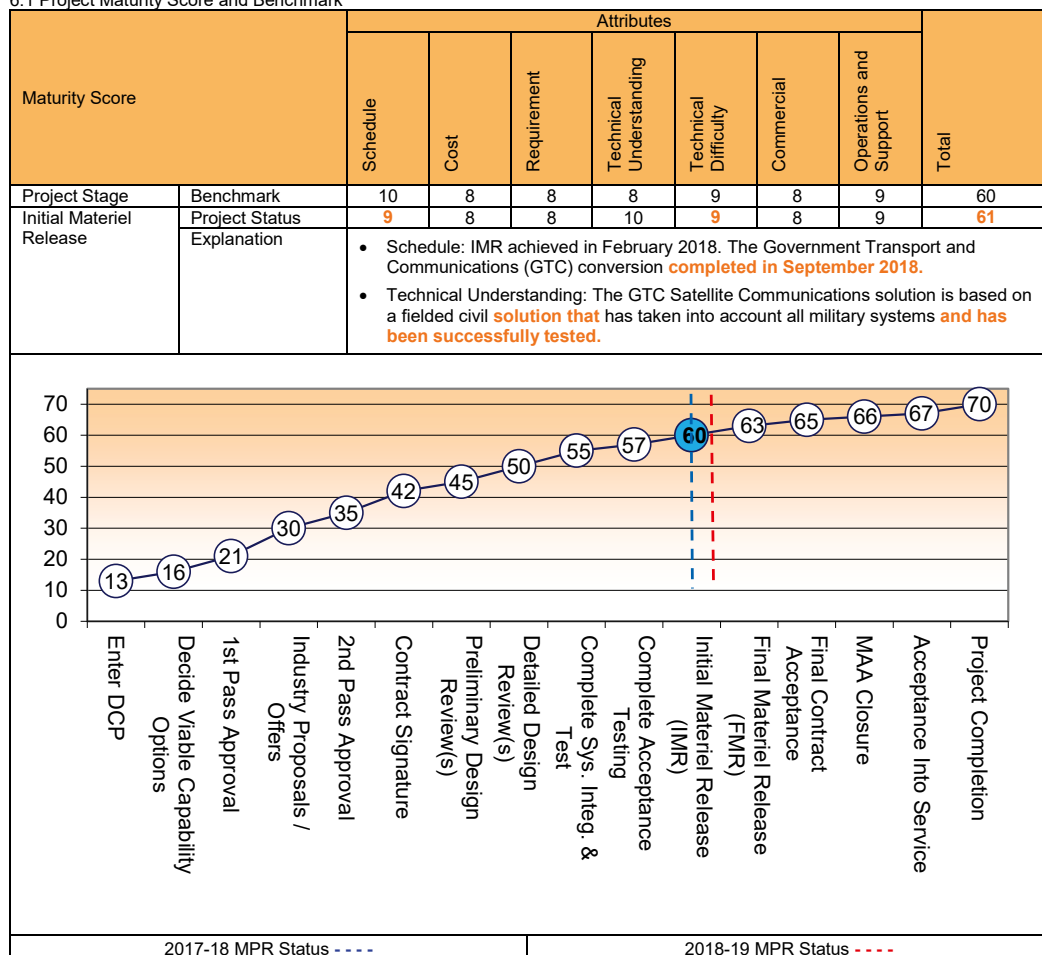
Description	Remedial Action
N/A	N/A
Note	
Major risks and issues in Section 5 is excluded from the scope of the review.	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 19

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Graham Edwards
Project Director	Mr Wayne Bicket
Project Manager	WGCDR David Mackay

Project Data Summary Sheet¹⁵⁵

Project Number	SEA 1448 Phase 2B
Project Name	ANZAC ANTI-SHIP MISSILE DEFENCE
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Acquisition Type	Developmental
Capability Manager	Chief of Navy
Government 1st Pass Approval	Nov 03
Government 2nd Pass Approval	Sep 05
Budget at 2 nd Pass Approval	\$248.8m
Total Approved Budget (Current)	\$678.7m
2018-19 Budget	\$3.1m
Project Stage	Final Contract Acceptance
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA 1448 Phase 2 project has provided the ANZAC Class Frigates with an enhanced level of self-defence against modern anti-ship missiles.

There are two sub-phases of SEA 1448 Phase 2. Phase 2B of the ASMD Project, has introduced an indigenous, leading edge technology, phased array radar (CEAFAR) and missile illuminator (CEAMOUNT) collectively referred to as the Phased Array Radar (PAR) System. The PAR System delivers enhanced target detection and tracking that allows Evolved Sea Sparrow Missiles to engage multiple targets simultaneously. A new dual ship-set I-Band Navigation radar has also been provided under this Phase.

1.2 Current Status

This Project had been a Project of Concern since June 2008, but was removed in November 2011 as part of the Real Cost Increase (RCI) decision made by Government in November 2011.

Cost Performance

In-year

As at 30 June 2019 the project has underspent by \$0.2m against the budget for the Financial Year 18/19.

Project Financial Assurance Statement

As at 30 June 2019 project SEA 1448 Phase 2B has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Based on the revised acquisition strategy approved by Government in July 2009, the systems being delivered in Phase 2B are largely on schedule. With the RCI for Phase 2B approved for the follow on ships 2-8 in November 2011, there is now a 65 month variance to the original approved date for Final Operational Capability (FOC) for this phase of the project. During 2014-15, due to pressures from the large sustainment program of work, a revised schedule was developed for ships four onwards. The project claim for Final Materiel Release (FMR) to the Capability Manager was approved in November 2018. FOC was achieved on 18 June 2019

155 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

Materiel Capability Delivery Performance

Initial Materiel Release (IMR) was claimed for Stage 1 Capability on HMAS *Perth* on 24 June 2011. The Chief of Navy formally provided Initial Operational Release (IOR) for ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems in 16 August 2011. The Project has now completed Operational Test & Evaluation (OT&E) for the final Stage 2 capability. Initial Operational Capability (IOC) was achieved in September 2015. **Final Materiel Release (FMR) was achieved in November 18. Final Operational Capability (FOC) was achieved on 18 June 2019**

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The need for an ASMD capability in the Royal Australian Navy's (RAN) surface fleet was first foreshadowed in the 2000 Defence White Paper.

SEA 1448 Phase 2B is the final Phase of the ANZAC ASMD Program, where the addition to the Class of the phased array radar technology is being undertaken by the Australian Company CEA Technologies and the overall integration into the ANZAC Class is being performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Australia (formerly Saab Systems)).

SEA 1448 Phase 2B was approved by Government in September 2005. SEA 1448 Phases 2A (the initial phase of the ASMD Project which is procuring the combat management system hardware and the infra-red search and track capability) and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Due to its leading edge and developmental technology, Phase 2B, was considered to be a high risk phase. Originally planned for installation into all eight ANZAC Class ships under a single contract, a further review in 2007 of the technical risks associated with the introduction of the leading edge radar led Government in August 2009 to revise the acquisition strategy to a single ship installation. This strategy allows the project to prove this capability at sea before seeking Government approval to commence installation into subsequent ships. The lead ship, HMAS *Perth*, successfully underwent acceptance testing between October 2010 and June 2011 with the Chief of Navy accepting IOR in August 2011. IOC was achieved in September 2015. **Final Materiel Release (FMR) was achieved in November 2018. Final Operational Capability (FOC) was achieved on 18 June 2019.**

Uniqueness

The phased array radar component of the ASMD Project is highly developmental and has not previously been fielded in this form before, although the system components are fourth generation derivatives of fielded CEA systems. The RAN is the first to operate a ship with the Australian designed and manufactured CEA Technologies low power active Phased Array Radar System.

Major Risks and Issues

The remaining issues for SEA 1448 Phase 2B are:

MAA closure is delayed as activities have not been planned and costed – This issue relates to the closure of the FMS case which when first addressed was delayed by a United States Navy (USN) purchase of spares related to the case which had taken 6 years to order. The consequence was a delay in Foreign Military Sales (FMS) Case closure and at this stage it is unknown if further purchases are expected. This is currently out of the control of the SEA1448 project and as such remains an issue to be monitored and controlled where possible. At 30 Jun 2019 the status remains at 'implemented' in the US with a further request for a status update sent to NIPO.

Other Current Related Projects/Phases

SEA 1448 Phase 2A – This initial phase of the ASMD Project upgraded all eight of the ANZAC Class Ship's existing ANZAC Class Combat Management Systems (CMS) and fire control systems, and installed an Infra-Red Search and Track (IRST) System which provides improved detection of low level aircraft and anti-ship missiles when the ship is close to land. **SEA1448 Phase 2A achieved Final Operational Capability (FOC) on 18 June 2019 in the same signal as Phase 2B.**

SEA 1448 Phase 4A – This Phase complements the ASMD Upgrade by delivering a contemporary Electronic Support Measures (ESM) system. This Phase is being managed through Electronic Systems Division (ESD).

SEA 1448 Phase 4B – This Phase replaces the obsolescent SPS-49 long range air search radar and existing Identification Friend or Foe (IFF) system with a combined CEA phased array radar and IFF system which is integrated with the radar and Combat Management System upgrades installed by SEA1448 Phase 2B. This Phase is being managed by Boats, Upgrades and Infrastructure Development Branch within Ships Division.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Sep 05	Original Approved (Second Pass Approval)	248.8	
Mar 06	Real Variation – Transfers	155.4	1
May 06	Real Variation – Transfers	(6.7)	2
Nov 11	Real Variation – Scope	214.7	3
		363.4	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Jul 10	Price Indexation	76.1	4
Jun 18	Exchange Variation	(9.6)	
Jun 19	Total Budget	678.7	
Project Expenditure			
Prior to Jul 18	Contract Expenditure – CEA Technologies (PAR Production)	(191.3)	5
	Contract Expenditure – BAE Systems Australia (Follow On Ships)	(181.0)	
	Contract Expenditure – Saab Australia Pty Ltd (First of Class)	(78.8)	
	Contract Expenditure – BAE Systems Australia (First of Class)	(63.9)	
	Contract Expenditure – CEA Technologies (P3 Contract)	(57.6)	6
	Contract Expenditure – ICWI Membership	(19.7)	
	Other Contract Payments / Internal Expenses	(50.2)	7
		(642.5)	
FY to Jun 19	Contract Expenditure – BAE Systems Australia (Follow On Ships)	(2.5)	
	Contract Expenditure – CEA Technologies (PAR Production)	(0.2)	5
	Other Contract Payments / Internal Expenses	(0.2)	7
		(2.9)	
Jun 19	Total Expenditure	(645.4)	
Jun 19	Remaining Budget	33.3	
Notes			
1	\$155.4m transferred from SEA 1448 Phase 2A after Government agreed that initial Very Short Range Air Defence (VSRAD) was to be replaced with the PAR System from CEA.		
2	Transfer to DSTO (Maritime Operations Division) for phased array radar risk mitigation activities in line with original Government approval in September 2005.		
3	RCI of \$214.7m approved for the follow on ships 2-8 in November 2011.		
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$71.0m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$5.1m having been applied to the remaining life of the project.		
5	This is the production contract for the delivery of the first PAR System into HMAS <i>Perth</i> (lead ship). Following the approval of an RCI in November 2011, options were exercised to increase the scope to the remaining seven ships and spare system. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also included forward component buys.		
6	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first PAR System.		
7	Other expenditure comprises: operating expenditure, short term contractors, consultants and other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
4.6	4.9	3.1	<p>PBS – PAES: The variation of \$0.3m to the PBS estimate was due to the slippage of CEA Technologies Phased Array Radar contract milestones \$0.3 into FY18/19.</p> <p>PAES - Final Plan: The variation of \$1.8m to the PAES estimate was due to the movement of the budget allocation for the FMS case to 20/21.</p>

Variance \$m	0.3	(1.8)	Total Variance (\$m): (1.5)
Variance %	6.5	(36.7)	Total Variance (%): (32.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	The final Ceamount Face Modification incorporation on HMAS ANZAC has slipped to financial year 19/20. The remaining variance is due to project expenses being less than forecast.
			Foreign Industry	
			Early Processes	
		(0.2)	Defence Processes	
			Foreign Government	
			Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
3.1	2.9	(0.2)	Total Variance	
		(6.5)	% Variance	

2.3 Details of Project Major Contracts

3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 2019 \$m			
BAE Systems Australia (First of Class)	Jul 05	2.1	63.9	Variable	Alliance	1, 2
Saab Australia Pty Ltd (First of Class)	Jul 05	3.1	78.8	Variable	Alliance	1
CEA Technologies (P3 Contract)	Dec 05	8.9	57.6	Variable	ASDEFCON	1
CEA Technologies (PAR Production)	Dec 08	16.0	191.6	Variable	ASDEFCON	1
BAE Systems Australia (Follow on Ships)	Jan 12	164.9	183.5	Variable	Alliance	1
Notes						
1	Contract value as at 30 Jun 2019 is based on actual expenditure to 30 Jun 2019 and remaining commitment at current exchange rates.					
2	Initially contracted to Tenix Defence prior to their sale to BAE Systems Australia in 2008.					
Contractor	Quantities as at		Scope		Notes	
	Signature	30 Jun 19				
BAE Systems Australia (First of Class)	0	2	Research and Development and Ship 1 system			
Saab Australia Pty Ltd (First of Class)	0	2	Research and Development and Ship 1 system.			
CEA Technologies (P3 Contract)	1	2	Phased array radar developmental systems		1	
CEA Technologies (PAR Production)	1	9	PAR Systems for Ship 1 - 8 and spare system		2	
BAE Systems Australia (Follow on Ships)	7	7	Ships 2-8 Installation			
Major equipment received and quantities to 30 Jun 19						
Installation has been completed for all ships.						
Notes						
1	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first PAR System.					
2	This is the production contract for the delivery of the first PAR System into HMAS Perth (lead ship). Following the approval of an RCI in November 2011, options were exercised to increase the scope to the remaining seven ships and spare system. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also included forward component buys.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Requirements Review)	Mar 06	N/A	May 06	2	1
	Mk3E Combat Management System – Stage 2 (Requirements Review)	N/A	N/A	Aug 09	N/A	1

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

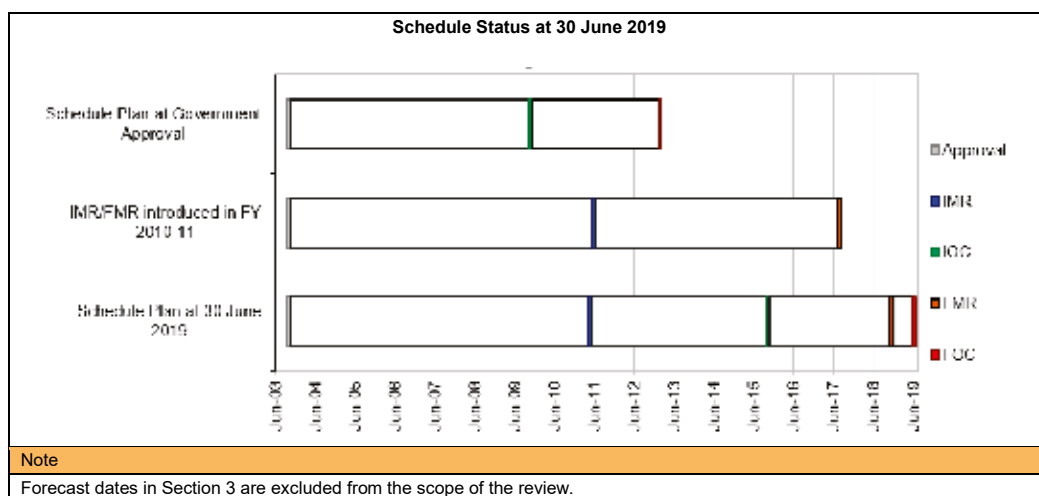
	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Functional Review)	Jun 06	N/A	Aug 06	2	1
Preliminary Design	Mk3E Combat Management System/Phased Array Radar Preliminary Design Review	Dec 06	N/A	Aug 07	8	1
	ASMD Shore Facilities (HMAS <i>Stirling</i>)	N/A	N/A	Aug 08	N/A	
Critical Design	Mk3E Combat Management System (Phased Array Radar integration) - Stage 1 Critical Design Review – Part 2	Dec 07	N/A	Aug 08	8	1
	Mk3E Combat Management System - Stage 2 Critical Design Review	Nov 10	Sep 11	Sep 11	10	2
	ASMD Shore Facilities (HMAS <i>Stirling</i>)	N/A	N/A	Dec 08	N/A	
	Phased Array Radar	Oct 07	N/A	Oct 07	0	
Notes						
1	Variance in design reviews is directly related to the change of acquisition strategy (movement from an eight ship program to a single ship program) or delay in initial contract award for phased array radar system.					
2	Variance in Stage 2 Critical Design Review (CDR) date was as a result of delays in finalising Defence's requirements in the Software update. This was completed in April 2011 with CDR appropriately rescheduled. There was no impact to final Stage 2 software release date.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS <i>Perth</i> with upgraded ASMD System (Mk3E Combat Management System/Phased Array Radar System/Navigation Radar System - Harbour Phase)	Dec 08	Aug 10	Aug 10	20	1
Acceptance (Initial Operational Capability)	HMAS <i>Perth</i> with upgraded ASMD System (Mk3E Combat Management System/Navigation Radar System)	Dec 09	Nov 13	Sep 15	69	2
Notes						
1	Variance in both the test readiness review and acceptance of the first upgraded ASMD ship is directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program.					
2	Initially the variance in the acceptance of the first upgraded ASMD ship was directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program. As part of the RCI process it was agreed by Navy, the then Capability Development Group and the then Defence Materiel Organisation to move IOC until after PAR had been proven against Supersonic Targets. IOC documentation was submitted to Navy in July 2014 and Capability Manager endorsement of IOC was achieved in September 2015.					

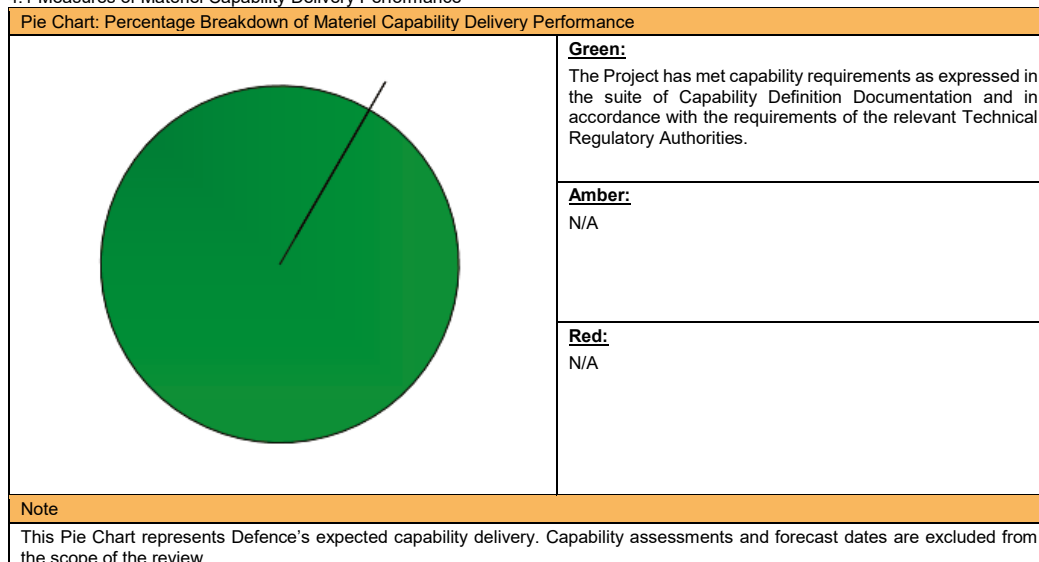
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Jun 11	N/A	
Initial Operational Capability (IOC)	Dec 09	Sep 15	69	1
Final Materiel Release (FMR)	Jul 17	Nov 18	16	2
Final Operational Capability (FOC)	Mar 13	Jun 19	75	3
Notes				
1	Variance was directly linked to updated Materiel Acquisition Agreement which moved IOC until after Phased Array Radar System had been proven against Supersonic Targets.			
2	Variance is directly linked to the change of acquisition strategy - moving from a one plus seven ship program to an eight ship program and to remediation of Navigation Radar support deficiencies. Delay from previous expected FMR date of Aug 18 to Nov 18 was due to a combination of staffing issues and the need to fully understand the recommendation of the Nav Radar Report received at the end of August			
3	Variance is directly linked to the change of acquisition strategy - moving from a one plus seven ship program to an eight ship program and to remediation of Navigation Radar support deficiencies. Delay from the achievement of FMR was driven by administrative delays. This project was the first to undertake a new process of regulation and assurance with Navy, required to achieve FOC.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Provisional acceptance of the ASMD upgraded HMAS Perth.	Achieved
Initial Operational Capability (IOC)	The delivery of self-defence capability against modern Anti-Ship Missiles for the first ship, HMAS Perth, including all ILS requirements (spares, training and supportability).	Achieved
Final Materiel Release (FMR)	FMR represents acceptance of all ASMD upgraded ships and associated supplies and was achieved in Nov 2018.	Achieved
Final Operational Capability (FOC)	The delivery of the complete ANZAC self-defence capability against modern Anti-Ship Missiles including all ILS and supportability requirements to sustain the weapon and support system through life. FOC was achieved on 18 June 2019	Achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

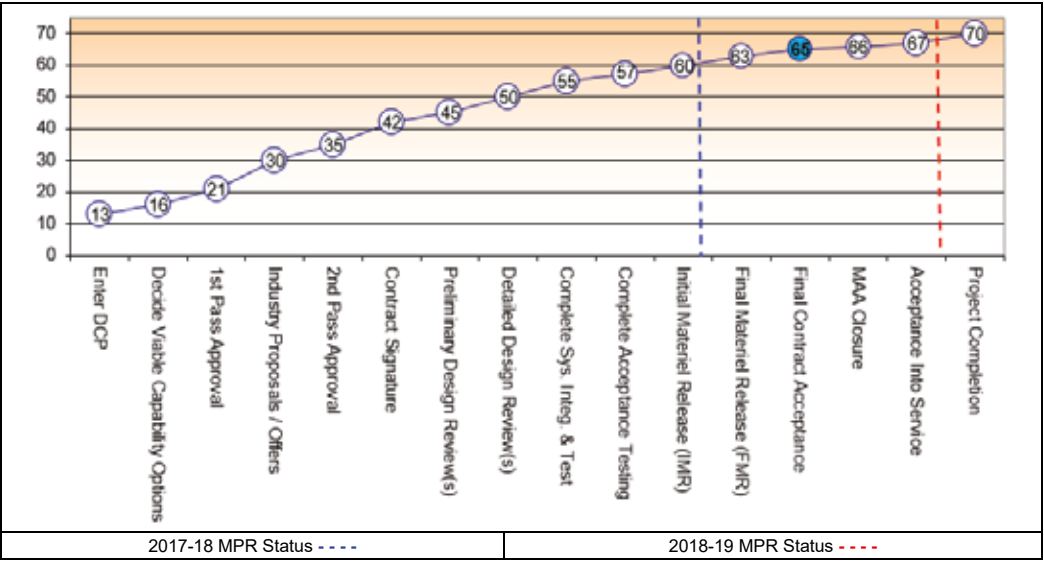
5.2 Major Project Issues

Description	Remedial Action
Inability to resource the ASMD Project correctly (includes availability, conflicts, personnel, training and quality (Commonwealth, CEA, ANZAC IMS, Industry, Test and Trials).	The resource allocation was adequate to achieve FOC in June 2019. This issue has therefore been retired
MAA closure is delayed as activities have not been planned and costed	Issue remains active as timeline for MAA closure is reliant on aspects out of the control of SEA1448 ie FMS case closure.
Obsolescence of Kelvin Hughes Navigation Radar necessitates replacement before specified date	Navigation Radar report was delivered Aug 18. Navy have agreed that this completes the project's obligations for radar remediation. Further resolution of this issue has been transferred to the yet to be approved SEA 5014 project and the Sustainment Organisation
Project is unable to use unallocated budget or contingency to remediate project deficiencies.	Navy has accepted the consequences for project remediation of these funds not being available when requested. FMR was claimed and accepted on this basis. This has been retired.
Budgeted Cost Model (BCM) and Assets under construction are not correctly maintained and rolled out	Radar Test Sets were received in July 2018 and were receipted into the stores system for issue to ships. Final CoA assets (3 items) held by BAe were returned to Naval Stores in August 2018. This has been retired.
Demineralised Cooling Water System causes failure or limits operation of CEAFAAR and/or SPS-49	The FMR declaration in November 2018 that this issue would be remediated by the SEA 1448 Phase 4B project which will redesign the mast where this issue occurs. This issue has been transferred to that project
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	9	9	9	9	65
Final Contract Acceptance	Project Status	10	9	10	10	10	9	10	68
	Explanation	<ul style="list-style-type: none"> Technical Difficulty: Successful OT&E completed in August 2013 and 5 years of in-service experience confirms the design meets operational requirements. Technical Understanding: 5 years of operation have shown a full understanding from Navy of the capability required Operations and Support: This project has demonstrated over the last 5 years of in-service operation that it is fully capable of being sustained in – service and has met all operational requirements in use. 							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that technically complex developmental projects that have high levels of risk as part of the new system or integration of the new system into existing systems, demands that a prototype (lead platform) be agreed up-front and used for proving the capability before agreeing to additional platforms.	First of Type Equipment
Adequate communication between, and engagement of, critical stakeholders to ensure that a common understanding of Project status is maintained.	Governance
Project budgets must be managed to avoid adverse impacts of program level changes to budget management practices.	Governance
Seaworthiness policy changed the role of Regulators in the reviewing of the TI-338. Need to engage early with Policy and Procedure Owner to establish what 'assurance' is required and authorised	Governance

Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 2019

Position	Name
Division Head	RADM Wendy Malcolm
Branch Head	CDRE Rob Elliott, RAN
Project Director/Manager	CMDR Mark Whitehouse, RAN

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁵⁶

Project Number	SEA 1439 Phase 5B2
Project Name	COLLINS CLASS COMMUNICATIONS AND ELECTRONIC WARFARE IMPROVEMENT PROGRAM
First Year Reported in the MPR	2018-19
Capability Type	Upgrade
Acquisition Type	MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Jun 08
Government 2nd Pass Approval	Stage 1 - June 15 Stage 2 - March 17
Budget at 2 nd Pass Approval	\$599.1m
Total Approved Budget (Current)	\$607.8m
2018–19 Budget	\$76.8m
Project Stage	Integration and Test
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA 1439 Phase 5B2 is a multiple Second Pass that seeks to deliver a modernised submarine communications system and upgrade Electronic Support measures on the Collins Class submarines. These enhancements will be broadly delivered in two stages.

Modern Submarine Communications System (MSMCS) Stage 1 replaces obsolete Communications Centre (COMCEN) equipment on-board six Collins Class Submarines. MSMCS Stage 1 upgrade will provide the submarines with improved performance, reliability and interoperability with other components of the Australian Defence Force and allied nations. MSMCS Stage 2 will deliver urgent communications systems upgrade including satellite communications that will deliver a submarine internet protocol capability with supporting applications that will significantly reduce operator workloads and improve system management.

Funded under Stage 1, but as a standalone capability, Microwave Electronic Support (MWES) system will enable submarines to improve their ability to detect, identify, and localise intercepted signals. This will be installed independently and in parallel with Stage 1 and 2.

1.2 Current Status

Cost PerformanceIn-year

As at 30 June 2019, financial year 2018-19 expenditure is \$63.8m against the forecast budget of \$76.8m. The variation is mainly due to invoices with baseline dates prior to the 30th of May not being released for payment before the end of financial year.

Project Financial Assurance Statement

As at 30 June 2019, Project SEA 1439 Phase 5B2 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

SEA 1439 Phase 5B2 Stage 1 is currently experiencing slippage from MAA Initial Materiel Release (IMR) date due to delays in obtaining objective quality evidence from relevant stakeholders to support an IMR claim. However, the acceleration of Stage 1 installation on a 2nd platform has been brought forward from a Full Cycle Docking to an earlier Mid Cycle Docking allowing the Material Release to be scheduled for an earlier completion date.

156 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

SEA 1439 Phase 5B2 Microwave Electronic Support (MWES) system – significant schedule slippage has occurred from Government 2 nd pass approval due to difficulties engaging with subcontractors in the early phases of the project. Contractors have now been engaged and tracking to the schedule re-baselined at the 2017 Government 2 nd pass approval for Stage 2.
SEA 1439 Phase 5B2 Stage 2 is currently on track for Material Release in accordance with the 2017 Government 2 nd pass approval. However, due to external factors, material deficiencies will exist at initial implementation regarding elements of Wide Band Satellite, and potentially the Submarine Local Area Network. Both risks are well known and are being actively managed.
Material Capability Delivery Performance
Implementation of Stage 1 has been completed on two platforms which are now in service with the Stage 1 equipment. The project has worked with the contractor to accelerate installation of Stage 1 equipment where possible, including installing the equipment during an earlier Mid Cycle Docking on one platform. The project has delivered Stage 1 training system, with IMR forecast to be achieved in late 2019. MWES First of Class is currently underway and MSMCS Stage 1 is currently being implemented on a further two platforms, while Stage 2 First of Class is nearing completion.
Note
Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context
Background
<p>In December 2004, Defence initiated investigations into potential capability enhancements on Collins Class Submarines. During these investigations, potential obsolescence issues were also raised regarding equipment with the Collins Class Communication Centre. Capability managers along with other relevant parties within Defence developed a number of proposals to address the long term capability requirements of the Collins Class. These issues would be addressed through SEA 1439 Phase 5B, with the scope, phases and preferred approach changing several times prior to Government second pass approval.</p> <p>In November 2013 Defence confirmed the project scope and agreed a two stage approach to Government.</p> <ol style="list-style-type: none"> 1. Modernised Submarine Communications System (MSMCS) Stage 1 involves the update of obsolete Communications Centre equipment on-board the Collins Class with a military off-the-shelf solution. Stage 1 achieved Second Pass Approval in June 2015 and is currently being implemented across all six platforms and at the Integrated Test and Training Site (ITTS). 2. MSMCS Stage 2 involves the delivery of capability enhancements including the introduction of satellite communications enabling vastly improved data transmission/receive rates in a tactical environment, enhanced networks, and associated ICT infrastructure. Stage 2 received Gate Two approval by Government in March 2017. Stage 2 includes the following capability enhancements across all six platforms and at the ITTS: <ol style="list-style-type: none"> a. Wideband Satellite Communications system; b. Classified Local Area Networks to distribute information outside the Communication Centre, referred to as the Submarine Local Area Network Environment; c. Network infrastructure to allow multiple classified Local Area Networks (LANs) to access the same IP-enabled Radio Frequency bearer system; and d. Tools and Applications to effectively and efficiently manage the information flows between the shore communication centres and the submarines, referred to as Submarine Communication Information Exchange Management. <p>The MWES system will detect, identify, and localise intercepted signals. The MWES capability enhancement will maximise commonality between the Collins class submarines and the wider RAN fleet. Funded under Stage 1, but as a standalone capability, MWES will be installed independently and in parallel with Stage 1 and 2, in a flexible manner so as to achieve the best suited boat at the time of materiel availability.</p>
Uniqueness
<p>SEA 1439 Phase 5B2 Stage 1 addresses the obsolescence issues of the legacy maritime communications capability of the Collins Class submarines, and enhances the electronic support based on modernised architectures and standardised systems. The new and upgraded capability will enable new levels of operability and interoperability never before seen on Collins Class submarines.</p> <p>For implementation of Stage 2, the majority of supplies being Government Furnished Material. The project has engaged Raytheon Australia as Prime System Integrator to implement MSMCS Stage 2. The Submarine Local Area Network and the Submarine Communication Information Exchange Management elements of Stage 2 are being supplied by the Defence Chief Information Officer Group with the funding for the development and delivery of these systems handed directly to Defence upon Government Second Pass Approval for Stage 2.</p> <p>The other major component of Stage 2 is the Wideband Satellite Communications component which is supplied under a U.S. Government Foreign Military Sale case.</p>
Major Risks and Issues
<p>The project is currently managing a number of risks and issues including:</p> <p>There is a chance of Submarine Local Area Network slippage impacting on SEA 1439 Phase 5B2 MAA milestones due to stakeholder engagement and the complexity of the required capability, and challenges in achieving software security accreditation.</p> <p>There will be late delivery of the SEA 1442 Phase 6 Wideband Satellite ground station First of Type installation creating an issue of sovereign capability due to satellite access.</p>
Other Current Related Projects / Phases
<p>Navy Minor Project 1941 will deliver an Information Screening and Delivery System (ISDS), and a Military Message system across a number of CCSMs. The ISDS has now been integrated into the SEA 1439 Phase 5B2 project and has been implemented on HMAS <i>Dechaineux</i>, HMAS <i>Farncomb</i> and Submarine Communication Centre West.</p>

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

SEA 1442 Phase 6 provides WBS Ground and Space segment, as well as planning and land based infrastructure required to operate the system. The equivalent submarine segment is provided by SEA 1439 Phase 5B2 Stage 2
SEA 1439 Phase 5B2 is also related but not dependent on other projects within the SEA 1439 program, a full list of these can be found in the SEA 1439 Phase 3 - Collins Reliability & Sustainability project.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Jun 08	Original Approved	4.1	1
Apr 10	Real Variation – Scope	1.4	1
Sep 12	Real Variation – Scope	1.6	1
Feb 15	Government 1st Pass Approval - Stage 1	36.7	2
Jun 15	Government 2nd Pass Approval - Stage 1	203.9	3
May 17	Government 2nd Pass Approval - Stage 2	351.4	4
	Total at Second Pass Approval	599.1	
Jul 10	Price Indexation	0.4	5
Jun 19	Exchange Variation	8.3	
Jun 19	Total Budget	607.8	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure - Raytheon Australia	(117.7)	6
	Contract Expenditure – ASC Pty Ltd	(20.3)	6
	Contract Expenditure – Jenkins Engineering Defence (JEDS)	(14.6)	6
	Contract Expenditure – Foreign Military Sales (AT-P-LFQ)	(17.1)	7
	Other Contract Payment/Internal Expenses	(17.1)	8
		(186.8)	
FY to Jun 19	Contract Expenditure - Raytheon Australia	(23.6)	6
	Contract Expenditure – ASC Pty Ltd	(10.8)	6
	Contract Expenditure – Jenkins Engineering Defence (JEDS)	(9.3)	6
	Contract Expenditure – Foreign Military Sales (AT-P-LFQ)	(16.2)	7
	Other Contract Payments/Internal Expenses	(3.9)	8
		(63.8)	
Jun 19	Total Expenditure	(250.6)	
Jun 19	Remaining Budget	357.2	
Notes			
1	Original approved funding was for development of the Functional Performance Specifications for the future implementation of SEA1439 Phase 5B2 to provide High Data Rate Communications fit for CCSMs		
2	Government approved SEA1439 Phase 5B2 Stage 1 funding for risk reduction funding for the development of the design of 5B2		
3	Government approved SEA1439 Phase 5B2 MSMCS Stage 1 to provide a solution to address COMCEN obsolescence issues		
4	Government approved SEA1439 Phase 5B2-A MSMCS Stage 2 for WBS and SUBLANE implementation. There was no Government First Pass Approval for Stage 2 as this capability enhancement of stage 1		
5	Up until July 10, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.4m		
6	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
7	US Govt. supply (FMS Case) for Wide Band Satellite		
8	Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
69.9	77.8	76.8	PBS - PAES: Due to changes in the FMS Case (AT-P-LFQ) delivery schedule. This was driven by immaturity of original FMS Case delivery schedule. PAES - Final Plan: Due to minor contractual commencement delays that will be addressed in the next Financial Year.

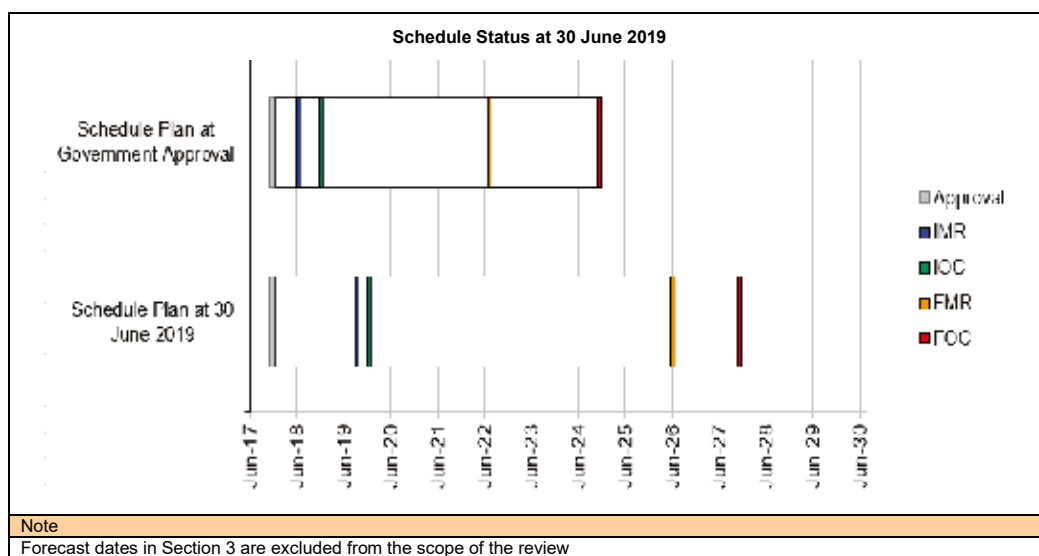
	Stage 2	May 18	Jun 18	May 18	0	
Notes						
1	Microwave Electronic Support (MWES) Function and Performance Specification had taken longer than expected to finalise. Detailed Design Review completed 8 May 2019. Six major items outstanding and expected to be finalised by Nov 2019.					
2	Variance is due to delays in processing and acceptance of documentation delivered by the contractor.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	MSMCS Stage 1	May 17	Jun 17	Jul 17	2	1, 4
	MSMCS MWES	May 18	Nov 19	Nov 19	18	2, 5
	MSMCS Stage 2	Jun 19	Jul 19	Jul 19	1	1, 6
Acceptance	MSMCS Stage 1	Jun 24	Apr 18	Jan 18	(77)	7
	MSMCS MWES	Jul 19	N/A	Dec 19	5	2, 5
	MWMCS Stage 2	Jun 20	N/A	Jun 20	0	3, 6
Notes						
1	MSMCS Stage 1 & Stage 2 System Integration is based on completion of CAT 3 Testing by the Prime System Integrator (PSI) in accordance with completion milestones within the PSI contract and the Test and Evaluation Master Plan (TEMP).					
2	MSMCS MEWS System Integration is based on First of Type (FOT) Set-to-Work (STW). System acceptance is based on completion of successful FOT Harbour Acceptance Trial completion.					
3	MSMCS Stage 1 & Stage 2 Acceptance is based on the Commonwealths acceptance of the completion of CAT 4 testing in accordance with completion milestones within the PSI contract and the Test and Evaluation Master Plan (TEMP).					
4	Variance is due to delays in processing and acceptance of documentation delivered by the contractor.					
5	MSMCS MWES had failed to successfully progress due to continually changing procurement strategies and an immature Function and Performance Specification (FPS). This has now been resolved with imminent implementation on platforms.					
6	Implementation schedule understanding has matured since the MAA was developed.					
7	System acceptance achieved 6 months early due to the acceleration of the MSMCS Stage 1 installation with platform 2 installation brought forward 77 months from a Full Cycle Docking to an earlier Mid Cycle Docking.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

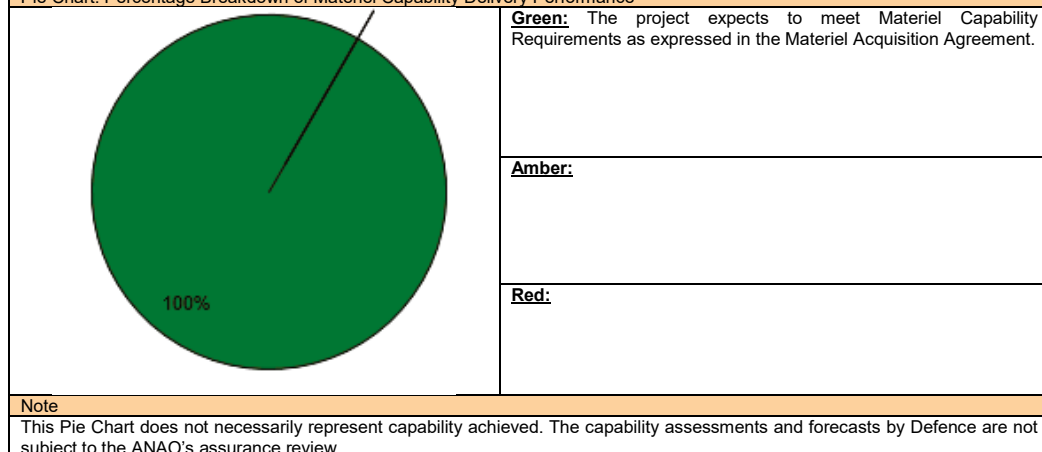
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Platform 1 Initial Materiel Release (IMR) (Stage 1)	Jul 18	Oct 19	15	1, 2
Platform 1 IOC (Stage 1)	Dec 18	Dec 19	12	1, 2
Platform 2 MR 2 (Stage 1)	Dec 19	Oct 19	(2)	1, 3
Platform 3 MR 3 (Stage 1)	Jul 20	May 20	(2)	1, 3
MR 4 (MWES Initial Capability Delivery)	Feb 18	Dec 20	34	1, 4
Platform 4 MR 5 (Stage 1 and IMR for Stage 2)	Dec 21	Dec 20	(12)	1, 3
Platform 4 IOC (Stage 2)	Jun 21	Jun 21	0	1
Platform 5 MR 6 (Stage 1 & 2)	Dec 21	Dec 21	0	1
Platform 6 MR 7 (Stage 1 and Stage 2)	Jul 22	Jul 22	0	1
Platform 6 MR 8 (MWES Final Capability Delivery)	Jun 19	Dec 22	42	1, 4
Platform 1 MR 9 (Stage 2 only)	Dec 23	Dec 23	0	1
Platform 2 MR 10 (Stage 2 only)	Jun 24	Jun 24	0	1
FMR Platform 3 (Stage 2 only)	Jul 22	Jun 26	47	1, 5
FOC (Stage 1 & 2, and MWES)	Dec 24	Dec 27	36	1, 5
Notes				
1	Original Planned dates for Stage 1 and Microwave Electronic Support (MWES) are in accordance with Revision 2.0 of the Materiel Acquisition Agreement (MAA). Original planned dates for Stage 2 are in accordance with Revision 3.0 of the MAA.			
2	IMR and IOC for Stage 1 are currently expected to be achieved later than forecast due to delays in acceptance of configuration documentation and publication approvals.			
3	Implementation of Stage 1 has been completed on two platforms which are now in service with the Stage 1 equipment. The project has worked with the contractor to accelerate installation of Stage 1 equipment where possible, including installing the equipment during an earlier Mid Cycle Docking on one platform. The project has delivered Stage 1 training system, with IMR forecast to be achieved in late 2019.			
4	MSMCS Microwave Electronic Support had failed to successfully progress due to continually changing procurement strategies and an immature Function and Performance Specification. This has now been resolved with imminent implementation on platforms.			
5	Original FMR and FOC was for Stage 1 and the Microwave Electronic Support element. Current forecast date now includes Stage 2.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<p>Modification of one platform and the Integrated Test and Training Site with stage 1 including:</p> <ul style="list-style-type: none"> • verification & validation and certification completed in accordance with approved plans; • Training system delivered along with initial crew and trainer training; and • Spares and support arrangements in place. IMR report endorsed and released for approval by the regulatory authority. <p>IMR is expected to be achieved in October 2019.</p>	Not yet achieved
Initial Operational Capability (IOC)	Operationally employ Collins Electronic Warfare Stage 1 and Stage 2 on one platform and associated Fundamental Inputs to Capability such as crew training and Integrated Logistics Support.	Not yet achieved

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	Stage 1 IOC is expected to be achieved in December 2019.	
Final Materiel Release (FMR)	Stage 1, 2 and the Microwave Electronic Support elements installed on six platforms and one Integrated Test and Training Site. Support arrangements including Materiel Transition Plans, spares, training and other Integrated Logistics Support requirements required to transition the materiel system into operational services and sustainment. FMR is expected to be achieved in June 2026.	Not yet achieved
Final Operational Capability (FOC)	Operationally employ Collins EW Stage 1, 2 and MWES in six platforms, the ITTS and associated Fundamental Inputs to Capability such as crew training and Integrated Logistics Support. FOC is expected to be achieved in December 2027.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance of Submarine Local Area Network Environment slippage impacting on 5B2 MAA milestones due to stakeholder engagement and the complexity of the required capability.	1. Ongoing Integrated Project Team meetings gives stakeholders the ability to engage directly and improve visibility of risks and mitigate as they arise. 2. The Submarine Local Area Network Environment installed at Raytheon Test Facility to allow testing to mitigate risk. Project is monitoring test results and progress. Risk has been escalated to Defence's Submarine Group Project Delivery Board.
Software security accreditation cannot be achieved due to limited or nil resources with stakeholders to support project related software.	Short term mitigation is identification of industry support options to provide licence and patch support and deployment. Long term mitigation is identification of enterprise (Navy) support agent, ideally providing resources, including cleared personnel to relevant Defence Groups as the fleet ICT support organisation. Risk has been escalated to Defence's Submarine Group Project Delivery Board.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

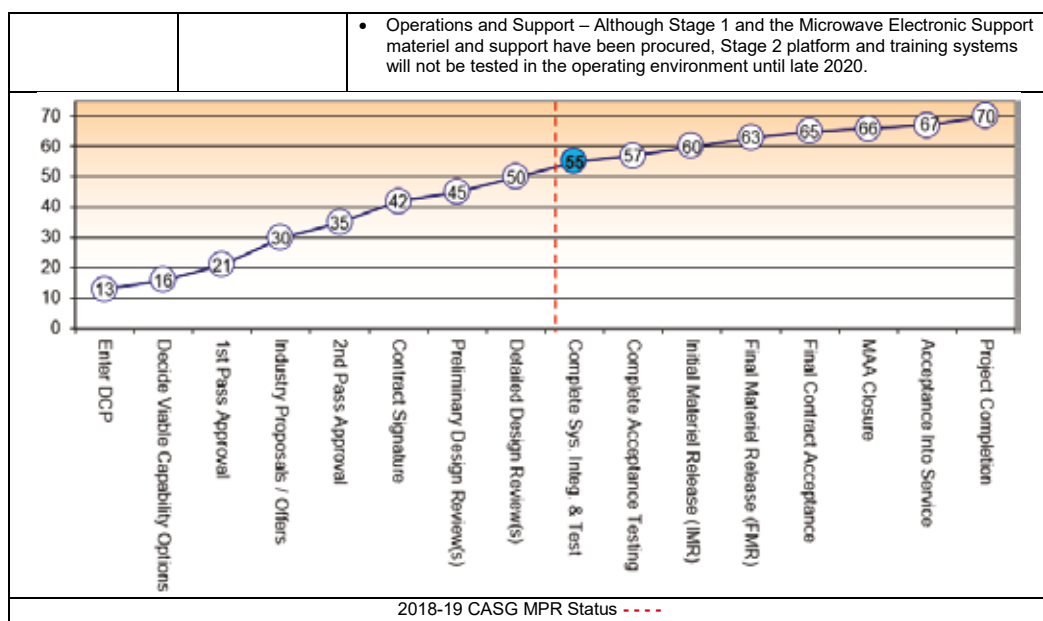
5.2 Major Project Issues

Description	Remedial Action
Late delivery of SEA 1442 Phase 6 Wideband Satellite ground station First of Type installation has created an issue of sovereign capability due to satellite access. Delivery is expected to take approximately 2 years from May 19 when the supplier was contracted to resolve the supply issue.	At completion of First of Type platform installation SEA 1439 Phase 5B2 will issue an interim test and evaluation report (TI338) with a deficiency against delivery of Wideband Satellite capability. An update will be provided once SEA1442 Phase 6 is operational and System Operation and Verification Testing can take place.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Integration and Test	Project Status	8	8	8	7	8	8	7	54
	Explanation	<ul style="list-style-type: none"> Cost – The project is maturing and the majority of work in contract, design work nearing completion and all materials procured for Stage 1. Due to this the cost estimate at completion can be forecast with confidence. The project budget is considered adequate to cover remaining work including known risks. Technical Understanding – Although technical understanding for Stage 1 and the Microwave Electronic Support element meets the benchmark score, Stage 2 is still progressing through system integration. 							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Industry being made aware of schedule deadlines through tender document and Commonwealth consider including schedule float.	Contract Management
Early engagement with stakeholders to finalise Configuration Change Proposals / Concessions about scope is critical to ensure the deliverables will be sufficient.	First of Type Equipment
Tender documents and contracts must identify contractor's key personnel for specialist task, e.g. telecommunications engineers / technicians.	First of Type Equipment
Regular detailed and customised reporting addressed directly to stakeholders ensures that information is received in high visibility projects or fast tracked schedules where there is no float. This is crucial to ensure all stakeholders are engaged and supportive. Stakeholder engagement through regular detailed and customised reporting will ensure stakeholders are engaged and supportive.	Schedule Management
Ensure Project and relevant stakeholders including freight organisations have clear lines of communications regarding movements of classified items.	Governance

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 19

Position	Name
Division Head	RADM Gregory Sammut (Acting)
Branch Head	CDRE Richard Fitzgerald
Project Director	Mr Anthony Hodson
Project Manager	Mr Dewa Gounder

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁵⁷

Project Number	SEA 3036 Phase 1
Project Name	Pacific Patrol Boat Replacement (PPB-R)
First Year Reported in the MPR	2017-18
Capability Type	Replacement
Acquisition Type	COTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Apr 16
Government 2nd Pass Approval	Apr 16
Budget at 2 nd Pass Approval	\$504.5m
Total Approved Budget (Current)	\$504.0m
2018-19 Budget	\$70.0m
Project Stage	Initial Materiel Release
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA 3036 Phase 1 – Pacific Patrol Boat Replacement **is acquiring** 21 vessels to replace the existing 22 Pacific Patrol Boats (PPBs) gifted to 12 Pacific Island Countries between 1987 and 1997 and two boats for Timor-Leste; as part of Australia's Pacific Maritime Security Program. The project also includes disposal of the current PPB fleet and minor upgrades to Pacific Island infrastructure to enable safe berthing of the new Guardian Class Patrol Boats (GCPBs).

1.2 Current Status

Cost Performance

In-year

As at **30 June 2019**, the project has an **underspend** of \$8.1m against the year's budget. This is due primarily to **the early payment of the launch milestone for the first vessel, deferred expenditure on Pacific Island Infrastructure and deferred expenditure regarding disposal of existing Pacific Patrol Boats.**

Project Financial Assurance Statement

As at **30 June 2019** the project has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

The project has progressed through the Design phases **and is now within the delivery phase. The first three vessels were delivered to their respective recipient nations, with Vessel 1 to Papua New Guinea on 30 November 2018, Vessel 2 to Tuvalu on 5 April 2019 and Vessel 3 to Tonga on 21 June 2019 in Henderson, Western Australia. Vessel 4 was launched on 13 May 2019 and is to be delivered to the nation of Samoa in August 2019. Subsequent vessels are to be delivered and gifted at a rate of one every three to four months through to the last vessel delivery scheduled for late 2023.**

To date the prime contractor key milestones have been met in alignment with the contract schedule, **with the exception to this being delivery of the first vessel which was approximately 5 weeks later than contracted as a result of delays in establishing a steel production facility, vessel production activities and the resolution of first of class issues. This delay incurred a corresponding delay to achievement of IMR/IOC which was achieved on 30 November 2018. All other expected delivery windows specified within the Project Materiel Acquisition Agreement (MAA) and Government project approval have been met. Aspects of the project involving Pacific Island Country Infrastructure upgrades and disposal of the existing Pacific Patrol**

157 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Boats are also progressing in alignment with project needs, with minor delays evident with establishment of associated contracts and finalisation of works.
Materiel Capability Delivery Performance The first vessel was delivered in November 2018. The second and third vessels were delivered in April 2019 and June 2019 respectively. The project is on track to deliver the remaining vessels and achieve Final Materiel Release in 2023.
Note
Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

SEA 3036 Phase 1, Pacific Patrol Boat Replacement Project was initiated in 2014 to replace the 22 Pacific Patrol Boats (PPB) that were gifted to 12 Pacific Island Countries (PIC) between 1987 and 1997 under the auspices of the Pacific Maritime Security Program (PMSP). The project was mandated to deliver a new single class of vessel, built to contemporary regulatory standards of steel hulled construction, able to operate year round and enable basic local maintenance and repair in each nation.

The participating nations are Palau, Federated States of Micronesia (FSM), Republic of Marshall Islands (RMI), Papua New Guinea (PNG), Solomon Islands, Kiribati, Tuvalu, Vanuatu, Fiji, Tonga, Samoa and Cook Islands. The Project will build and deliver 21 PPB Replacement (PPB-R) vessels for 13 nations. The 13th nation is Timor-Leste that was not part of the original PPB Program but was offered two (2) PPB-R vessels by the Australian Government.

The PMSP aims to enhance practical cooperation across the South Pacific and build on the success of the PPB Program by broadening and strengthening the regions' capability to respond to issues such as maritime security, fisheries protection and transnational crime. Along with the PPB-R the PMSP will enhance cooperation through support to regional coordination centres and the provision of integrated aerial surveillance.

A Request for Tender was released in March 2015 for up to 21 PPB-R vessels no longer than 40 metres, built to a Commercial Standard with a steel hull. Similar to the current PPBs, the new vessels were to be easy to operate and maintain. The tender also included a support contract for an initial period of 7 years. The tender closed in June 2015, evaluations were completed in September 2015 with an Offer Definition and Improvement Activity concluded in January 2016. Austal Ships Pty Ltd was the preferred tenderer.

Combined Pass Project Approval was achieved in April 2016. Both the Acquisition and Support Contracts were signed with Austal Ships Pty Ltd in May 2016. The initial Acquisition Contract was for 19 vessels with a costed option for an additional two (2) PPB-R vessels, as Timor-Leste had not accepted the offer of two (2) vessels at contract signature. In December 2017, Timor-Leste accepted the offer and the Project Office exercised the costed option, through the execution of a contract change in April 2018.

Construction of the first vessel commenced in April 2017 with launch conducted ahead of schedule in May 2018 and Acceptance by the Commonwealth (combined Initial Materiel Release and Initial Operational Capability) in **November** 2018. Final Materiel Release/Final Operational Capability will be achieved when the last vessel is accepted by the Commonwealth currently planned for October 2023.

Due to a delay in the acceptance and handover of the first boat of approximately five weeks, caused by the establishment of a dedicated steel production facility and resolution of first of Class Issues, Liquidated Damages have been accrued. Agreement has also been reached on provision of goods and services in kind to the Commonwealth in alignment with the value of Liquidated Damages accrued.

In addition, infrastructure upgrades necessary to enable safe and secure berthing of the new vessels are required for all nations receiving the PPB-R vessels. The project is scoped and funded to complete minor infrastructure upgrades to existing infrastructure and major upgrades (inclusive of Timor-Leste upgrades) are to be funded as part of Defence's international engagement through the Defence Cooperation Program.

The first two infrastructure contracts jointly funded (joint scope) by the project and the DCP have been awarded and works are underway. The first contract for delivery of upgrades in PNG was established in September 2018 and the second contract for delivery of upgrades in Tuvalu, Tonga, Samoa, Fiji, Kiribati, Cook Islands and Vanuatu was established in February 2019.

Uniqueness

The PPB-R is a vessel being built to commercial standards that will be gifted to 13 nations. The vessel is being built to International Maritime Orders (IMO) requirements, under the Australian Maritime Safety Authority (AMSA) flag. Lloyds Register is the classification society and the vessel will meet class requirements. However, ultimately the PPB-R will not be put into class. The Project's Capability Manager is Navy with International Policy as the Sponsor of the PPB-R Project and the Pacific Maritime Surveillance Program. Once gifted, each vessel will become a sovereign asset of the recipient nations.

Major Risks and Issues

The Project has identified a small number of high risks that relate to infrastructure schedule requirements and disposal requirements. **Two previously reported risks associated with Configuration Management and a lack of suitably qualified personnel were downgraded from High to Medium following the Acceptance of Boat 01.** There are currently **three** Pacific Maritime Surveillance Program (PMSP) Program-level issues, which relate to the scope of program infrastructure upgrade work exceeding the allocated Project funding, **infrastructure works not being completed in time for the first vessel arrival into Papua New Guinea (PNG) and a Tongan PPB requiring assistance to return to Australia.**

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Other Current Related Projects/Phases
N/A
Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Aug 14	Original Approved	5.7	1
Jan 15	Real Variation – Transfer	1.2	2
May 16	Government Combined Pass Approval	497.6	
	Total at Second Pass Approval	504.5	
Jun 19	Exchange Variation	(0.5)	
Jun 19	Total Budget	504.0	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Austal	(42.1)	
	Other Contract Payments/Internal Expenses	(8.3)	3
		(50.4)	
FY to Jun 19	Contract Expenditure – Austal	(55.1)	
	Other Contract Payments/Internal Expenses	(6.8)	4
		(61.9)	
Jun 19	Total Expenditure	(112.3)	
Jun 19	Remaining Budget	391.7	
Notes			
1	This amount was for Initial Pass Project Approval.		
2	Transfer of funding to Defence Materiel Organisation, now known as Capability Acquisition and Sustainment Group, to support Offer Definition Improvement Activity and Anthropometric Study.		
3	Other contract payments and expenditure comprises of Pre Combined Pass expenditure (\$3.5m) and other project support contracted staff costs (\$3.8m), infrastructure costs (\$0.5m) and other direct project costs (\$0.5m).		
4	Other contract payments and expenditure includes infrastructure costs of (3.2m), project support contracted staff costs of (\$2.6m) and other direct project costs of (\$1.0m).		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
71.9	70.9	70.0	PBS – PAES: The decrease from \$71.9 to \$70.9m was primarily associated with the early achievement in 17/18 for the launch of the first boat. PAES – Final Plan: \$0.9m. The decrease from \$70.9 to \$70.0 was primarily associated with deferred spending on contractor support and additional equipment / consumables.
Variance \$m	(1.0)	(0.9)	Total Variance (\$m): (1.9)
Variance %	(1.4)	(1.3)	Total Variance (%): (2.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(8.1)	Australian Industry	The variance is primarily due to early payment of the milestone for launch of the first vessel and deferred infrastructure and disposals costs.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
70.0	61.9	(8.1)	Total Variance	
		(11.6)	% Variance	

2.3 Details of Project Major Contracts

Details of Project Major Contracts								
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes		
		Signature \$m	30 Jun 19 \$m					
Austal Ships Pty Ltd	May 16	321.1	362.6	Fixed	ASDEFCON (Complex)	1		
Notes								
1	Contract Value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).							
Contractor	Quantities as at		Scope			Notes		
	Signature	30 Jun 19						
Austal Ships Pty Ltd	19	21	PPB-R vessels, conversion training and associated support system products.			1		
Major equipment received and quantities to 30 Jun 19								
One Guardian class Patrol Boat gifted to Papua New Guinea.								
One Guardian class Patrol Boat gifted to Tuvalu.								
One Guardian class Patrol Boat gifted to Tonga.								
Notes								
1	Two additional PPB-R vessels were included into the scope of supply in April 2018 following acceptance in December 2017 by the Timor-Leste Government of the offer from the Australian Government to receive two boats.							

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirement Conduct	Mission System	Aug 16	N/A	Aug 16	0	
	Support System	N/A	Nov 16	Nov 16	0	1
Preliminary Designs Conduct	Mission System	Oct 16	N/A	Oct 16	0	
	Support System	N/A	May 17	May 17	0	1
Detailed Design Conduct	Mission System	Feb 17	N/A	Feb 17	0	
	Support System	N/A	Nov 17	Nov 17	0	1
Notes						
1	A contract change was executed in November 2016 to introduce the conduct of Support System System Requirement Review, Support System Preliminary Design Review and Support System Detailed Design Review.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Harbour Acceptance Trials (HATs) Complete	PPBR Boat 1	Jul 18	N/A	Oct 18	3	1
	PPBR Boat 2-5	Aug 19	N/A	Sep 19	1	
	PPBR Boat 6-9	Aug 20	N/A	Aug 20	0	
	PPBR Boat 10-13	Aug 21	N/A	Aug 21	0	
	PPBR Boat 14-18	Oct 22	N/A	Oct 22	0	
	PPBR Boat 19-21	Jul 23	N/A	Jul 23	0	
Acceptance	PPBR Boat 1	Oct 18	N/A	Nov 18	1	1,2,3
	PPBR Boat 2-5	Nov 19	N/A	Nov 19	0	3
	PPBR Boat 6-9	Nov 20	N/A	Oct 20	(1)	3
	PPBR Boat 10-13	Oct 21	N/A	Oct 21	0	3
	PPBR Boat 14-18	Dec 22	N/A	Dec 22	0	3
	PPBR Boat 19-21	Oct 23	N/A	Sep 23	(1)	2
Notes						
1	The variance of three months is primarily due to equipment supply chain delays and first of class issues with set-to-work activities.					
2	Testing of Boat 1 includes operation-like test activities in advance of Acceptance of Boat 1.					
3	Acceptance marks the successful completion of all tests and crew conversion training. The Commonwealth accepts the vessel from the contractor and then gifts the vessel to the receiving nation.					

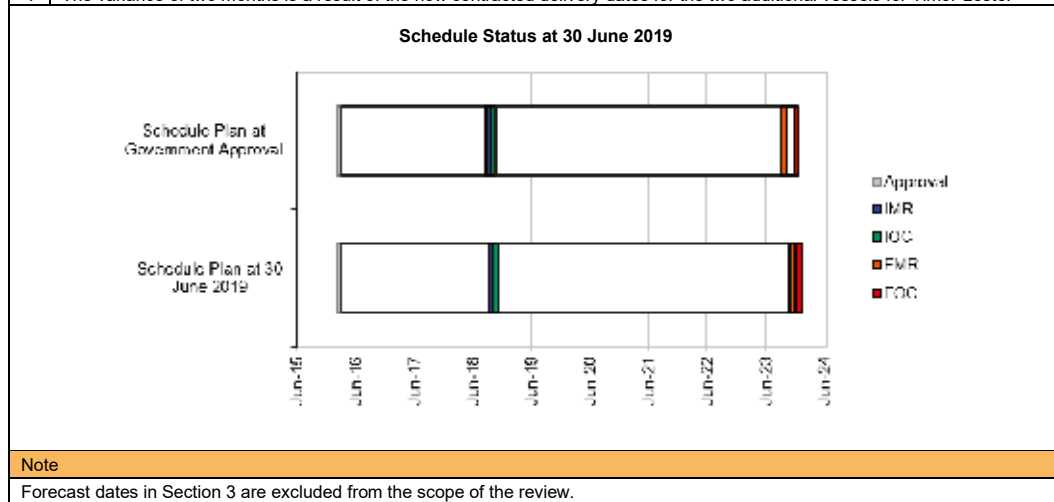
3.3 Progress towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Oct 18	Nov 18	1	1,2
Initial Operational Capability (IOC)	Oct 18	Nov 18	1	3
Final Materiel Release (FMR)	Nov 23	Nov 23	0	1,2
Final Operational Capability (FOC)	Sep 23	Nov 23	2	3,4
Notes				
1	IMR and FMR dates were not scheduled at Combined Pass Government Approval.			

Project Data Summary Sheets

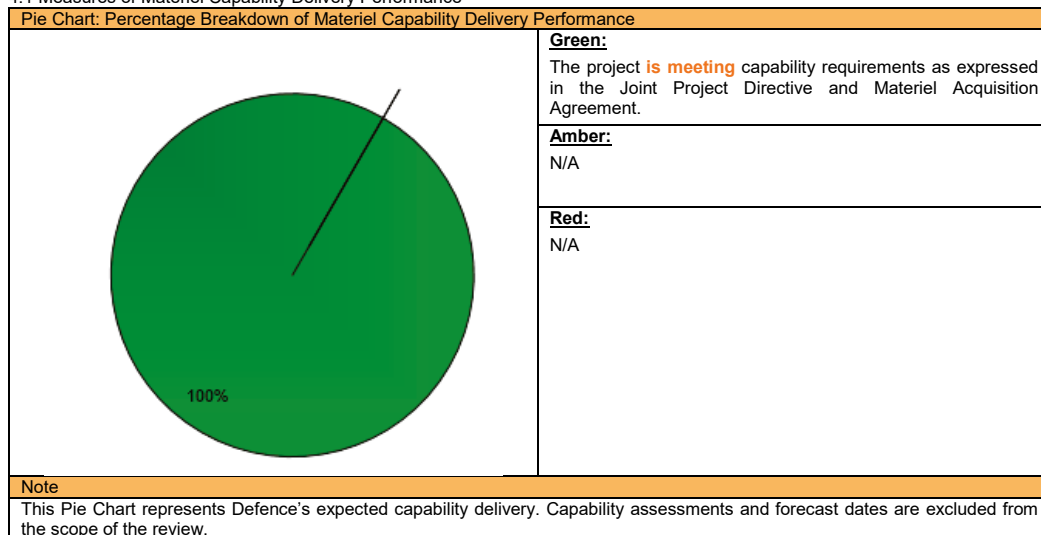
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

2	IMR and FMR will be achieved at acceptance of boats by the Commonwealth.
3	IOC and FOC will be achieved at acceptance of the boats into PIC operational service. This is expected to occur simultaneously with IMR and FMR. The variance of one month is a result of delayed commencement of SATS and HATS for the first vessel, leading to a delay to delivery.
4	The variance of two months is a result of the now contracted delivery dates for the two additional vessels for Timor-Leste.



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	First vessel and associated support system technical documentation, initial spares and logistics documentation delivered and accepted by the Commonwealth. IMR was achieved 30 November 2018 .	Achieved
Initial Operational Capability (IOC)	First vessel accepted into the Pacific Island Country operational service. IOC was achieved 30 November 2018.	Achieved
Final Materiel Release (FMR)	Last Vessel (21) delivered, completed delivery of all remaining Acquisition Project Support deliverables and accepted by the Commonwealth including completion	Not yet achieved

	of transition tasks in accordance with the PPB-R Transition Plan. FMR is forecast to be achieved in November 2023.	
Final Operational Capability (FOC)	All vessels accepted into their Pacific Island Country operational service. FOC is forecast to be achieved in November 2023.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance the infrastructure work required in each Pacific Island Country will not be completed prior to the arrival of the replacement vessels leading to an impact on reputation. This risk is relevant to the Pacific Maritime Security Program.	Tender documentation being developed for the delivery of the upgrades includes infrastructure delivery dates which are prior to the GCPB arrival. The project and GHD Pty Ltd (engaged as the Project Manager/Contract Administrator for infrastructure upgrades) are working to ensure that delays to tendering and engaging contractors are not as a result of Commonwealth processes. Decoupling less critical aspects of upgrades and use of streamlined procurement strategies are being explored with a view to ensure works related to safe and secure berthing of the new GCPBs are completed prior to boat arrivals. Request for additional Defence Cooperation Program funding (as required) is to be submitted following 1 star agreement on approach.
There is a risk that the current PPBs will be either unable to transit to Australia or moved to Australia out of alignment with current planning leading to an impact to the phasing of Disposals costs incurred as part of the overall Project Budget.	Engage with Pacific Island Countries (PICs) & Maritime Surveillance Adviser and Technical Adviser via International Policy Division and Pacific Patrol Boat Systems Program Office to gain earliest advice on risk realisation. Flexibility has been incorporated into the PPB Disposal contract signed 6 July 2018, however this is limited in scope. Funds have been made available to Materiel Logistics Disposal and Sales Branch (MLDS) for undertaking movement of vessels unable to transit to the disposal site under own power. These funds are to enable MLDS to promptly arrange movement of boats so as to avoid the risk of Disposals Contract costs being incurred. PPBSPO to conduct material condition assessments and advise on seaworthiness to sail.
There is a risk that vessel configuration control will be affected by Austal failing to implement and manage an effective Configuration Management (CM) system during Acquisition leading to an impact on Cost, Performance and Sustainability.	Project to include this as a standing agenda item for contract Quarterly Progress Review Meetings. Austal to provide updates via Monthly Contract Status Report (CSR). Leverage the Resident Project Team at Austal site for participation in Physical Configuration Audits. Project Office is maintaining oversight of Austal implementation of configuration management system and processes. This risk has been downgraded to medium following reassessment post acceptance of the first vessel and finalisation of configuration management processes.
There is a chance that key Project Milestones will be impacted by a lack of availability of suitably qualified, experienced and authorised Project and stakeholder personnel.	Use of Australian Public Service / Contractor workforce mix within Project Office. Engagement of stakeholders (including Fundamental Inputs to Capability (FICs)s) through Integrated Project Team, PSG and specific working groups. This risk has been downgraded to medium following reassessment post acceptance of the first vessel noting the reducing resource requirements applicable across the program.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
The scope of Pacific Maritime Security Program infrastructure works required exceeds those to be implemented by the SEA3036 Phase 1 Project (using allocated funding) resulting in the inability for GCPB vessels to dock and remain docked in a safe and secure manner without significant inefficiency at all designated PIC home berths. This issue is relevant to the Pacific Maritime Security Program.	Utilise the contracting vehicle established by SEA3036 Phase 1 to execute upgrades in addition to those funded by the project, with funds from other sources such as International Policy Division. IP Div to request additional Defence Cooperation Program funding to complete infrastructure upgrades for the remaining three nations. Project Office to advise on procurement strategies to minimise further schedule delay.
Infrastructure works to be executed for Papua New Guinea were not completed in advance of the first GCPB (Ted Diro) arriving in country (at HMPNGS Tarangau), with a resultant minor impact to wharf operations and	Utilise GHD, including in country resources, for contract administration, progress certification and updates. IP Division to continue to engage with PNG officials, advising on the current status and contracted program. Prioritisation of

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

potential associated impact to the PNG international relationship. This issue is as a result of the realised first risk at Section 5.1.	requests for information in order to avoid delays to infrastructure work.
The second Tongan PPB (VOEA PANGAI) is due into the disposal site in Jul 19 and will not be able to transit.	The Commonwealth is procuring required services to assist the vessel to transit in the required timeframe.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	8	8	9	9	9	8	9	60
	Explanation	<ul style="list-style-type: none">Schedule: delivery of Boat 01 was delayed from 24 Oct 2018 to 30 Nov 2018, representing an approx. 5 week delay to Initial Material Release and coincidentally Initial Operational Capability. IMR and IOC were achieved on 30 Nov 2018Requirement: The design has been shown to meet all functional and performance requirements and has been accepted into service by the first three recipient nationsTechnical Understanding: The design is complete and the first three vessel have been accepted by Defence and transferred to recipient nations.							

Project Stage	Maturity Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Others	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ. & Test	55
Complete Acceptance Testing	57
Initial Material Release (IMR)	60
Final Material Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance Into Service	68
Project Completion	70

2017-18 MPR Status - - - - 2018-19 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Allocate schedule allowance to enable ramp-up and learning of Defence requirements for Contractors inexperienced with Defence contracting templates	Schedule Management
Develop, maintain and leverage positive Contractor relationships	Contract Management
Use of review teams for assurance on Contract Development when tailoring Defence contracting templates.	Requirements Management
Work with Contractor to ensure the broader implications of key milestone delay are understood and encourage early advice on delay.	Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	Mr. Peter Croser
Project Director	Mr. David Kingston

Project Data Summary Sheet¹⁵⁸

Project Number	JP 9000 Phase 7 ¹⁵⁹
Project Name	Helicopter Aircrew Training System
First Year Reported in the MPR	2015-16
Capability Type	Replacement
Acquisition Type	Australianised COTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	February 2007
Government 2nd Pass Approval	August 2014
Budget at 2 nd Pass Approval	\$483.8m
Total Approved Budget (Current)	\$481.6m
2018-19 Budget	\$88.5m
Project Stage	Final Contract Acceptance
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

JP (AIR²) 9000 Phase 7 will provide a new Helicopter Aircrew Training System (HATS) to prepare Navy and Army aircrew for conversion to operational aircraft. JP 9000 Phase 7 will replace the current systems based on Squirrel and Kiowa helicopters.

The project will deliver a total aircrew training solution based around 15 Airbus EC135T2+ helicopters, three Thales Flight Simulators and numerous other synthetic training devices, together with system support and joint delivery for an initial award term of approximately eight years, with further optional award terms of three years recurring.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2019 the Project end of financial year expenditure to budget variance was overspent by \$3.5m primarily due to the earlier than expected presentation of the Prime Contractor Price Variation claims for Final Acceptance, previously forecast for July 2019 payment.

Project Financial Assurance Statement

As at 30 June 2019, JP 9000 Phase 7 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency during the financial year.

Schedule Performance

The revised schedule, delivered in April 2016 to address program delays, has facilitated the achievement of Initial Operational Capability, Initial Operational Release, Final Materiel Release and on time completion of Final Acceptance, closing the Acquisition Contract.

Final Materiel Release was achieved in April 2019.

FOC is forecast to be achieved during Quarter 4 2020, for declaration in December 2020. The forecast date has been adjusted from September to December to reflect the expected completion rather than commencement of the quarter.

Materiel Capability Delivery Performance

158 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

¹⁵⁹ HATS was originally approved as an AIR project but since second pass it has been managed and reported as a Joint project. For finance reporting purposes the title 'AIR' must be retained. The remainder of this report will refer to JP 9000 Phase 7.

During the reporting period the Pilot, Aircrewman and Aviation Warfare Officer Trial Courses, which facilitated Commonwealth testing, were completed. The Sensor Operator Trial Course commenced on completion of the Aircrewman course and was also completed.

On completion of minor rectification work, the four Training Management Packages (TMPs) were accepted by the Commonwealth. Acceptance of the Pilot TMP constituted Initial Operational Capability and permitted commencement of further training courses.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

JP 9000 Phase 7 is intended to provide a rotary wing training capability for Navy and Army, to meet the future rotary training needs of the Australian Defence Force (ADF). The Project will deliver a system that encompasses live, synthetic and classroom aviation instruction to overcome the broadening gap between current rotary training systems and the advanced operational helicopters in the current and planned future ADF inventories.

The Project achieved Government First Pass approval in February 2007 and Second Pass approval in August 2014. Both Acquisition and Support Contracts were signed on 14 November 2014.

The Acquisition contract delivered a total aircrew training solution based around 15 Airbus EC135T2+ helicopters, three Thales Flight Simulators and numerous other synthetic training devices. Boeing Defence Australia (BDA) was responsible for the development and set to work on a training delivery and management system which includes Training Management Packages based on Defence identified competencies and competency levels. Training development was conducted in accordance with the Defence Training Model.

The Support Contract provides for system support and joint delivery for an initial award term of approximately eight years, with further optional award terms of three years recurring. The Support Contract is performance based with Key Performance Indicators relating to aircraft, simulator and instructor availability and includes a Continuous Improvement and Efficiency Program.

Uniqueness

As a direct capital acquisition utilising ASDEFCON developed performance based contracts there are no truly unique aspects to the project.

Major Risks and Issues

Whilst the significant issue of schedule compression, was closed on achieving commencement of the trial course (Pilot) in January 2018, the schedule continued to prove challenges right up to Final Acceptance. Challenges to schedule were overcome by the parties continuing to work collegially and pragmatically to achieve best for program outcomes.

Other Current Related Projects / Phases

The HATS project influences the following aircraft platforms by providing aircrew training to feed into their operational flying conversions:

AIR 9000 Phase 8 Future Naval Aviation Combat System Helicopter (Seahawk Romeo).

AIR 9000 Phase 2/4/6 Multi-Role Helicopter (MRH90).

Additional Medium Lift Helicopters (Chinook).

Armed Reconnaissance Helicopter (ARH Tiger).

The following projects directly influence HATS:

AIR 5428 Pilot Training System which provides students to HATS for rotary wing conversion.

Multi role Aviation Training Vessel (MATV), MV SYCAMORE. MV SYCAMORE was delivered to Navy in 2017 and EC135 day and night operations were approved in June 2018.

J 0028 HATS Facilities Project providing training, accommodation and maintenance facilities. Handover of all J0028 facilities was achieved by April 2017.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Feb 07	Original Approval	13.6	1
Nov 13	Real Variation – Transfer	(3.2)	2
Jun 14	Real Variation – Transfer	(1.6)	2
Sep 14	Government Second Pass Approval	475.0	
	Total at Second Pass Approval	483.8	
Jul 10	Price Indexation	2.4	3
Feb 19	Real Variation – Transfer	(0.1)	2
Jun 19	Exchange Variation	(4.5)	
Jun 19	Total Budget	481.6	
	Project Expenditure		

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Prior to Jul 18	Contract Expenditure – Boeing Defence Australia (BDA) – Acquisition Contract	(233.7)		
	Contract Expenditure – BDA – Support Contract Phase In	(38.7)		
	Contract Expenditure – Jacobs Australia	(7.2)		
	Other Contract Payments/Internal Expenses	(13.7)		
			(293.3)	4
FY to Jun 19	Contract Expenditure – BDA – Acquisition Contract	(47.4)		
	Contract Expenditure – BDA – Support Contract Phase In	(42.5)		
	Contract Expenditure – Jacobs Australia	(1.3)		
	Other Contract Payments/Internal Expenses	(0.8)		
			(92.0)	5
Jun 19	Total Expenditure		(385.2)	
Jun 19	Remaining Budget		96.3	

Notes	
1	The project's original budget amount prior to achieving Second Pass Government approval.
2	Transfer of budget to Estate and Infrastructure Group for Facilities Activities.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$2.4m, applied only to the portion of the budget approved at First Pass. From July 2010 all project budgets were approved by Government in out-turned dollars.
4	Other Expenses mainly comprised of: Contractor Support (\$7.7m), Salaries (\$2.9m), Legal (\$1.5m), Travel and Training (\$1.5m).
5	Other expenditure is mainly comprised of Contractor Support (\$0.8m).

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
90.3	89.0	88.5	PBS – PAES: Variation is due to schedule refinement to Boeing Contract initial start by half of a month. PAES – Final Plan: Variation is due to reduced budget requirement for Contractor and minor facilities work.
Variance \$m	(1.3)	(0.5)	Total Variance (\$m): (1.8)
Variance %	(1.4)	(0.6)	Total Variance (%): (2.0)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		3.5	Australian Industry	As at 30 June 2019 the Project end of financial year expenditure to budget variance was overspent by \$3.5m primarily due to the earlier than expected presentation of the Prime Contractor Price Variation claims for Final Acceptance, previously forecast for July 2019 payment.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
88.5	92.0	3.5	Total Variance	
		3.8	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
BDA – Acquisition	Nov 14	311.6	281.1	Firm	ASDEFCON	1
BDA – Support Phase In	Nov 14	68.6	81.2	Firm	ASDEFCON	1,3
Jacobs Australia ISC	Dec 14	10.2	9.0	Firm	ASDEFCON	2
Notes						
1	Contract value as at 30 June 19 is based on actual expenditure to 30 June 19 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
2	On 01 Dec 17, exercised Contract extension options, extending the Contract until 22 December 2019.					

3	The price of BDA Support Contract has increased due to early commencement of Pilot, Aircrewman and Aviation Warfare Officer Training courses. Funds were brought forward from the recurring services contract as detailed in Contract Change Proposal 003.			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 19		
BDA – Acquisition	Various	Various	15 EC 135 Helicopters 3 Full Flight Simulators 17 associated synthetic training devices 4 Training Management Plans Training Management System	
BDA Support Phase In	N/A	N/A	System support and joint delivery for an initial award term of approximately 8 years.	
Jacobs Australia ISC	N/A	N/A	Provide specialist engineering support, integrated logistics and training design.	
Major equipment received and quantities to 30 June 19				
15 EC 135 Helicopters. 3 Full Flight Simulators. 6 Training Management Plans. Training Management System. 17 Synthetic Training Devices, comprising: <ul style="list-style-type: none"> 2 Tactical Part Task Trainers. 10 Desktop Trainers. 2 Virtual Reality Trainers. 1 Marshalling Virtual Reality Trainer. 1 Aircraft Replica Trainer. 1 EC-135 Helicopter Underwater Escape Trainer Module. 				
Notes				
	N/A			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	System Requirements Review	Sep 15	N/A	Jan 16	4	1
	System Definition Review	Feb 16	N/A	Dec 16	10	2
Critical Design	Aircraft Replica Trainer	Jan 16	Nov 16	Feb 17	13	3
	Support System Detailed Design Review	Jun 16	N/A	Jun 17	12	4
Notes						
1	Variance due to slow ramp up of Contractor workforce and scheduling/resource issues identified through the Integrated Baseline Review and complimentary Schedule Compliance Risk Assessment Methodology (SCRAM) review.					
2	Additional delay to System Definition Review resulted from BDA remediation and re-planning efforts, including emergent issues identified through remediation activities.					
3	Hardware design activity is only applicable to the ART, as all other aspects are predominantly COTS devices/technology. Design review for ART is a combined preliminary and critical process. A Contract Change Proposal was signed in November 2015 to move the ART Design Review so that it logically occurred after the System Definition Review.					
4	Additional delay to Support System Detailed Design Review resulted from emergent issues identified during development of aspects of the support system.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration Acceptance	Piloting Course Readiness – Pilot	Dec 17	N/A	Dec 17	0	1
	First EC135T2+ helicopter	Mar 16	N/A	May 16	2	
	Final EC135T2+ helicopter	Feb 17	N/A	Dec 17	10	2
	Final Acceptance	Mar 19	N/A	Mar 19	0	
Notes						
1	This milestone is closely associated with the System Acceptance Audit which will constitute acceptance of the mission systems, support system and training system elements to achieve Initial Materiel Release (see section 4.2), and will be achieved at the same time.					

Project Data Summary Sheets

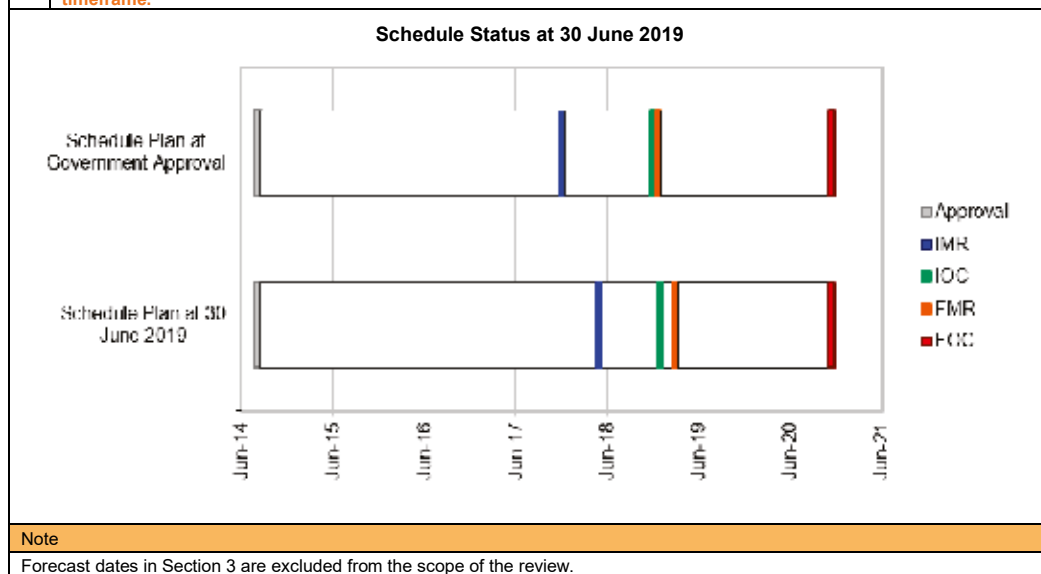
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

2	Delay was due to retention of aircraft N52-007, by Airbus Helicopters, in Germany as prototype for development of an air-conditioning retrofit Engineering Change. Remaining helicopters were modified in Australia by BDA at no additional cost to the Commonwealth.
---	--

3.3 Progress Toward Materiel Release and Operational Capability Milestones

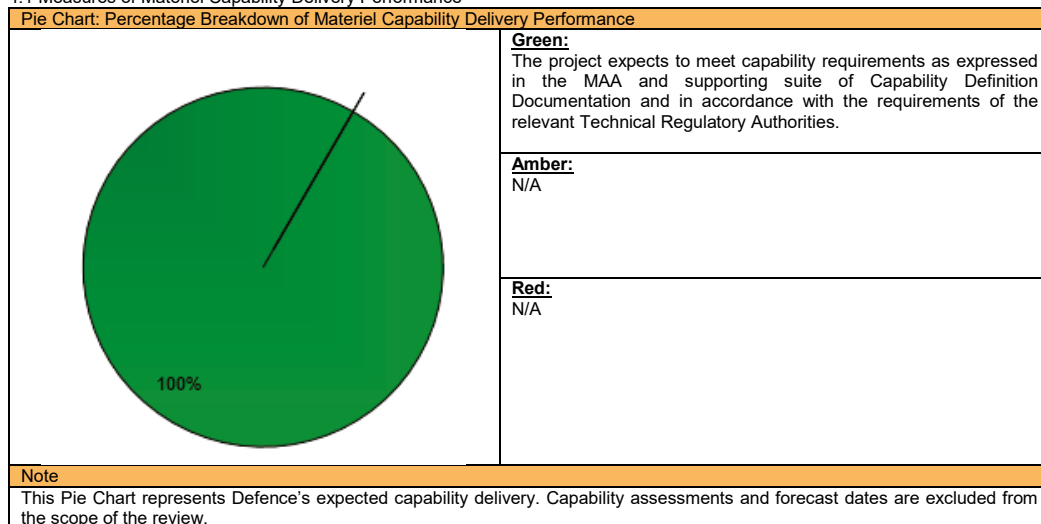
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 17	May 18	5	1
Initial Operational Capability (IOC)	Dec 18	Jan 19	1	
Final Materiel Release (FMR)	Dec 18	Apr 19	4	2
Final Operational Capability (FOC)	Dec 20	Dec 20	0	3

Notes				
1	IMR predicated on acceptance of the Aircraft Replica Trainer, managed through the recovery schedule on a just in time for training basis. Sufficient systems were available to commence trial course in January 2018.			
2	FMR delay due to reframing milestone to accommodate Navy acceptance of the Sensor Operator Training Management Package instead of trial course completion and to align with Final Acceptance Milestone.			
3	The forecast date has been adjusted from September to December to align with End of Quarter 4 completion timeframe.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none"> 15 helicopters, 2 Full Flight Simulators, 2 Tactical Part Task Trainers, 2 Virtual Reality Trainers (VRT), 1 Marshalling VRT, 1 Helicopter Underwater Egress Training conversion module, 1 Aircraft Replica Trainer and 10 Desktop Trainers ready to be employed for HATS Piloting courses. Associated Mission, Support and Training Systems. IMR was achieved in May 2018. 	Achieved
Initial Operational Capability (IOC)	<p>Initial Operational Capability (IOC): HATS IOC is defined as completion of the first undergraduate Pilot HATS Operator Training Piloting (ie Trial) course (OC-Pilot), with the number of students on that course and the system configuration equal to that expected in the mature system.</p> <p>IOC was achieved in January 2019.</p>	Achieved
Final Materiel Release (FMR)	<ul style="list-style-type: none"> IMR deliverables, plus one additional full flight simulator and transition of all HATS acquisition products (Mission and Support Systems) and materials to their in-service support agency. Achieved in April 2019. 	Achieved
Final Operational Capability (FOC)	<p>Final Operational Capability (FOC): FOC is achieved when the full scope of the project, including mission systems, support systems and facilities have been accepted into service by Defence.</p> <p>FOC is forecasted to be achieved in December 2020.</p>	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
N/A	N/A
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

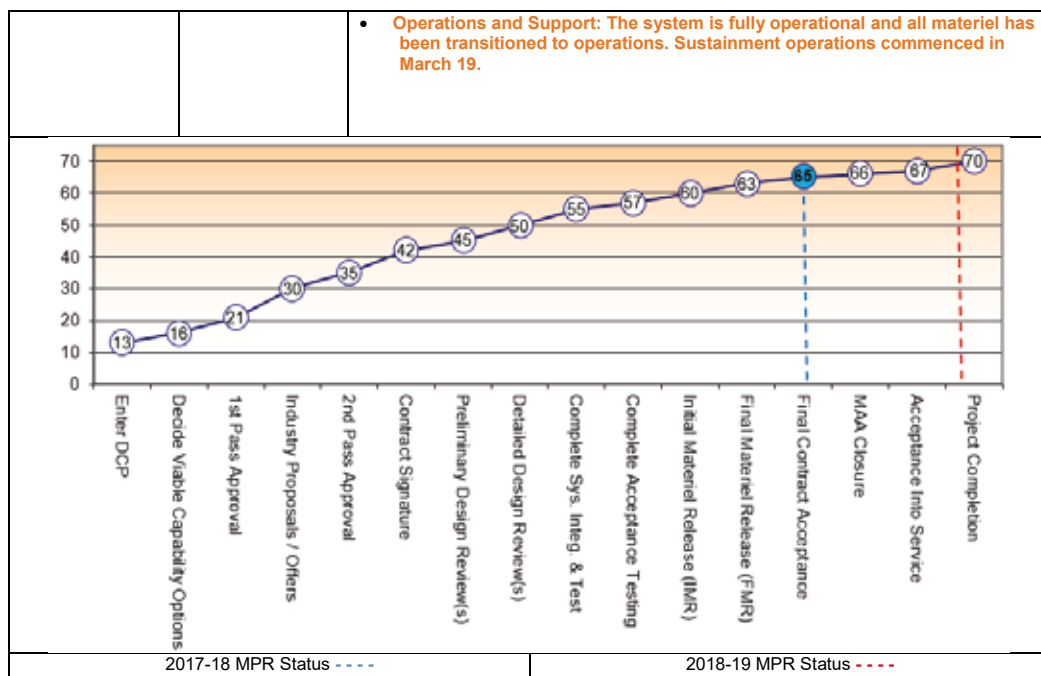
Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	9	9	9	9	65
Final Contract Acceptance	Project Status	10	9	10	10	10	10	10	69
	Explanation	<ul style="list-style-type: none"> Technical Understanding: Defence understands the system which is now operating under sustainment. There are processes in place for continuing support and modification of the system as required through life. Technical Difficulty: All test and evaluation of systems and training outputs have been conducted and found suitable to meet intended needs. Commercial: Contractor performance has met all requirements throughout the acquisition process in timely fashion. Initial indications of in service support performance also meets requirements. 							

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Where a project has a long gestation period, for whatever reason, the Sponsor and Capability Manager must be closely engaged to ensure the requirements set maintains relevance over time.	Requirements Management
Tenderer/Contractor 'off-the-shelf' claims need to be tested as thoroughly as possible, as soon as possible in the project lifecycle. This requires the availability of, or access to, appropriate and engaged subject matter experts early.	Off-the-Shelf Equipment
Conduct of SCRAM activities during contract negotiation and again prior to IBR were first trialled in this Project, yet the schedule risks were realised very early in the Project. Early use of the SCRAM activity is valuable (risks identified early) and the process should be matured to support selection/negotiation and to baseline activities.	Schedule Management
This Project is one of the first to implement the Integrated Support Contractor (ISC) model to execute traditional Project Office roles. The ISC Contract structure was closely aligned to and reliant on the Prime Contractor's Contract Master Schedule (CMS). Initial CMS deliverables had quality issues manifesting significant second order effects on the ISC contract. Evolution of the ISC construct should recognise risks in lock-stepping the ISC delivery so closely to the Prime Contractor CMS.	Resourcing
The ASDEFCON suite of contract templates are a good initiative for capturing lessons learned from years of project delivery. In endeavouring to capture all lessons the templates have become voluminous with significant inter-relationships. This can make contract execution, and in particular contract changes, very difficult as even a small change in one area may unravel other relationships within the contract suite.	Contract Management
A dedicated Chief Information Officer Group/Information Communication Technology (ICT) subject matter expert assigned to the project through all stages of the acquisition would improve ICT delivery efficiency.	Schedule Management Resourcing

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Mr Shane Fairweather
Supported by Branch Head	CDRE Peter Ashworth
Project Director	CAPT Adrian Capner
Project Manager	LCDR Kerry McCallum

Project Data Summary Sheet¹⁶⁰

Project Number	SEA 1439 Phase 3
Project Name	COLLINS CLASS SUBMARINE RELIABILITY AND SUSTAINABILITY
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 00
Budget at 2 nd Pass Approval	\$72.0m
Total Approved Budget (Current)	\$445.3m
2018-19 Budget	\$8.3m
Project Stage	Initial Materiel Release
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

SEA 1439 Phase 3 is a program of upgrades to Collins Class platform systems and shore infrastructure to improve the Class reliability, sustainability, safety and capability for each of the six submarines.

1.2 Current Status

Cost Performance

In-year

This year the project achieved an accrued underspend of \$4.8m against the 2018-19 cash budget of \$8.3m. The underspend was due to a Foreign Military Sales payment planned for June 2019 not occurring until July 2019.

Project Financial Assurance Statement

As at 30 June 2019, project SEA 1439 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has received SEA 1439 Phase 5B1's contingency allocation. However, the project has not applied contingency in the financial year.

Schedule Performance

The project consists of 24 separate sub-projects of which the outstanding elements are aligned to the Collins Class Submarine Integrated Master Schedule (IMS). The IMS depicts the submarine maintenance periods where project implementation can be performed. Submarine installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program and Enterprise priorities, consequently completion dates vary according to the maintenance program and the focus of ensuring submarines availability targets are achieved.

Testing for Special Forces upgrades and torpedo decoy capability has been completed, with formal IOC for Special Forces upgrade forecast for July 2020 and formal FOC subsequently forecast for July 2021. Formal FOC for the torpedo decoy has been realigned with the remaining sub-projects. FMR and FOC (all capabilities delivered) remains forecast for Dec 2022 and June 2023 respectively. The schedules for the two additional sub-projects are aligned with the existing sub-projects hence there is no additional schedule pressure.

160 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

Materiel Capability Delivery Performance

Only two sub-projects provide new capabilities; Special Forces Upgrade and the Torpedo Decoy. The remaining sub-projects are medium to low complexity engineering enhancements. The Special Forces upgrade provides three capabilities. Two have achieved Operational Release (OR), while the third capability was delayed due to required safety modifications which are now complete, with **formal** Initial OR expected to be achieved by **July 2020**.

Torpedo Decoy received Initial OR on 2 May 2014 by Chief of Navy.

Fourteen engineering enhancements have been completed by the project. The remaining enhancements will be implemented progressively until 2022 subject to submarine availability and the FCD program.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

In 1999, Government sponsored the '*McIntosh and Prescott Report*' into submarine capability, which was followed by a subsequent review by Head Submarine Capability Team who identified capability, reliability and sustainability issues with the Collins Class platform and associated shore infrastructure. In 2000, Government approved project funds to design and implement engineering enhancements for as many of these capability and materiel deficiencies as possible within the allocated budget. Government also approved a "global budget" whereby Head Maritime Systems could approve transfer of funding between SEA 1439 Phase 3, SEA 1439 Phase 4B (Improvements to Collins Sensors), SEA 1439 Phase 4A (Replacement Combat Systems) and SEA 1429 (Replacement Heavyweight Torpedo) to achieve optimum capability. Under the global budget there have been reductions in funding allocations to SEA 1439 Phase 3 in favour of SEA 1439 Phase 4A and SEA 1429, with a commensurate reduction in the number of engineering enhancements to be implemented through SEA 1439 Phase 3.

The scope of this project is limited to the reliability and sustainability issues identified in the 1999 review and not the more contemporary reliability and sustainability issues relating to diesel engines, generators, batteries or the main motor; those issues are being addressed under the submarine sustainment program.

Many of the engineering enhancements can only be installed during the submarine FCD program and although most design and development activities are complete, submarine upgrades are contingent on the FCD program, which will run to 2022.

A total of 24 platform upgrades were originally identified in the initial MAA. However, in **2011** two were removed due to one being technically infeasible and the other overlapping with another project. The remaining 22, which consisted of two new capabilities and 20 engineering enhancements, **were** identified for action under the project. Fourteen **of these** engineering enhancements have been completed and the two new capabilities are being implemented.

At that time, the two new capabilities and core engineering enhancements managed by the SEA 1439 Phase 3 project, which represented the highest priority and spend profile, and specifically disclosed in this report include:

1. **Special Forces Upgrade (New Capability):** To provide three basic levels of capability and to further enhance the capabilities to a fully deployable state.
2. **Torpedo Counter Measures Internal Stores (Torpedo Decoy) (New Capability):** To provide a programmable counter measure against torpedos.
3. **Fire Fighting Upgrade (Engineering Enhancement):** Upgrade to the fire fighting systems onboard, including greater protection from fire and its toxic by-products.
4. **Sewage System Upgrade (Engineering Enhancement):** Automation of the sewage discharge system and thereby reduce the risks of exposure to toxic gases.
5. **Fast-Track modifications to HMA Ships Collins, Farncomb, Waller and Rankin (Engineering Enhancement):** Address platform build deficiencies in a holistic get-well program.

The remaining platform upgrades (engineering enhancements) are outlined in ANAO Report No. 17 2010-11: *2009-10 Major Projects Report*.

In November 2017, Government approved the transfer of the remaining budget and scope of projects SEA 1114 Phase 3 and SEA 1439 Phase 5B1 into SEA 1439 Phase 3 to realise project management, reporting and workforce efficiencies in the Collins Class Submarine Program. **This represents two additional engineering enhancements:**

1. **Dived Safety Modifications: To improve safety while submarines are dived. The SEA 1439 Phase 3 project will perform the final two submarine installations.**
2. **Communications Mast and Antenna Replacement: To replace the communications fit developed under Project SEA1439 Phase 4B. The SEA 1439 Phase 3 project will perform the final submarine installation.**

The transfer of this scope has not impacted the forecast FMR or FOC milestones.

Uniqueness

Project SEA 1439 Phase 3 installs prioritised engineering enhancements and acquires replacement materiel as a part of ensuring continuous improvement of the Submarine fleet. Engineering enhancements were undertaken by ASC under an annualised cost-plus Through Life Support Agreement (TLSA); however as of 1 July 2012 this work is now contracted under an ISSC initially as a performance based and cost-reimbursement arrangement with a subsequent three year target based incentive period. Implementation of the ASC contract scope of work is linked to the boat IMS and driven by availability requirements mandated by Chief of Navy and General Manager Submarines.

Budget management under the cost reimbursement arrangement of the ISSC presents a major challenge for the project in achieving monthly expenditure. This is due to the alignment of linear phased expenditure and the supplier's ability to move work within the total work program to achieve Enterprise agreed objectives and contracted performance goals.

Project Data Summary Sheets

Auditor-General Report No. 19 2019-20
2018-19 Major Projects Report

Major Risks and Issues

Risks associated with engineering enhancements (including elements of the Firefighting and Special Forces upgrades) are being actively addressed by the project, as evidenced by two risks being retired in 2019 and a further two risks having post mitigation risk ratings of Low and Medium.

The technical challenges with the Special Forces and Fire Fighting sub-projects of the project have increased overall cost and schedule risk, however neither sub-project is expected to require amendment to the project's approved budget, capability delivery or Final Operational Capability date.

Other Current Related Projects/ Phases

SEA 1114 Phase 3 Dived Safety Modifications: The remaining project scope includes modifications to increase the safety of the submarines while dived. Government approved a change of scope to have SEA 1114 Phase 3 fit four submarines with the modifications and SEA 1439 Phase 3 fit two submarines with the modifications.

SEA 1439 Phase 3.1 Collins Obsolescence Management - Integrated Ship Control Management and Monitoring System Obsolescence: Project scope includes remediating obsolescence of the Integrated Ship Control Management and Monitoring System in the Collins Submarines and shore facilities.

SEA 1439 Phase 4A Replacement Combat System: To provide Collins Class Submarines with the US Navy Tactical Command and Control System: minor improvements to the Combat System Augmentation; sonar and shore facilities for integration, testing and training. **The Chief of Navy formally declared Final Operational Capability for this project in February 2019. The Acting Director Program Approvals and Agreements formally closed the Materiel Acquisition Agreement for this project in March 2019.**

SEA 1439 Phase 4B Weapons and Sensor Enhancements: Acquire endorsed supplies to address deficiencies identified, in the area of Submarine weapons and sensors. **The Chief of Navy formally declared Final Operational Capability for this project in February 2019. The Director Program Approvals and Agreements formally closed the Materiel Acquisition Agreement for this project in April 2019.**

SEA 1439 Phase 5B1 Communications Mast and Antenna Replacement Class Fit: The project aims to fit five submarines with the communications fit developed and tested under Project SEA 1439 Phase 4B, along with one spare antenna, one spare mast raising equipment and spares. In November 2017, Government approved a change of scope to have SEA 1439 Phase 5B1 fit four submarines with the communications fit and SEA 1439 Phase 3 fit one submarine with the communication fit.

SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Program: The Project scope is to enhance the Communications and Electronic Warfare capabilities of the Collins Class submarine. The project is broken up into two sections - the Modernised Submarine Communications System, an upgrade to the existing on board communications system, and the Microwave Electronic Support Measures, an enhancement to the existing Electronic Warfare capability.

SEA 1439 Phase RCE3 EHF Communications Capability: Extreme High Frequency (EHF) Communications Capability for a single Collins Class Submarine.

SEA 1439 Phase 6 Collins Sonar Capability Assurance Program: The project scope is to address obsolescence and capability deficiencies in the Collins Class Sonar System and establish an ongoing capability assurance program.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance**2.1 Project Budget (out-turned) and Expenditure History**

Date	Description	\$m	Notes
	Project Budget		
Sep 00	Original Approved (Second Pass equivalent)	72.0	
Apr 01	Real Variation – Transfers	3.7	1
Jul 01	Real Variation – Scope	302.8	2
Sep 02	Real Variation – Transfers	(42.0)	3
Aug 04	Real Variation – Budgetary Adjustments	(0.3)	4
Aug 05	Real Variation – Budgetary Adjustments	(0.5)	5
Oct 06	Real Variation – Scope	7.5	6
Feb 19	Real Variation - Scope	33.7	8
		304.9	
Jul 10	Price Indexation	74.4	7
Jun 17	Exchange Variation	(6.0)	
Jun 17	Total Budget	445.3	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – ASC Pty Ltd	(260.9)	
	Other Contract Payments / Internal Expenses	(113.9)	9
		(374.8)	
FY to Jun 19	Contract Expenditure – ASC Pty Ltd	(1.6)	
	Other Contract Payments / Internal Expenses	(1.9)	10

Jun 19	Total Expenditure	(3.5)
		(378.3)
Jun 19	Remaining Budget	67.0
Notes		
1	Transfer from SEA 1439 Phase 1B.	
2	Implementation of a reliable and sustainable Platform (full scope).	
3	Transfer to SEA 1439 Phase 4A as part of initial approval.	
4	Administrative Savings harvest.	
5	Skilling of Australia's Defence Industry harvest.	
6	Real Cost Increase for Special Forces Upgrade modification to an additional Collins Class submarine.	
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$66.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$7.7m having been applied to the remaining life of the project.	
8	The Total Budget was increased in FY18/19 to \$445.3m, following the transfer of scope from Projects SEA 1114 Phase 3 and SEA 1439 Phase 5B1.	
9	Other expenditure comprises \$54.9m against multiple minor contracts with Defence companies (including Australian companies), contractor and consultancy services associated with the delivery of this project and project specific travel expenses. Other examples of significant expenditure include \$12.3m for the Propulsion Control Reference System, \$11.7m to L3 Nautronix Ltd for the underwater communications system and sonobuoy, \$9.3m for the Towed Array Handling System, \$8.1m for general operating expenditure, \$4.7m for contractor service providers, \$4.1m for minor contracts, \$3.7m with Thales for the Underwater Telephone, \$3.1m for Torpedo decoy procurement, and \$2.0m for generator procurement.	
10	Other expenditure comprises \$1.8m for procurement of flexible couplings, \$0.1m for other operating expenses.	

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
2.6	5.1	8.3	PBS-PAES: Revised upwards by \$2.5m due to revised CASG estimates for Engineering and Project Management PAES-Final Plan: Revised upwards by \$3.2m due to transfer of budget and scope from Projects SEA 1114 Phase 3 and SEA 1439 Phase 5B1.
Variance \$m	(2.5)	3.2	Total Variance (\$m): 5.7
Variance %	(96.2)	62.7	Total Variance (%): 219.2

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
8.3	3.5	(4.8)	Australian Industry	The \$4.8m underspend was predominantly due a Foreign Military Sales payment planned for June 2019 not occurring until July 2019.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support in Operations	
			Additional Government Approvals	
			Total Variance	
		(57.8)	% Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
ASC Pty Ltd	Jul 12	N/A	N/A	Variable (Cost Reimbursement)	ASDEFCON	1
Notes						
1	The contract is comprised of five year Performance Periods from 1 July 2014 - Target Cost Incentive Model arrangements with Direct Project Costs (DPCs) reimbursed subject to defined rules and constraints and an agreed Target Cost Estimate of DPCs for the five year Period, reset at the end of three years. The PP3 extension to the ISSC was signed in June 2017.					
Contractor		Quantities as at		Scope	Notes	
		Signature	30 Jun 19			
ASC Pty Ltd		N/A	N/A	See 1.3 Project Context: Background for further information.		

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Major equipment received and quantities to 30 Jun 19

A total of **24** platform upgrades (consisting of two new capabilities and **22** engineering enhancements) continue to be progressed for each of the six submarines - subject to the IMS.

Responsibility for two additional engineering enhancements **was** transferred to SEA 1439 Phase 3 **from Projects SEA 1114 Phase 3 and SEA 1439 Phase 5B1** in FY 2018/19.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned (Note 1)	Achieved/Forecast (Note 1)	Variance (Months)	Notes
Article I. Final Design Review	Special Forces Upgrade	N/A	N/A	Dec 04	N/A	2
	Torpedo Decoy	Jun 10	N/A	Jul 10	1	
	Fire Fighting Upgrade	N/A	N/A	Jun 04	N/A	2
	Sewage System Upgrade	N/A	N/A	Nov 04	N/A	2
	Fast Track Enhancements	N/A	N/A	N/A	N/A	2
Article II. First of Class Implementation	Special Forces Upgrade	Jun 05	N/A	Oct 07	28	3, 4, 7
	Torpedo Decoy	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Jul 06	N/A	Oct 07	15	
	Sewage System Upgrade (WALLER)	Jul 06	N/A	Jul 08	24	
	Fast Track Enhancements (RANKIN)	May 01	N/A	Jun 06	61	
Article III. Full Class Implementation	Special Forces Upgrade	May 08	May 18	Jul 18	122	3, 4, 7
	Torpedo Decoy	Oct 13	N/A	Dec 13	2	5
	Fire Fighting Upgrade (DECHANEUX)	Sep 22	N/A	May 22	(4)	6
	Sewage System Upgrade (COLLINS)	Mar 17	N/A	Jun 18	15	7
	Fast Track Enhancements (WALLER)	Jul 06	N/A	Nov 07	16	
Notes						
1	The above data represents rolled-up information within the listed sub-projects each of which has many independent design review activities associated with over 100 Configuration Change Proposals. As the critical path for these sub-projects was broadly defined by the submarine docking program, individual activities within each of the above sub projects were allowed to move provided the delivery of the capability was not impacted adversely by delaying the completion of the specific docking. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the submarine docking program.					
2	In some instances, the original planned schedule for sub projects was incorporated into the submarine maintenance schedule which was maintained by ASC. ASC update the maintenance schedule annually and do not retain original schedule information. Consequently, apart from post June 2005 activities supported by a MAA, it is not possible to provide the original planned dates for some platform upgrade projects, which were scheduled to occur during an unstable FCD Program. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1 Collins Class Interim Minimum Operating Capability. SEA 1439 Phase 3 is responsible for rolling out those changes to the remaining four submarines. As such, all design and associated design review and approval was achieved under SEA 1446 Phase 1.					
3	The first of class received two of the three Special Forces capabilities. The third required redesign to increase diver safety following sea trials in 2008. The redesigned safety modifications identified were completed December 2014 and installation was completed in July 2018. Initial OR and OR are scheduled to be achieved in the months following installation.					
4	The Special Forces Upgrade safety modifications identified during the manned Sea Verification Trial have been installed and harbour and sea acceptance testing completed in June 2015 and installation was completed in July 2018. Initial OR and OR are scheduled to be achieved in the months following installation.					
5	Full class implementation has been achieved with the approval of the Configuration Change Instruction. Variance is a result of minor delays in the Configuration Management process.					
6	Full class implementation will be achieved on completion of HMAS <i>Dechaineux</i> which is scheduled for May 2022. Initial OR and OR are scheduled to be achieved in the months following installation.					
7	Full class implementation was achieved on completion in June 2018. Initial OR and OR are scheduled to be achieved in the months following installation.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned (Note 1)	Achieved/Forecast (Note 1)	Variance (Months)	Notes
Article IV. Harbour Acceptance Test (HAT)	Special Forces Upgrade	Jun 05	N/A	Sep 06	15	
	Torpedo Decoy	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Oct 13	May 14	May 14	7	2
	Sewage System Upgrade (WALLER)	Jul 06	N/A	Mar 07	8	
	Fast Track Enhancements	N/A	N/A	N/A	N/A	
Article V. Sea Acceptance Test (SAT)	Special Forces Upgrade	Aug 05	N/A	Dec 07	28	3
	Torpedo Decoy	Jul 10	N/A	Jul 10	0	
	Fire Fighting Upgrade	N/A	N/A	N/A	N/A	
	Sewage System Upgrade (WALLER)	Aug 06	N/A	Oct 07	14	
	Fast Track Enhancements	N/A	N/A	N/A	N/A	
Notes						
1	Refer Section 3.1 Note 2. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible for rolling out those changes to the remaining four submarines. As such, HAT and SAT was achieved under SEA 1446 Phase 1.					
2	Variance was attributed to the change in schedule completion of HMAS <i>Rankin</i> FCD from October 2013 Version (IMS V3.3) and the current baselined IMS.					
3	Refer Section 3.1 Note 3 and 4 and Section 3.3 Note 1.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

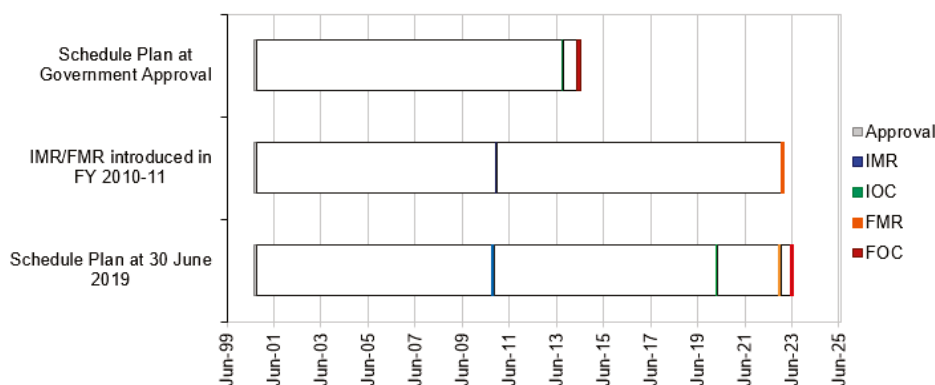
Item		Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)		N/A	Jan 11	N/A	
Initial Operational Capability (IOC)					
Initial Operating Capability for:	Initial Operational Release Special Forces Upgrade	Nov 10	Jul 20	116	1
	Initial Operational Release Torpedo Decoy	Aug 10	May 14	45	2
	Fire Fighting Upgrade (RANKIN)	Oct 13	May 14	7	3
	Sewage System Upgrade (WALLER)	Aug 06	Oct 07	14	4
	Fast Track Enhancements	N/A	N/A	N/A	5
Final Materiel Release (FMR)		Oct 22	Dec 22	2	6
Final Operational Capability (FOC)					
Final Operating Capability for:	Operational Release of Special Forces Upgrade	Jun 07	Jul 21	169	7
	Operational Release of Torpedo Decoy	Jun 14	Jun 23	108	8
	Fire Fighting Upgrade (DECHAINEUX)	Jun 14	May 22	95	9
	Sewage System Upgrade (COLLINS)	Jun 14	Jun 18	48	10
	Fast Track Enhancements (WALLER)	Jul 06	Nov 07	16	11
Six Collins Class submarines with all Supplies fitted and formally accepted		N/A	Jun 23	N/A	12
Notes					
1	The project successfully completed trials in March 2019 and is in the process of seeking formal Initial Operational Capability (IOC) agreement from the Capability Manager. The administrative process of formal IOC has been rescheduled to July 2020, with agreement from the Capability Manager.				
2	Torpedo Decoy received Initial OR on 2 May 2014 by Chief of Navy. The delay in schedule has been due to a combination of delays in acceptance of the safety case and a delay in approval of the OR due to the appointment of a new Chief of Navy.				
3	IOC is linked to successful completion of the HAT, where any variance will be caused through movement in the docking maintenance schedule. These dates are based on the IMS.				

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

4	IOC is linked to completion of the FOC SAT. Variance due to changes in docking maintenance schedule since original MAA.
5	Fast Track initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible to roll out to remaining four submarines. IOC was the responsibility of SEA 1446 Phase 1.
6	FMR dates have now been aligned to the current baselined IMS and reflected in the 18 June 2018 MAA.
7	The original MAA delivery date was for first of class only. An MAA amendment in 2006 that increased the scope created variance. Due to slippage in the preceding milestone, the forecast completion date is July 2021.
8	Delay in achieving IOR for the Torpedo Decoy has caused a delay to FOR to allow for Navy to conduct the required Operational Test and Evaluation Period. Operational Test and Evaluation (OT&E) (in conjunction with other firings) was completed in 2018 and the forecast formal FOC date is June 2023 in alignment with the Project FOC date.
9	Variance due to changes in docking maintenance schedule since original MAA. Forecast date linked to FCD completion.
10	Variance due to changes in docking maintenance schedule since original MAA. Completion date linked to HMAS <i>Collins</i> FCD completion in June 2018.
11	Fast Track initially installed on two submarines and managed under SEA 1446 Phase 1. This project installed the Fast Track upgrades across the remaining four submarines. Variance due to changes in docking maintenance schedule since original MAA.
12	Final Operational Capability forecast date added in FY17/18 and includes the scope from Projects SEA 1114 Phase 3 and SEA 1439 Phase 5B1 that were transferred to SEA 1439 Phase 3 in FY18/19.

Schedule Status at 30 June 2019



Note

Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance

**Green:**

The project is currently meeting capability requirements as expressed in the MAA except for the achievement of materiel release of the third Special Forces capability which is physically complete with Initial OR expected to be achieved by **July 2020**. Refer Section 1.2 Materiel Capability Delivery Performance.

Amber:

N/A

Red:

N/A

Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Completion of the following platform upgrades on all submarines unless otherwise specified: <ul style="list-style-type: none"> Special Forces Upgrade: Two of the three capabilities; Torpedo Countermeasures; Fire Fighting Upgrade: HMA Ships <i>Waller</i>, <i>Dechaineux</i> and <i>Sheean</i>; Sewage System Upgrade: HMA Ships <i>Waller</i> and <i>Dechaineux</i>; Fast-Track modifications: HMA Ships <i>Collins</i>, <i>Farncomb</i>, <i>Waller</i> and <i>Rankin</i>; Other remaining subordinate projects relating to platform build deficiencies in a holistic get-well program; and IMR was achieved in January 2011. 	Achieved
Initial Operational Capability (IOC)	The Capability Manager declared Initial Operational Release for the SUBSCUT torpedo decoy in May 2014. The date of this milestone was subsequently accepted as IOC within the MAA in 2018.	Achieved
Final Materiel Release (FMR)	Completion of previous Materiel Releases (Refer Section 1) and dockings up to and including HMA Ships <i>Waller</i> and <i>Dechaineux</i> FCD consisting of: <ul style="list-style-type: none"> Special Forces Upgrade – All nominated Submarines, all capabilities; Diesel Engine Upgrades: All Submarines (expected end HMAS <i>Waller</i> FCD (May 2020); Dived Safety Modifications to HMA Ships <i>Waller</i> and <i>Dechaineux</i>; and Communications Antenna Capability Enhancement to HMAS <i>Waller</i>. FMR is planned for December 2022.	Not yet achieved
Final Operational Capability (FOC)	Six Collins Class submarines with all Supplies delivered, formally accepted, and operationally ready to deploy, including: <ul style="list-style-type: none"> All 22 engineering enhancements and 2 new capabilities accepted by the Capability manager, and All Fundamental Inputs to Capability (FIC) delivered to support the submarines. FOC is planned for June 2023.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the updated firefighting system may not meet one of the technical specifications due to system integration issues or capacity.	This risk has been closed . First of class implementation to HMAS Collins was completed in June 2018 within the FCD, with subsequent testing proving that the updated design meets specification.
There is a chance that current improvements required for the Fire Panel will not be implemented to meet schedule of current planned installations during FCDs and MCDs because of delays in integrating the panel into its planned operating environment.	<ul style="list-style-type: none"> Regular meetings with stakeholders to monitor progress. Development of an interim solution as a work around. This risk has been reduced to Medium (post-mitigation) due to reduced likelihood of risk realisation.
There is a chance that a mechanical element of the Special Forces upgrade will not perform as intended resulting in an increased safety risk to personnel.	This risk has been closed. Improvements have been made to the original design solution and to the maintenance regime of the mechanical element. The improved solution was successfully tested in trials in Quarter 1 2019.
There is a chance that one of the Special Forces subsystems will require maintenance and repair on each occasion the subsystem is utilised because of limited schedule maintenance opportunities.	<ul style="list-style-type: none"> Improvement in the of regular maintenance regime of the DABS Systems to reduce defects. This risk has been reduced to Low (post-mitigation) due to reduced likelihood of risk realisation.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

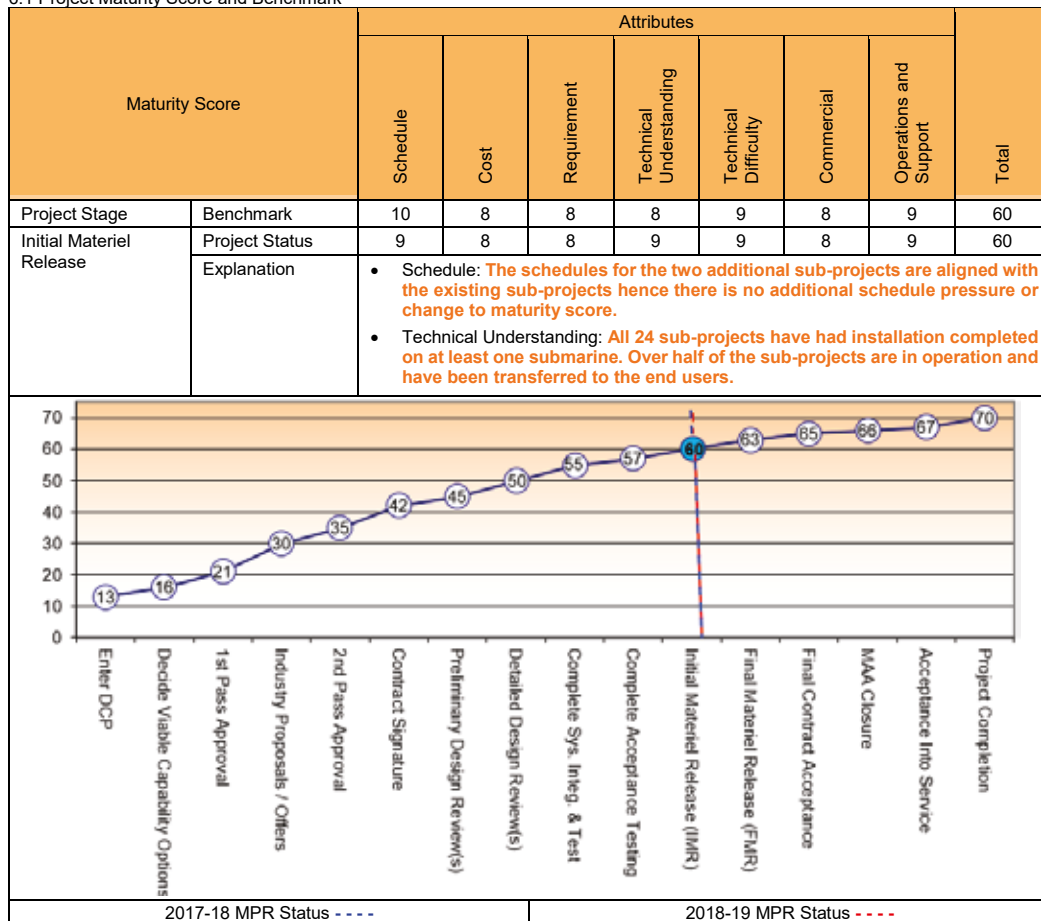
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
A Special Forces manned sea verification Trial was not conducted in 2016 due to delays in proving the system fit for purpose, driven by the continued defect within the conning tower. As a result, an element of this capability was not available in August 2016, in accordance with the MAA.	Successful manned exercises were conducted in Quarter 1 2017 and in Quarter 1 2019. Although the delay resulted in schedule slippage against the MAA baseline, the activity is now complete and there was no impact to cost or capability.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that all capability requirements are clearly defined, approved and appropriately funded before detailed acquisition planning commences.	Requirements Management
Ensure that maintenance period schedule dependencies are identified and appropriate risk management strategies developed.	Schedule Management
Consider the impact associated with long term sole source cost plus contracts.	Contract Management
Understand the competing priorities within a program (ISS Performance Term Contract) and how they will impact on individual project performance.	Schedule Management Contract Management
Responsibilities need to be clearly defined between project stakeholders in regards to the development and endorsement of trial documents and that this is identified well in advance of scheduled trials.	Governance

Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 2019

Position	Name
Division Head	RADM Gregory Sammut (Acting)
Branch Head	CDRE Richard Fitzgerald
Project Director	CAPT Adam Lindsay
Project Manager	Mr George Paragios

Project Data Summary Sheet¹⁶¹

Project Number	Land 53 Phase 1BR
Project Name	Night Fighting Equipment Replacement
First Year Reported in the MPR	2018-19
Capability Type	Replacement
Acquisition Type	MOTS
Capability Manager	Chief of Army
Government 1st Pass Approval	Dec 13
Government 2nd Pass Approval	Aug 16
Budget at 2 nd Pass Approval	\$460.3m
Total Approved Budget (Current)	\$442.6m
2018–19 Budget	\$97.0
Project Stage	Initial Materiel Release
Complexity	ACAT III
Project Image	



Section 1 – Project Summary

1.1 Project Description

Land 53 Phase 1BR addresses the situational awareness requirements of the dismounted combatant through the progressive replacement of night vision and night aiming devices over the period 2017 to 2023.

The project is being implemented in two tranches. Tranche 1 is replacing the current NINOX system (acquired in 1998) with leading edge Military Off the Shelf (MOTS) Binocular Night Vision Devices (BNVD), Laser Aiming and Illumination Devices (LAID), Laser Aiming Illumination and Ranging Devices (LAIRD), and mounting systems to Combat Helmets.

Tranche 2 of the project will examine emerging technologies that may augment, supplement or enhance the Tranche 1 capability. A submission regarding Tranche 2 will be considered by Government in 2020.

The project is also responsible for establishing the support arrangements for the equipment being acquired.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2019, the variance of (-\$1.7m) is due to industry delays and savings in weapons integration (-\$0.1m), delay in Tranche 2 trials (-\$0.4m), savings on Service Providers and Tranche 1 consumables and support costs (-\$0.5m) and a pending journal (-\$0.2m). Exchange rate variations totalling (-\$0.5m) occurred during the financial year.

Project Financial Assurance Statement

As at 30 June 2019, project Land 53 Phase 1BR has reviewed the projects approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

161 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

<p>Schedule Performance</p> <p>The project is designed around progressive production, receipt and issue of systems to combat elements throughout the Australian Defence Force, combined with individual and group training and the establishment of support systems in each location.</p> <p>The project has achieved the first two of five delivery based milestones (Materiel Releases) which will occur over the period 2017 to 2021.</p> <p>Initial Materiel Release (IMR) concluded on 29 November 2017, as scheduled. The Chief of Army declared Initial Operating Capability (IOC) on 4 December 2018 based on completion of Materiel Release 2, and the project is on track to meet the remaining milestones.</p>
<p>Materiel Capability Delivery Performance</p> <p>The project has achieved IMR and IOC, and remains on track to deliver the capability approved at Second Pass. No material issues or changes have occurred that will adversely affect ongoing delivery of requirements.</p>
<p>Note</p> <p>Forecast dates and capability assessments are excluded from the scope of the review.</p>

1.3 Project Context

<p>Background</p> <p>Land 53 Phase 1BR obtained First Pass Approval on 16 December 2013 and is the Australian Defence Force's major effort for the continued development of the Land Force night fighting capability. The project will refresh the dismantled night fighting capability via the replacement of individual night fighting systems to maintain operational superiority on night operations.</p> <p>On 23 August 2016, the Project achieved Second Pass Approval to replace the in-service NINOX and Night Aiming Devices progressively over five years through the acquisition and support of:</p> <ol style="list-style-type: none"> improved Binocular Night Vision Devices (BNVD); lighter and more ergonomic helmet mounting systems (Mounts); lighter and more ergonomic Head Harnesses (Harnesses); an improved Laser Aiming, Illumination Device (LAID); Laser Aiming Illumination Ranging Device (LAIRD); and Weapons integration of the LAID and LAIRD for specified ADF weapons. <p>There have been no strategic changes since Government approval, with the project remaining within its approved scope, on schedule and within budget.</p> <p>The Land 53 Phase 1BR Tranche 1 Acquisition and Support Contracts were enabled on 29 September 2016 with L3 Oceania Pty Ltd, supplying BNVD, Mounts, LAID and LAIRD. The acquisition of laser devices under those contracts was partially funded by Land 125 Phase 3C. A Standing Offer Deed for Head Harnesses was established on 15 December 2016 with Spearpoint Solutions & Technology Pty Ltd.</p> <p>In addition to the acquisition and support of the Tranche 1 equipment, the project will integrate the LAID and LAIRD with specified ADF small weapons by June 2021. Integration will be achieved using existing ARMTSPO contracts with the relevant weapon suppliers, principally Thales Australia Limited.</p> <p>Land 53 Phase 1BR (Tranche 2): The 23 August 2016 Second Pass Approval established a tranching approach to delivering night fighting capability, that will allow Defence to augment, supplement or enhance the Tranche 1 fleet with emerging technology to maintain operational superiority.</p> <p>An open Invitation to Register Interest (ITRI) in supplying emerging night vision technology for Tranche 2 closed on 13 July 2018. Based on ITRI responses, potential tenderers were selected to participate in a limited Request for Tender which closed on 14 February 2019. Evaluation of potential technologies (including through extensive field trials) will conclude in October 2019 and will inform the Gate 2 submission to Government. The submission will seek access to \$222.8m allocated in the Defence Integrated Investment Program.</p>
<p>Uniqueness</p> <p>The project has established a non-traditional support system, transferring transactional responsibility for warehousing, distribution, and maintenance and inventory management to its supplier.</p> <p>L3 Oceania has established a secure facility at Eight Mile Plains in Queensland to support the project. L3 Oceania uses Defence logistics management information systems to manage the equipment from acceptance to disposal, and arranges secure commercial freight providers to deliver, recover and replace unserviceable equipment from regional locations.</p>

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Major Risks and Issues
There are no major risks impacting the project. While all aspects are monitored, significant issues have not impacted capability or project delivery to date.
Other Current Related Projects/Phases
Land 125 Phase 3C is delivering the Enhanced F88 weapons system, including enhanced target acquisition ancillaries to the Australian Defence Force. Project Land 125 Phase 3C Second Pass approval included provision for the acquisition of 4,360 LAIRD and 5,010 LAID aiming devices. Land 53 Ph1BR acquired those aiming devices by November 2018 and is managing those targeting devices.
Notes
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Dec 13	Original Approved (Government First Pass Approval)	3.0	
Aug 16	Government Second Pass Approval	457.3	
	Total at Second Pass Approval	460.3	
Jun 19	Exchange Variation	(17.7)	
Jun 19	Total Budget	442.6	
	Project Expenditure		
Prior to Jun 18	Contract Expenditure – L3 Oceania (Acquisition)	(92.4)	1
	Contract Expenditure – L3 Oceania (Support)	(4.4)	
	Other Contract Payments/Internal Expenses	(13.7)	2
		(110.5)	
FY to Jun 19	Contract Expenditure – L3 Oceania (Acquisition)	(83.7)	1
	Contract Expenditure – L3 Oceania (Support)	(5.8)	
	Other Contract Payments/Internal Expenses	(5.8)	3
		(95.3)	
Jun 19	Total Expenditure	(205.8)	
Jun 19	Remaining Budget	236.8	
	Notes		
1	In addition to this expenditure by Land 53 Phase 1BR, Land 125 Phase 3C has expended \$45.9m against this contract. This reflects a total expenditure of \$222.0m to date by both Land 125 Phase 3C and Land 53 Phase 1BR.		
2	Other expenditure comprises weapons integration, operating expenditure, contractors, legal costs, travel, and other capital expenditure not attributable to the main contracts. The majority of this relates to Thales weapons integration (\$5.8m).		
3	Other expenditure comprises weapons integration, operating expenditure, contractors, travel, and other capital expenditure not attributable to the main contracts.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
89.8	95.8	97.0	PBS to PAES: The variation relates to MYEFO exchange rate update. PAES to Final Plan: The variation relates to PBS exchange rate update.
Variance \$m	6.0	1.2	Total Variance (\$m): 7.2
Variance %	6.7	1.3	Total Variance (%): 8.0

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(0.1)	Australian Industry	
			Foreign Industry	
			Early Processes	

		(1.6)	Defence Processes	The variance of (-\$1.7m) is due to industry delays and savings in weapons integration (-\$0.1m), delay in Tranche 2 trials (-\$0.4m), savings on Service Providers and Tranche 1 consumables and support costs (-\$0.5m) and a pending journal (-\$0.2m). Exchange rate variations totalling (-\$0.5m) occurred during the financial year.
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
97.0	95.3	(1.7)	Total Variance	
		(1.8)	% Variance	

2.3 Details of Project Major Contracts

Major Equipment Received Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
L3 Oceania (Acquisition)	Jul 16	48.5	288.3	Firm	ASDEFCON (Complex)	1, 2
L3 Oceania (Support)	Sep 16	24.9	19.4	Firm	ASDEFCON (Complex)	1, 3
Notes						
1	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, including adjustments for indexation (where applicable).					
2	At signature, this contract was entirely funded by Land 125 Phase 3C and only included Land 125 Phase 3C scope (see Quantities as at Signature). The contract scope was expanded in September 2016 to include Land 53 Phase 1BR systems. Additional quantities of BNVD, LAID, and LAIRD and associated consumable items have been acquired to address repair and attrition requirements, with corresponding increases in price.					
3	The support contract for the equipment acquired by Land 53 Phase 1BR was signed concurrently with the expansion of the acquisition contract to include Land 53 Phase 1BR scope. This contract will support all equipment under the acquisition contract, funded by both Land 125 Phase 3C and Land 53 Phase 1BR.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
L3 Oceania (Acquisition)	4,360 LAIRD 5,010 LAID	19,155 BNVD 14,720 LAID 5,562 LAIRD 4,800 Mounts	The contractor will deliver BNVD, LAID, LAIRD and Mounts.	1, 2		
L3 Oceania (Support)	N/A	N/A	The contractor will support, repair, and maintain the equipment delivered under the acquisition contract.			
Major equipment received and quantities to 30 Jun 19						
14,398 BNVD; 11,633 LAID; 5,455 LAIRD; 3,300 Mounts; and a quantity of spare parts items.						
Notes						
1	The contract includes provision for acquisition of quantities "as required" for repair and attrition stock.					
2	The number of Mounts to be provided is dependent on existing holdings and attrition, as this is an in service item.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	N/A	N/A	N/A	N/A	N/A	1
Preliminary Design	N/A	N/A	N/A	N/A	N/A	1
Critical Design	N/A	N/A	N/A	N/A	N/A	1
Notes						
1	Primary Items are Military Off the Shelf (MOTS), and the contracts include agreed commercial product specifications. Technical Certification of BNVD, LAID and LAIRD was concluded in May 2017, prior to achievement of IMR.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	N/A	N/A	N/A	N/A	0	1
Acceptance	N/A	N/A	N/A	N/A	0	2
Notes						

Project Data Summary Sheets

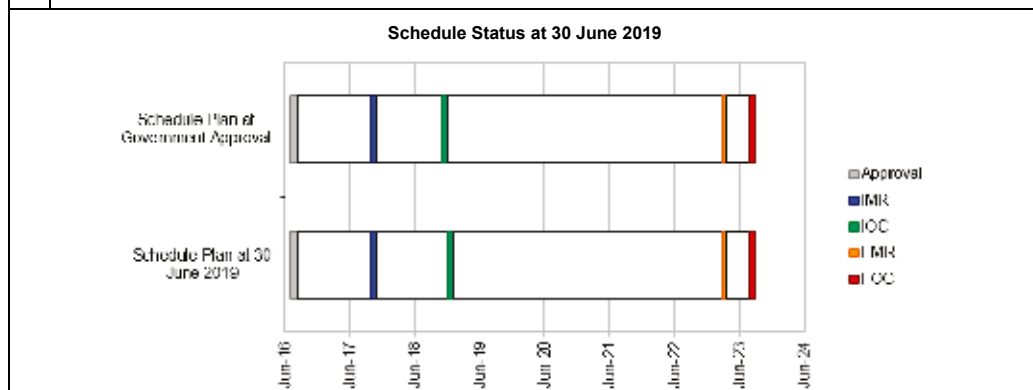
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

1	As the equipment is MOTS, System Integration assessment was undertaken as part of product selection and subsequent technical certification. Contractor Test and Evaluation of Systems Integration is not required as there are no Major System or Platform Variants.
2	Delivery of equipment occurs monthly, in accordance with the contract delivery schedule. Product and Function Compliance Assurance (FCA / PCA) of compliance with the contract specifications is undertaken by the supplier prior to Acceptance.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Nov 17	Nov 17	0	
Materiel Release 2 (MR2)	Nov 18	Dec 18	1	1
Initial Operational Capability (IOC)	Nov 18	Dec 18	1	1
Materiel Release 3 (MR3)	Nov 19	Nov 19	0	
Materiel Release 4 (MR4)	Nov 20	Nov 20	0	
Materiel Release 5 (MR5)	Mar 21	May 21	0	
Final Materiel Release (FMR)	Mar 23	Mar 23	0	2
Final Operational Capability (FOC)	Sep 23	Sep 23	0	2

Notes	
1	Achievement of IOC reflected completion of MR2. The Capability Manager declared IOC in December 2018 and the delay was administrative.
2	FMR is scheduled for two years after the last issue of Tranche 1 equipment to units under the MAA. The MAA will be amended to reflect Governments decision on any Tranche 2 acquisition. Any residual funding from Tranche 1 funding is to be reinvested into Tranche 2 funding in accordance with Government decisions. FOC occurs six months after FMR, enabling alignment of those milestones with the supply of Tranche 2 equipment, if approved.



Notes	
Forecast dates in Section 3 are excluded from the scope of the review.	

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
<p>100%</p>	Green: The project is currently meeting the Materiel Capability Requirements as expressed in the Materiel Acquisition Agreement.
	Amber:
	Red:

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR constituted the delivery and acceptance of 807 BNVD, 390 LAID, 416 LAIRD, 177 Mounts and 807 Harnesses to the ADF. IMR was achieved in November 2017.	Achieved
Initial Operational Capability (IOC)	IOC constituted the acceptance, delivery and certification of equipment into a Combat Brigade with associated support systems including training, facilities and supplies. IOC was declared in December 2018.	Achieved
Final Materiel Release (FMR)	FMR includes the delivery and acceptance of the Tranche 1 Mission System defined as 18760 BNVD, 14400 LAID, 4360 LAIRD, up to 2792 Helmet Mounts and up to 9380 Head Harnesses. FMR also includes the delivery and acceptance of a Support System comprising a Loan Pool and Repair and Attrition Stock (which will be acquired as required). The Loan Pool is defined as 2008 BNVD, 3129 LAID, 946 LAIRD, 2008 Helmet Mounts and up to 1413 Head Harnesses. FMR is forecast to be achieved in March 2023. The constitution of FMR may be altered by the approval of Tranche 2.	Not Yet Achieved
Final Operational Capability (FOC)	FOC constitutes acceptance, delivery and certification of all equipment and a support system, approval of the training system and confirmation that all updates to doctrine and policy are achieved. FOC is forecast to be achieved in September 2023. The constitution of FOC may be altered by the approval of Tranche 2.	Not Yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
N/A	N/A
Notes	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	8	9	10	10	8	9	63
	Explanation	Project Maturity Scores reflect delivery of Tranche 1 outcomes only, and will be reviewed subject to approval of Tranche 2 by Government. <ul style="list-style-type: none">Schedule: IOC was achieved as scheduled in 2018 and the project is confident FOC will be achieved in 2023.Requirement: IOC was declared in 2018 and the support arrangements are being monitored.Technical Understanding: IOC was declared in 2018. The Tranche 1 capability and technology is fully understood and proven.Technical Difficulty: IOC was declared in 2018. Tranche 1 design has been validated.							

Project Stage	Maturity Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ & Test	55
Complete Acceptance Testing	57
Initial Materiel Release (IMR)	60
Final Materiel Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance Into Service	67
Project Completion	70

2018-19 DMO MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	MAJGEN Andrew Bottrell
Branch Head	BRIG David Smith
Project Director	Emma Enever
Project Manager	Mark Newman

Project Data Summary Sheet¹⁶²

Project Number	SEA 1442 Phase 4
Project Name	MARITIME COMMUNICATIONS MODERNISATION
First Year Reported in the MPR	2014-15
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Dec 10
Government 2nd Pass Approval	Jul 13
Budget at 2 nd Pass Approval	\$385.6m
Total Approved Budget (Current)	\$440.0m
2018–19 Budget	\$21.8m
Project Stage	Detailed Design Review
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA 1442 Phase 4 will upgrade the communications capability in the eight Anzac Class Frigates and address communications system obsolescence in the Class, by modernising it with improved communications management, secure voice and tactical intercom, red/black switching, tactical radios and a high data rate line-of-sight capability. The project will also deliver support systems, a secondary Maritime Tactical Wide Area Network (MTWAN) Shore Gateway and upgrade the Anzac Combat System Trainer Communications Terminals.

1.2 Current Status

Cost Performance

In-year

This year the project has spent \$8.7m to 30 June 2019 of a budget of \$21.8m. The \$13.1m underspend is due to **delays in first ship installation which has resulted in lower than anticipated dockyard costs. Other delays have been incurred in activities relating to completion of ship installation including the training rig, delays in expenditure against the contract change proposal for spares and a change in required delivery times for spares, delay in completing work on power distribution panel and ship's books updates.**

Project Financial Assurance Statement

As at 30 June 2019, project SEA 1442 Phase 4 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Key milestones achieved so far include: MTWAN Secondary Shore Gateway; Prime Contract Integrated Baseline Review (IBR), System Definition Review (SDR), Preliminary Design Review (PDR), New Generation Maritime Communications System (NewGen MCS) Detailed Design Review (DDR), Support System Detailed Design Review (SSDDR), Anzac First of Class Installation Detailed Design Review (IDDR). DDR was delayed by 4 months due to delay in completion of design activities by the contractor which resulted in liquidated damages being invoked during the 2016/2017 Financial Year and accepted by the Commonwealth in the form of additional goods and services provided by the contractor.

The SEA 1442 Phase 4 delivery and installation schedule has been aligned to the Anzac Midlife Capability Assurance Program (AMCAP) scheduling and this alignment of programs has resulted in the SEA1442 Phase 4 Initial Materiel Release (IMR) moving from August to December 2019 and Final Operating Capability (FOC) moving from December 23 to **January 25** with no impact to Navy ship availability.

162 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Materiel Capability Delivery Performance

The MTWAN Secondary Shore Gateway has been delivered and is operational. The first Anzac ship capability with associated support systems is scheduled for delivery in December 2019.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

SEA 1442 (Maritime Communications Modernisation) is a multi-phased program that will modernise the Royal Australian Navy's (RAN) communications infrastructure. The preceding phase (Phase 3) delivered an initial MTWAN and Message Handling System to the RAN's Major Fleet Units.

SEA 1442 Phase 4 will address critical obsolescence problems affecting the communication systems in the RAN Anzac Class frigates. The modernised communications system (NewGen MCS) will be highly integrated and automated to deliver more agile and faster communication and reduce operator intervention. The project scope includes upgrade of various communications systems in the eight Anzac frigates, establishment of a training system at HMAS *Stirling* and a shore integration and test capability at the prime contractor's facility for in-service support, delivery of a secondary MTWAN shore gateway, and upgrade of the Anzac Combat System Trainer Communications Terminals.

The majority of individual equipment and sub-systems is either Military Off The Shelf (MOTS) or Commercial Off The Shelf (COTS). Some development is required and involves functionality enhancements and Australianisation of the MOTS and COTS. The main complexity is in bringing the sub-systems together as a highly integrated and automated system and installation in the ships, cognisant of existing weapons, sensors, emitters, and specific platform requirements.

Government Second Pass approval was achieved in July 2013. Prime acquisition and 5-year support services contracts were awarded to Selex ES Ltd in November 2013 following an open tender process. Selex ES Ltd changed its name to Leonardo MW Ltd in September 2016.

Under the acquisition contract, Leonardo MW will: design, develop and install the NewGen MCS into the eight Anzac Class frigates; design, develop and install the support systems (including a training system and an integration and test capability); and develop and deliver integrated logistic support products. The support services contract will become operative following acceptance of the first Anzac frigate and the associated support systems.

The project is also managing the acquisition of ARC-210 Gen 5 V/UHF multi-band multi-mode software defined radios through FMS with the US Government. The radios form part of the NewGen MCS.

Uniqueness

An advanced feature of the system includes a unique radio frequency distribution system that will allow automated and efficient switching of the multitude of radios and antennae on each ship in order to establish the most effective communications path.

The high data rate line of sight system is a new capability and will be a step towards enabling the RAN to operate in a satellite denied environment and enable more efficient ship-to-ship communication.

Major Risks and Issues

The key risks for this project include: platform integration matters such as varying ship configurations, other concurrent activities on the ships during installation, and integration into the complex electromagnetic environment of the Anzac Class Frigates. Availability of sufficient resources, milestone delays due to under-estimating the time required to complete the work and the Communications Control & Management System (CCMS) not being delivered with full functionality and risks associated with training of the ships crews. Issues faced by the Project include the **preparedness for Navy training as well as delays to several acceptance milestones**.

Other Current Related Projects/Phases

N/A

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Dec 10	Original Approved	11.4	
Jul 13	Government Second Pass Approval	374.2	
	Total at Second Pass approval	385.6	
Dec 18	Exchange Variation	54.4	
Dec 18	Total Budget	440.0	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Leonardo MW	(137.0)	1
	Contract Expenditure – US Government	(15.1)	1
	Other Contract Payments / Internal Expenses	(15.6)	2
		(167.7)	
FY to Jun 19	Contract Expenditure –Leonardo MW	(2.7)	1

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	Other Contract Payments / Internal Expenses	(6.0)	1
		(8.7)	3
Jun 19	Total Expenditure	(176.4)	
Jun 19	Remaining Budget	263.6	
Notes			
1	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
2	Other expenditure comprises \$5.9m for Pre-contract work with Leonardo MW, \$2.2m for technical and engineering support , \$2.1m for other pre Second Pass studies and work, \$0.5m for Shore Gateway West, \$0.3m for legal services, \$0.2m for the Shore Integration Facility, \$1.5m for Viasat modems, \$0.3m for AVA-20 Antennas, \$0.2m for WAMA support, \$0.1m for the High Data Rate Line of Sight (HDRLOS) integration Study and \$2.3m for other minor contract expenditure, project management costs and travel.		
3	Other expenditure comprises \$2.5m for a Multicoupler , \$1.5m for Operations Room upgrade , \$1.4m for contractor support , \$0.3m Power Distribution Panel replacement and \$0.3m for other minor contract expenditure, project management costs and travel.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
36.7	36.7	21.8	PBS to PAES Nil variation PAES to Final Plan – delays in processing a Contract Change and the associated expenditure for acquisition of spares due to delays in ship 1 installation activates being completed.
Variance \$m	(0)	(14.9)	Total Variance (\$m): (14.9)
Variance %	(0)	(40.6)	Total Variance (%): (40.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(13.1)	Australian Industry	Underspend is due to delays in first ship installation which has resulted in lower than anticipated dockyard costs . Other delays have been incurred in activities relating to completion of ship installation including the training rig, delays in expenditure against the contract change proposal for spares and a change in required delivery times for spares, delay in completing work on power distribution panel and ship's books updates.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
21.8	8.7	(13.1)	Total Variance	
		(60.1)	% Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Leonardo MW	Nov 2013	187.7	245.1	Variable	ASDEFCON Strategic	1, 2, 3
US Government (AT-P-BSH)	Dec 2014	17.0	15.5	Firm	FMS	1, 3, 4
Notes						
1	Contract value is based on actual expenditure and remaining commitment based on the commitment report as well as the Australian dollar value for Contract Change Proposal CCP-012 which was executed as at 18 December 2018 . CCP-012 incorporates the 'Not to Exceed' amount for the approved recommended spare parts list into the Acquisition Contract.					
2	In addition to Note 1 above, the variation in Leonardo MW contract price at 30 June 2019 is due to fluctuations in exchange rates.					
3	The scope of this contract is explained further below.					
4	Change in FMS value is due to acceptance of Amendment number 1 to FMS case AT-P-BSH. Decrease in FMS value is due to lower unit prices and associated costs for technical assistance and administration fees.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Leonardo MW	See scope	See scope	8 ship mission systems 1 training system 1 Shore Integration and Test facility 3 deployable High Data Rate line-of-sight systems			
US Government (AT-P-BSH)	131	140	ARC-210 Gen 5 radios, technical data, and technical support.	1		

Major equipment received and quantities to 30 June 19	
1	Additional radios ordered as spare parts.
MTWAN Secondary Gateway has been accepted.	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Fo recast	Variance (Months)	Notes
System Requirements	NewGen MCS and Support System	Sep 14	N/A	Dec 14	3	1
Preliminary Design	NewGen MCS and Support System	May 15	Sep 15	Sep 15	4	2
Detailed Design	MTWAN Secondary Gateway	Sep 14	N/A	Jan 15	4	3
	NewGen MCS	Oct 16	N/A	Feb 17	4	4
	Support System	Apr 17	Jun 17	Sep 17	5	5
	First of Class Integration Detailed Design Review (IDDR)	May 17	N/A	Oct 17	5	6
Notes						
1	Delayed from originally planned due to slow ramp up/contractor performance.					
2	Contract schedule re-baselined to reflect previous (SDR) milestone slippage and contractor's improved understanding of the work.					
3	MTWAN System Requirements and Preliminary Design addressed prior to Second Pass Approval. In order to minimise risk to the operational network upon connection of the MTWAN Secondary Gateway, a demonstration of the design in the MTWAN shore integration facility was requested prior to design acceptance. This required additional time to complete.					
4	The conduct of the Detailed Design Review (DDR) and its associated system demonstration occurred four months later than the contracted date which triggered liquidated damages.					
5	The Contractor achieved the Support System DDR in September 2017 (five months later than the Contract Date due to delays resulting from the later than planned achievement of DDR).					
6	The Contractor achieved the First of Class Integration Detailed Design Review (IDDR) in October 2017 (five months later than the Contract Date due to delays resulting from the later than planned achievement of DDR).					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Fo recast	Variance (Months)	Notes
System Integration	NewGen MCS	Jun 18	Dec 19	Oct 19	16	1
Acceptance	MTWAN Secondary Gateway	Apr 15	N/A	Mar 15	(1)	
	Training System	Jun 17	Nov 18	Sep 19	27	2
	Shore Integration and Test Facility (SITF)	Dec 16	Mar 19	Sep 19	33	3
	Ship #1	Jun 18	Dec 19	Oct 19	16	1, 4
	Ship #2	Apr 19	Aug 20	May 20	13	4
	Ship #3	Nov 19	May 21	Feb 21	15	4
	Ship #4	Jun 20	Dec 21	Sep 21	15	4
	Ship #5	Feb 21	Oct 22	Jun 22	16	4
	Ship #6	Sep 21	Apr 23	Dec 22	15	4
	Ship #7	Apr 22	Dec 23	Oct 23	18	4
	Ship #8	Sep 22	Jun 24	Apr 24	19	4
Notes						
1	The Contract Master Schedule (CMS) dated 20 June 2019 indicated that the Ship #1 Acceptance Date would occur in October 2019 (two months earlier than the updated Contract Date). This revised forecast reflects the alignment of SEA1442 Phase 4 with the planned AMCAP dates as at April 2019.					
2	Contract Change Proposal (CCP-011) of 25 June 2018 included an adjustment of the schedule for this Milestone. The CMS dated 20 June 2019 indicates a September 2019 achievement date for this Milestone, being ten months later than the updated Contract Date.					
3	SITF acceptance date initially incorrectly positioned in the contract. The delay is due to the need to use the SITF during Ship # 1 test and acceptance period which was extended when SEA1442 Phase 4 was aligned to AMCAP. The CMS dated 20 June 2019 indicated a September 2019 achievement date for this Milestone, being six months later than the updated Contract Date.					
4	Ship availability and schedule is driven by AMCAP. Whilst the availability dates for Ships #1-#3 have been agreed, the availability dates for the remaining ships is subject to change. Forecast dates have been aligned with the AMCAP dates as at April 2019, which is seeking to deliver earlier than contracted. Leonardo MW to be advised 90 days prior to commencement of each ship installation period.					

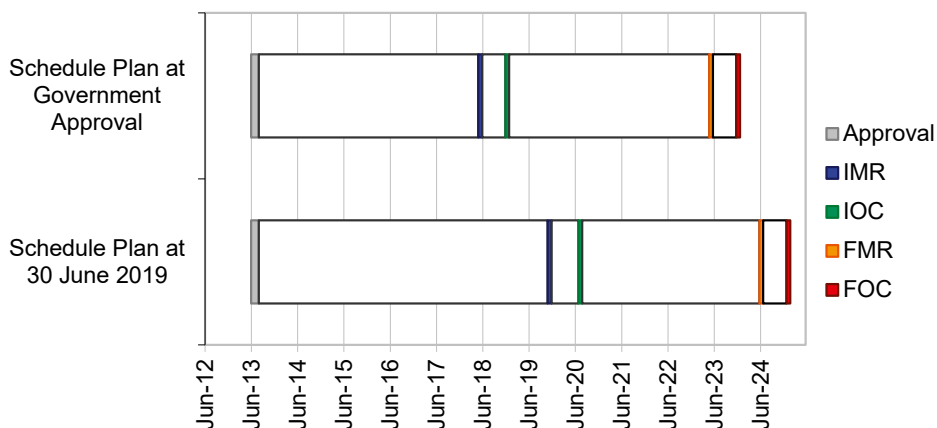
Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jun 18	Dec 19	18	1
Initial Operational Capability (IOC)	Dec 18	Jul 20	19	2
Materiel Release 2 – Ship # 2	Apr 19	Aug 20	16	1
Materiel Release 3 – Ship # 3	Dec 19	May 21	17	1
Materiel Release 4 – Ship # 4	Aug 20	Dec 21	16	1
Materiel Release 5 – Ship # 5	Apr 21	Oct 22	18	1
Materiel Release 6 – Ship # 6	Dec 21	Apr 23	16	1
Materiel Release 7 – Ship # 7	Aug 22	Dec 23	16	1
Final Materiel Release (FMR)	May 23	Jun 24	13	1
Final Operational Capability (FOC)	Dec 23	Jan 25	13	2

Schedule Status at 30 June 2019



Notes

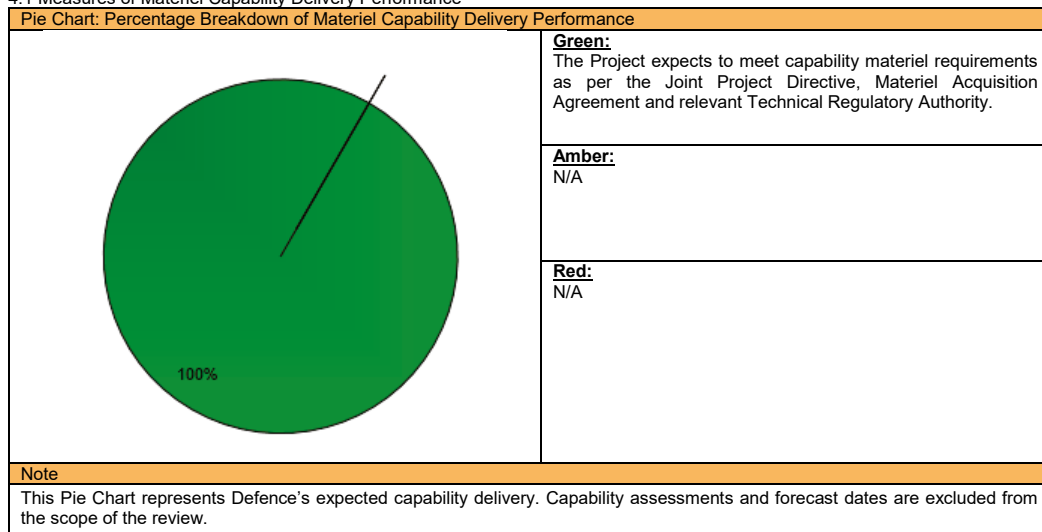
- 1 See Section 3.2 Note 4 for detail.
- 2 **IOC and FOC have now been forecast 6 months later to allow for Navy conducted processes following completion of IMR and Final Ship Acceptance.**

Note

Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Material Release, Initial Operational Capability, Final Material Release and Final Operational Capability.

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Ship 1 acceptance, training system, shore integration and test facility, ship 1 crew training, and support arrangements in place. IMR is expected to be achieved in December 19.	Not yet achieved.
Initial Operational Capability (IOC)	ANZAC Class ship fitted with the new equipment and proven through testing to communicate with other platforms using voice, High Frequency Internet Protocol and High Data Rate Line of sight. IOC expected to be achieved in July 20.	Not yet achieved
Final Materiel Release (FMR)	All 8 ships accepted and all support arrangements in place. FMR is expected to be achieved in June 24.	Not yet achieved.
Final Operational Capability (FOC)	Operational Release and FMR have been met and endorsed by CN. FOC is expected to be achieved in January 25. FOC will occur when all 8 Ships have been Accepted and all Crew Training has been successfully completed, and the Support System elements are in place and running in accordance with respective Contract requirements.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Platform Integration – There is a chance that installation completion will be affected by other AMCAP activities which are being conducted on the ship concurrently with each SEA 1442 installation.	<ul style="list-style-type: none"> Work collaboratively on the Integrated Master Schedule (IMS) with the Contractor, ANZAC System Program Office (SPO) and the AMCAP. Continue to liaise closely with ANZAC SPO and the AMCAP through established working groups and regular meetings to monitor the progress of the installation. In consultation and collaboration with AMCAP, manage schedule throughout the installation to limit interruptions and avoid conflicts with other activities and re-plan if necessary.
Platform Integration – There is a chance that installation will be affected by unknown or late changes to ship configuration .	<ul style="list-style-type: none"> Continue to work collaboratively with the ANZAC SPO through established working groups and regular meetings to monitor changes to ship configuration. In consultation and collaboration with AMCAP, ensure site surveys are conducted as late as possible prior to installation to verify ship configuration and modify installation design if necessary.
Platform Integration – There is a chance that system	<ul style="list-style-type: none"> The Contractor has conducted an Electromagnetic

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

performance may be affected by integration into the complex electromagnetic environment of the Anzac Class Frigates.	<ul style="list-style-type: none"> Environmental Effects (E3) program which involves co-site performance analysis, measurements and modelling. If issues arise, the Project Team will implement the recommended engineering and procedural processes to address the issues.
System Integration – There is a chance that system design will be affected by unavailability, complexity, or changing external and legacy interfaces.	<ul style="list-style-type: none"> Continue to liaise closely with ANZAC SPO and the AMCAP through established working groups and regular meetings to monitor any changes to the external or legacy interfaces. Respond to any incompatibility with integrated components in a collaborative fashion with AMCAP to determine remedial action that best suits the project and the Navy.
Resourcing – There is a chance that the project will be affected by a lack of staff.	<ul style="list-style-type: none"> Continue to monitor human resource requirement through the life of the SEA 1442 Phase 4 project to ensure that it meets its obligations under the contract with the Contractor, its partnership with the AMCAP and its commitment to the Navy. Where required, continue to recruit to replace as quickly as possible and utilise contracted support as necessary.
Milestone Delay – There is a chance that a milestone is delayed due to under-estimating the time required to complete the work.	<ul style="list-style-type: none"> Continue to review the project's schedule and its critical path to monitor risk and areas of slippage. Work collaboratively with the Contractor, the AMCAP or other stakeholders as necessary to address root causes and identify relevant remediation strategies. This risk has been downgraded to Medium as the potential impact from milestone delays is reducing.
Training Facility – There is a chance that delays in the preparation of the Training Room may result in Contractor claims for excusable delay and lost schedule.	<ul style="list-style-type: none"> Continue to work with the WAMA to expedite the allocation of this task.
Training System – There is a chance that an adequate training system is not delivered in time to train the Ship 1 crew.	<ul style="list-style-type: none"> Remedial action being progressed to ensure delivery of Ship 1 is not impacted. Contract an additional resource within the Project Team to manage the Training function.
CCMS – There is a chance that the CCMS may not be delivered with full functionality, which may result in a loss of schedule and or system performance.	<ul style="list-style-type: none"> Continue to work with the Contractor to ensure sufficient resources are allocated to delivering the CCMS with the prescribed level of functionality as scheduled.
Availability of Crew for Training – There is a chance that insufficient ship's crew will be trained to meet Ship 1, leading to an impact on schedule or performance.	<ul style="list-style-type: none"> Continue to liaise with Navy to agree training dates as early as possible. Contract an additional resource within the Project Team to manage the Training function.
Emergent Risks (risk not previously identified but has emerged during 2018–19)	
Description	Remedial Action
N/A	N/A

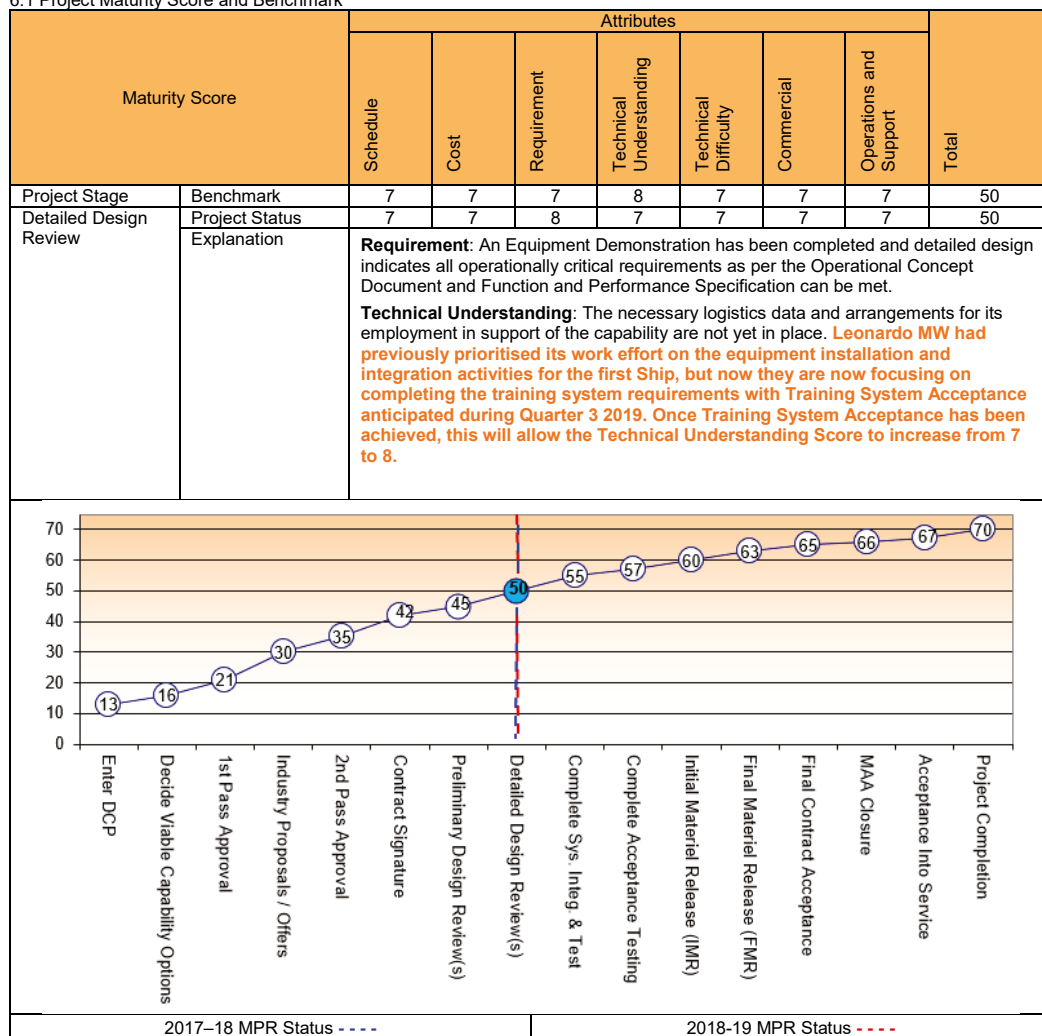
5.2 Major Project Issues

Description	Remedial Action
Non-recurring Sustainment Costs not yet defined - Analysis of non-recurring sustainment costs is incomplete.	<ul style="list-style-type: none"> Through the bi-annual IIP Update process, Government agreed to the combining of the SEA 1442 Phase 4.S2 unapproved sustainment budget and SEA 1442 Phase 5 unapproved budgets. The Capability Manager has indicated that sustainment of the delivered SEA 1442 Phase 4 capability will be managed from within the existing sustainment allocation. The alignment of this project to the AMCAP program significantly reduced the risk to sustaining the capability through to the current Planned Withdrawal Dates (PWD) of the Anzac Class ships. Any changes to PWD will include funding for the continued sustainment of the SEA 1442 Phase 4 delivered capability. This issue is now closed.
The installation baseline will change as a result of the SEA 1448 Phase 4B mast change being incorporated into the ship program.	<ul style="list-style-type: none"> The Project Team worked with the ANZAC SPO and AMCAP to manage this change. The Contractor prepared revised installation plans at additional cost (minor) to the project. This issue is now closed.
Preparedness for Training – The Training Program was	<ul style="list-style-type: none"> The Project Team worked with the contractor and Navy

not completely ready in time for the commencement of Navy Training.	<p>Training to modify the initial course/s to allow training to commence as planned with subsequent 'Delta' courses being provided by the contractor to cover topics not able to be taught initially.</p> <ul style="list-style-type: none"> The TNGRR was progressed with known deficiencies to allow training to commence in support of Ship 1 readiness. To enter the next Milestone Review, the Contractor is required to ensure risks associated with the Training Program are mitigated to the level acceptable to the Commonwealth.
Milestone Delays –Three Contract Milestones are in delay by the Contractor; SITF and Training System Acceptance & the Ship 1 Installation Complete Milestone.	<ul style="list-style-type: none"> This delay is being actively managed by the Project Team and Contractor to ensure the impact does not affect First of Class activities and to maintain Ship 1 Acceptance Milestones.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure requirements are clear, unambiguous, and that a common understanding is established between all parties as early as possible, including the Capability Acquisition and Sustainment Group, Capability Manager, end-user community and the contractor.	Requirements Management
Interfaces, and in particular legacy interfaces, need to be well defined, consistent, documented, and well understood by all parties. The risk profile and associated contingency needs to include interface management.	Requirements Management
More attention needs to be given to the possible impacts when tailoring the ASDEFCON suite of contracting templates to suit individual project context and strategy in order to avoid unnecessary detail, resource burden, cost and schedule.	Contract Management
Additional effort is required by the project team during contract negotiations to assess and better understand scope, schedule, risk, cost and resource commitments made under the contract, including an assessment that the schedule is realistic.	Contract Management
The use or re-use of extant system components or Government Furnished Material requires additional clarity and understanding on the serviceable status of equipment, responsibility for repair and/or replacement as well as the management responsibilities of these assets.	Contract Management

Section 8 – Project Line Management

Position	Name
Division Head	Mr Ivan Zlabur
Branch Head	Ms Myra Sefton
Project Director	Mr Peter Henrick
Project Manager	Mr Simon Russell

Project Data Summary Sheet¹⁶³

Project Number	JP 2072 Phase 2A
Project Name	BATTLESPACE COMMUNICATIONS SYSTEM
First Year Reported in the MPR	2012-13
Capability Type	Replacement
Acquisition Type	MOTS
Capability Manager	Chief of Army
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 11
Budget at 2 nd Pass Approval	\$436.4m
Total Approved Budget (Current)	\$438.1m
2018-19 Budget	\$5.6m
Project Stage	Acceptance Into Service
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

Joint Project 2072 Battlespace Communications System (Land) (BCS(L)) Phase 2A has delivered approximately 11,000 Combat Radios and ancillary equipment to replace the Wagtail, Pintail and Raven fleets for the majority of the Land Force. Phase 2A has also established the mature support system for the new generation Combat and Tactical Data Radios.

1.2 Current Status

Cost Performance

In-year

The project has spent **\$3.6m** against a budget of **\$5.6m (YTD)** with the underspend due **delays in engaging contractor support for System Architecture engineering activities and delays in completing stock replenishment procurements.**

Project Financial Assurance Statement

As at 30 June 2019, Project JP 2072 Phase 2A has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

- Contract Signature (Acquisition) was achieved in March 2012. The first delivery of Phase 2A Combat Radios and ancillaries into service was achieved in November 2012. Contract Signature (Support) was achieved May 2015 (Harris Mature Support Contract) for Combat Radio, and forecast for October 2015 for Tactical Data Radio (Raytheon Mature Support Contract signed December 2015). Initial Materiel Release (IMR) and Initial Operational Capability (IOC) were achieved on 30 April 2014. While the IMR and IOC signatures were delayed by seven months due to the acceptance process, the rollout of the capability to units was unaffected.
- Preliminary Design Review was achieved in March 2015 establishing a functional baseline from the Functional Performance Specification document. Full Design Acceptance of the six dismounted communications nodes was achieved in December 2016. **The project achieved FMR in January 2019 and has commenced project closure activities. Army plans to declare Final Operational Capability (FOC) by September 2019. It is planned that project closure will be achieved by end 2019.**

163 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Matériel Capability Delivery Performance

The radio equipment and components that form this capability were already introduced into service under JP 2072 Phase 1 as bearers for the Battle Management System (BMS); Phase 2A extends the utility of the radio equipment for dismounted voice communications. The rollout to end users is complete according to the approved Basis of Issue (the schedule which identifies equipment entitlements by unit).

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Program Overview

- The overall JP 2072 program, BCS(L), will provide an integrated communications system to support forces deployed in the land environment through a combination of new equipment to replace ageing radio fleets and enhancements/upgrades to current communications systems. Phase 1 provided communication systems for integration into the Battle Group and Below Command, Control and Communications capability being delivered in conjunction with LAND 75 and LAND 125 (the three projects commonly known as LAND 200).

Phase 2A

- Phase 2A is continuing the rollout of products selected during Phase 1 to primarily provide voice services to dismounted users. Phase 2A will also establish a mature support system for ongoing sustainment of the Phases 1 and 2A matériel systems and contribute to ongoing Prime System Integration activities to evolve the BCS(L) design. Investigation and/or market survey activities will be conducted to specify and identify products for potential procurement in future phases.

Acquisition

- The primary objective of Phase 2A is to replace and enhance the existing dismounted voice communications capability currently provided by Wagtail, Pintail and Raven High Frequency (HF) and Ultra High Frequency/Very High Frequency (UHF/VHF) radios for Army, Air Force and Navy units. Phase 2A is also providing equipment for mounted (vehicle) installation and base station (RAAF) however the integration of mounted equipment into vehicles is outside the scope of JP 2072.
- To achieve this objective, Phase 2A maximises commonality and minimises ongoing support costs through delivery of 'more of the same' of the Phase 1 capability including: radios, ancillaries, cryptographic management equipment, load carriage equipment, training and interim support services.

In-Service Support Contract

- Under Phase 1, a three year interim support contract for the support of acquired matériel was executed early 2011. The interim support contract contained provisions for maintenance, training and capability introduction services from both Harris Corporation and Raytheon Australia as the Original Equipment Manufacturers. The mechanism for interim support consisted of Field Service Representatives, plus support staff and three facilities in Southern Queensland at Newstead, Pinkenba (Harris) and Amberley (Raytheon). The mature support acquisition strategy aligns with this interim support model due to United States (US) International Trade in Arms Regulations (ITAR) constraints.
- Phase 2A enhanced the contract with Harris Corporation to include management and storage of the increased equipment order. Phase 2A has established mature support contracts for the ongoing sustainment of the Phases 1 and 2A equipment with Harris Communications (Australia) and Raytheon Australia. Phase 2A **has** also transitioned management of the mature support contracts to sustainment by Battlespace Communications Operations Group.

Uniqueness

The radios delivered in Phase 2A are subject to US ITAR restrictions and other handling and management requirements. This has limited the options for sourcing of equipment suppliers; required change to the methodologies for supporting and maintaining equipment; affected the transfer of equipment into country and introduced different end user skills, training and working requirements.

Phase 2A procured 'more of the same' radios as originally delivered in Phase 1 and originally defined for interoperability with the BMS. However, the configurations of Phase 2A 'Nodes' or how the equipment is employed needed to be defined prior to achievement of IOC for the BMS, therefore changes to the configurations or operation of BMS and communications equipment may have follow on effects to the systems being rolled out under JP 2072. The establishment of mature support therefore incorporates provision for mass upgrades of equipment in minimal timeframes.

Unlike Phase 1, the equipment delivered under Phase 2A is mainly for use in a standalone voice communications role, which requires different ancillaries such as load carriage pouches, headsets and battery chargers. Many of these items required amendment/inclusion into existing design acceptance without affecting fundamental design or introducing new risks.

Major Risks and Issues

1. While the equipment components are already introduced into service, the specific configurations or 'Nodes' for dismounted voice communications roles have been subject to user requirements validation by Army and RAAF. This user validation of the baselined Nodes has resulted in some reconfiguration (limited within approved scope) to address fitness for purpose and weight considerations.

This issue is now assessed as a medium risk. The Project is now working with the Capability Manager, Army, to assist it to declare FOC. Once FOC is declared, the project will close.

2. **There is a risk that loss/exit of key personnel within JP 2072 program will impact on Phase 2A core responsibilities due to limited project staffing. As a mitigation for this risk, the project now has personnel dedicated to working on closing the project. As a result of this risk mitigation action, the risk is assessed as medium.**

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Other Current Related Projects/Phases

JP 2072 Phase 1, BCS(L): The initial phase of the JP 2072 program, this project has delivered communications bearers to the BMS, and enhancing communications for Australian Defence Force Land elements through the development of an holistic battlespace communications architecture for the Land environment.

LAND 2072 Phase 2B, BCS(L): Phase 2B will provide the BCS(L) deployed, wide-band backbone by replacing and enhancing the existing Battlefield Telecommunications Network (BTN) capability within Army and Air Force. The end-state is a BTN which provides greater capacity, effective switching, wireless and wired network infrastructure supporting secure voice, data and video services. Phase 2B will also integrate the Second Generation Deployable Local Area Networks, including servers and user terminals, as well as deliver a Terrestrial Range Extension System to extend the range of Phase 1 networks.

LAND 2072 Phase 3, BCS(L): This project will introduce into service a digital communication backbone for land based elements of the Australian Defence Force (ADF) and their enabling elements. The capability is aligned with LAND 75 Phase 4 as part of a second tranche of LAND 200 with the capability being a vital function of the BMS. This phase will enhance the digital communications backbone delivered under previous phases, expand the provisioning to additional land forces and ADF elements, and provide a new capability to support the distribution and data management of the land Battlespace.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance**2.1 Project Budget (out-turned) and Expenditure History**

Date	Description	\$m	Notes
	Project Budget		
Nov 11	Original Approved (Second Pass Approval)	436.4	1
Oct 17	Real Variation – Real Cost Decrease	(25.6)	
Jun 19	Exchange Variation	27.3	
Jun 19	Total Budget	438.1	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Harris Corp – Acquisition	(240.1)	2
	Contract Expenditure – Harris Corp – Support	(23.7)	
	Contract Expenditure – Harris Corp – Follow on	(19.2)	
	Contract Expenditure – Harris Corp – Mature Support	(7.0)	
	Other Contract Payments / Internal Expenses	(82.6)	
		(372.6)	
FY to Jun 19	Other Contract Payments / Internal Expenses	3.6	3
		(3.6)	
Jun 19	Total Expenditure	(376.2)	
Jun 19	Remaining Budget	61.9	
Notes			
1	Funds transferred to LAND 200 Tranche 2 to offset in-year shortfalls against the project's capital provision.		
2	Other expenditure included: Attrition Spares, travel, introduction into service training expenses, contractor support and JP 2072 Prime Systems Integrator capability studies. Within the engineering scope of Phase 2A, the Risk Reduction Activity took place to better inform JP2072 Phase 3 and LAND 200 activities (24.9), Enhanced Position Location Reporting System (EPLRS) radio spares (9.9), ancillaries & minor equipment purchase (17.0), Key Loader Cryptographic devices (10.2), test sets (4.2), training racks (2.7), contractor support (7.6), engineering studies (1.7), freight and minor procurements and travel (3.5), Harris Corp standing offer (0.8) and material support activities (0.1).		
3	Other expenditure comprises: Contractor support, travel and freight (2.0) and minor material acquisitions (1.6).		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
5.7	6.7	5.6	<p>PBS – PAES: Variation is for increased costs for communications studies for the development of the Battlespace Communications System (Land) architecture.</p> <p>PAES – Final Plan: Reduction in stock replenishment requirements and reduction in Contractor Support.</p>
Variance \$m	1.0	(1.1)	Total Variance (\$m): (0.1)
Variance %	17.5	(16.4)	Total Variance (%): (1.8)

2.2 B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	Underspend due to delays in engaging contractor support for System Architecture engineering activities and reduction in stock replenishment procurements
			Foreign Industry	
			Early Processes	
		(2)	Defence Processes	
			Foreign Government	
			Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
5.6	3.6	(2)	Total Variance	
		(35.7)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Harris Corporation (Acquisition)	Jan 12	226.3	240.1	Firm	ASDEFCON	1, 2
Harris Corporation (Support)	Mar 12	14.6	23.7	Firm	ASDEFCON	1, 2
Harris Corporation (Follow on)	Oct 12	12.2	19.3	Firm	ASDEFCON	1, 2
Harris Corporation (Mature Support)	May 15	6.6	7.0	Firm	ASDEFCON	1, 2, 3
Notes						
1	<p>The contract with Harris Corporation already established under Phase 1 was utilised to order the Phase 2A supplies. Two key orders were placed under the standing offer provisions of this contract to acquire the Phase 2A equipment and extend the Phase 1 interim support to Phase 2A equipment, including:</p> <ol style="list-style-type: none"> Order for acquisition of Phase 2A equipment; Order for extension of interim support to cover Phase 2A equipment. Harris Corporation utilise US expatriate personnel and an Australian Subsidiary combined to meet requirements; and Follow-on orders placed against the same contract with Harris, including Waveform upgrade and ancillaries including radio pouches/backpacks and waterproof variants. 					
2	Contract value as at 30 June 2019 is based on actual expenditure as the contract is complete.					
3	The total value of this mature support contract is \$69.8m, with \$7.0m initial costs funded by the project and the remaining expenditure to be funded out of the ongoing sustainment budget.					
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 19	Combat ancillaries support.	Net and	Radios, interim	
Harris Corporation	11,638	11,638				1
Major equipment received and quantities to 30 Jun 19						
<p>11,638 radios (100 per cent of total Phase 2A radios) comprising:</p> <ul style="list-style-type: none"> - 9,157 AN/PRC 152 VHF/UHF radios; and - 2,481 AN/PRC 150 HF radios. 						
Notes						
1	Figures include number of radios and exclude number of ancillary items (e.g. antennas, headsets, batteries etc).					

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 3 – Schedule Performance

3.1 Design Review Progress

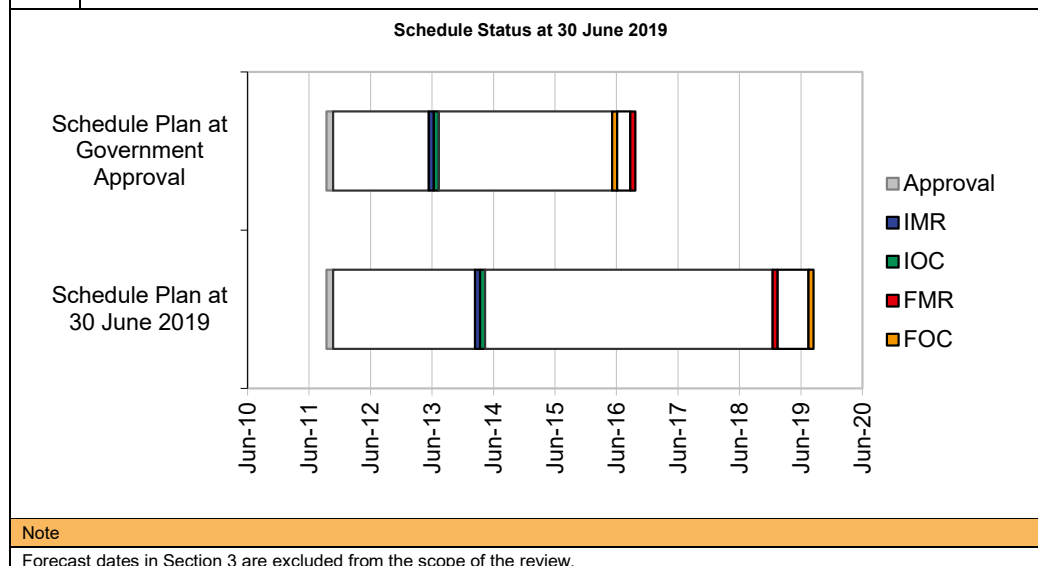
Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	N/A	N/A	N/A	N/A	N/A	1
Preliminary Design	N/A	N/A	N/A	N/A	N/A	1
Critical Design	N/A	N/A	N/A	N/A	N/A	1
Support System Detailed Design	N/A	N/A	N/A	N/A	N/A	1
Notes						
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1 there is no manufacturing design review.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	N/A	N/A	N/A	N/A	N/A	1
Acceptance	N/A	N/A	N/A	N/A	N/A	1
Notes						
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1. Both Harris and Raytheon equipment come complete with full test and evaluation data based upon extensive testing within the Department of Defense (US) and has been given Technical Certification via Capability, Acquisition and Sustainment Group Engineers. Hence there is no contractor test and evaluation. Phase 2A will complete Design Acceptance where several combinations of equipment and components already given Technical Certification are approved as fit for purpose.					

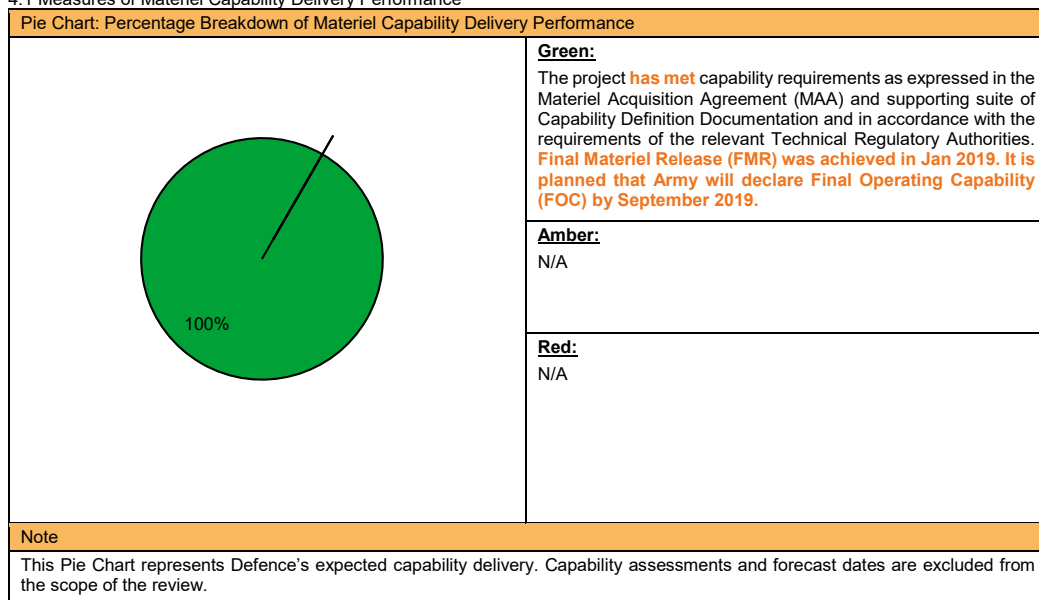
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul – Sep 13	Apr 14	7	1
Initial Operational Capability (IOC)	Jul – Sep 13	Apr 14	7	1
Final Materiel Release (FMR)	Jul – Sep 16	Jan 19	28	2
Final Operational Capability (FOC)	Apr – Jun 16	Sep 19	39	2
Notes				
1	Equipment was delivered on schedule to IMR units in March 2013, however Capability Manager declaration of IMR and IOC was delayed by extended user acceptance of supporting documentation.			
2	The forecast dates have been reviewed following consultation with the Capability Manager. The delay is attributed to rescheduling the Project Management Stakeholder Group meeting, achievement of Technical Certification and availability of key personnel. This is an administrative process and does not adversely affect capability.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR comprises the delivery of 1,332 radios and ancillaries to 7 Brigade and selected Training Establishments in accordance with Basis of Provisioning (BoP) to support Capability Manager IOC activities.	Achieved
Initial Operational Capability (IOC)	IOC constituted the preliminary design, certification and delivery of equipment into 7 Brigade and the commencement of sustainment training in Training Establishments. IOC was declared by the Capability Manager in April 2014.	Achieved
Final Materiel Release (FMR)	Final delivery of 11,638 radios and ancillaries, development and provision of initial training in accordance with full JP 2072 Phase 2A BoP to support Capability Manager FOC activities. Further, the transition of the mature support contract to the support agencies. FMR was achieved in January 2019.	Achieved
Final Operational Capability (FOC)	FOC is the achievement of the design, certification and delivery of a set of dismounted communication nodes incorporating the same types of radios acquired by Phase 1. It also achieves the capability requirements for the remoting solution carried forward from Phase 1. A draft FOC Declaration has been prepared by the Capability Manager Representative. It is planned that Army will declare Final Operating Capability (FOC) by September 2019.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that loss/exit of key personnel within JP 2072 program will impact on Phase 2A core responsibilities due to limited project staffing.	This risk has been downgraded to medium as the project has personnel working to close the project.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

Project Data Summary Sheets

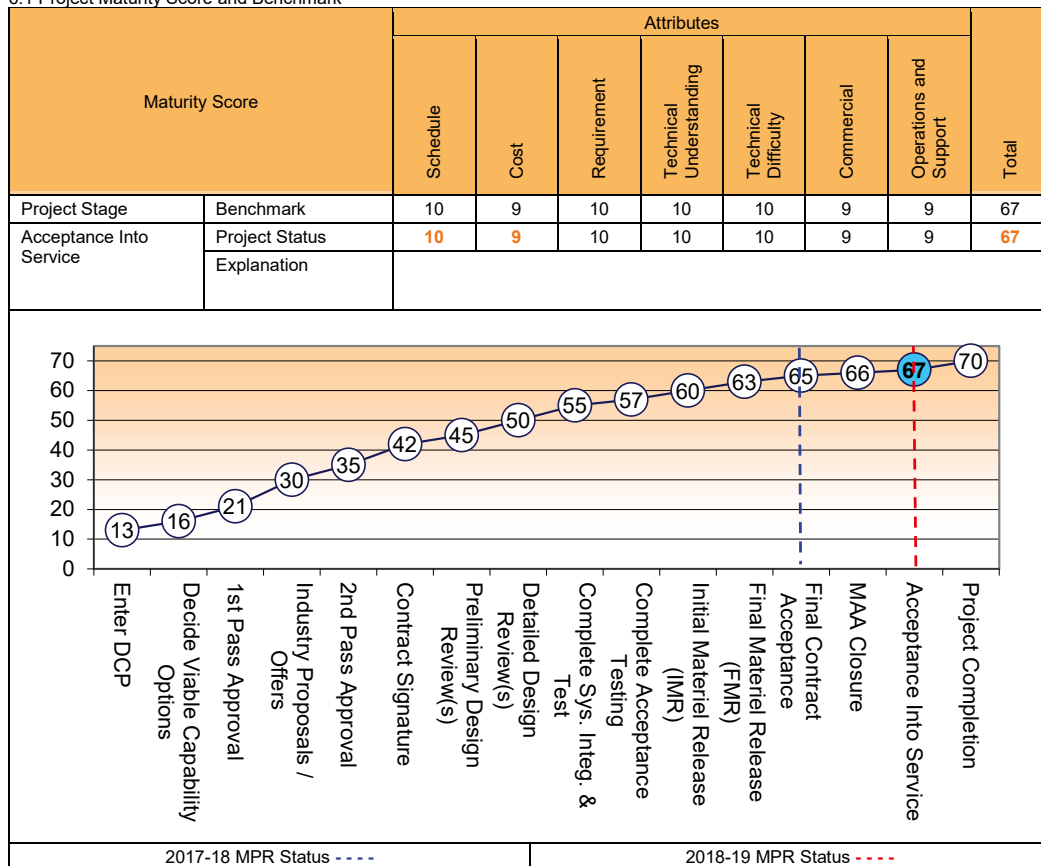
Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

5.2 Major Project Issues

Description	Remedial Action
Some nodes need reconfiguration to address fitness for purpose and safety considerations as part of validation and verification processes.	This issue has been downgraded to a medium risk as Army is implementing changes to the configuration of the nodes.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
JP 2072 is required to provide extensive support and advice to other projects procuring or integrating communications equipment via JP 2072 contracts. New project approvals need to include adequate resources for integration and support of communications systems within their own platforms. The sustainment organisation will need to be prepared to provide program, engineering and logistics support beyond the completion of JP 2072 phases.	Resourcing
Phase 2A delivery of More of the Same equipment required Design Acceptance under Phase 1, which was not achieved. Provisional Design Acceptance was put in place however some minor ancillary equipment defined in the capability baseline was withheld due to fitness for purpose issues. New project approvals should consider the necessary design inputs to ensure they are in place before projects proceed and engineering scope then resourced appropriately.	Requirements Management

There was very limited detail on the levels of support agreed or articulated in the Capability Definition Documentation. Adequate support system was therefore not established in time for delivery of materiel. Future phases require the support system better defined prior to approval, and implemented earlier in the project lifecycle.	Requirements Management
The contracted Field Service Representative (FSR) teams have provided high quality service that has been well received by users and the Capability Manager. For example, in most cases it is more cost effective to locate/move FSR around to units than to send high volumes of equipment back to the Original Equipment Manufacturer facilities (domestic and international) for repairs or bulk upgrades. FSR have developed from an Introduction Into Service function into an increasing, ongoing support requirement for the foreseeable future.	Off-The-Shelf Equipment
An observation from the Independent Assurance Review was the clarity of the Primary Systems Integrator role within Phase 2A and that it was a program level responsibility. Note that after earlier gaining Capability Manager and CIOG approval, ongoing development of the BCS(L) architecture continues via a standard systems engineering process with stakeholder representative input sought for major reviews; the Prime Systems Integration team is involved in other JP 2072 phase reviews to ensure overarching alignment with the BCS(L).	Governance

Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 2019

Position	Name
Division Head	Mr Ivan Zlabur
Branch Head	Ms Myra Sefton
Program Director	Mr Scott Huxtable
Project Manager	Mr Jeff Mules

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁶⁴

Project Number	SEA 1448 Phase 4B
Project Name	ANZAC AIR SEARCH RADAR REPLACEMENT
First Year Reported in the MPR	2018-19
Capability Type	Replacement
Acquisition Type	Developmental
Capability Manager	Chief of Navy
Government 1st Pass Approval	Mar 15
Government 2nd Pass Approval	Jun 17
Budget at 2nd Pass Approval	\$427.8m
Total Approved Budget (Current)	\$428.7m
2018-19 Budget	\$74.7m
Project Stage	Integration and Test
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA1448 Phase 4B is replacing the SPS-49(V)8 Air Search Radar on the 8 Anzac class frigates with a modern digital Long Range Air Search Radar. The project will also replace the existing Identification Friend or Foe (IFF) system with a new system. By replacing the existing air search radar and IFF system, the project will deliver an integrated and supportable modern Long Range Air Search Capability (LRASC) into the Anzac Class Frigates

1.2 Current Status

Cost Performance

In-year

As at 30 June 2019, the project has an underspend of \$11.1m due to a slower than expected recovery of the CEA milestones, primarily associated with the Qualification and Verification System (Q&V) and documentation delivery milestones. The schedule of the second Anzac Midlife Capability Assurance Program (AMCAP) ship, HMAS *Anzac*, has been delayed to accommodate the Navy's Reduced Activity Period and additional capability beyond original scope of AMCAP have resulted in the reprogramming of the production and delivery of subsequent CEA mission systems into FY 2019-2020.

Project Financial Assurance Statement

As at 30 June 2019, project SEA 1448 Phase 4B has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The Project has not applied contingency in the financial year.

Schedule Performance

The project has progressed through the Design phases. The new mast was installed on the First of Class (HMAS Arunta) in December 2018. CEA's first mission system commenced installation on 15th March 2019 and was set to work with the support system in May 2019. Harbour Acceptance Trials (HAT's) expected to conclude in July 2019 with all reports delivered in Q3 2019.

The SEA1448PH4B project will participate in the AMCAP Sea Acceptance Trials (SAT's) period, commencing in July 2019 and scheduled to conclude by October 2019.

Delays in the AMCAP and rescheduling of trials has resulted in a delayed achievement of Initial Materiel Release (IMR) to December 2019.

The Project is coordinating with CEA and the Mode 5 IFF Certification Authority to deliver Mode 5 IFF certifications for the Anzac Class. The certification timeframe will be clarified in quarter 3 2019, which may delay achievement of IMR scheduled for December 2019 and Initial Operational Capability (IOC) scheduled for June 2020.

164 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Material Capability Delivery Performance

The first Anzac ship capability with associated support systems is scheduled for acceptance in December 2019. The second Anzac ship (HMAS *Anzac*) to be is scheduled for acceptance in Quarter 2 2020.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

SEA1448 Phase 4B was entered into the 2009 Defence Capability Plan (DCP) to replace the existing and aging ANZAC Class AN/SPS-49(V)8 Long Range Radar System with a Modern, digital Air Search Radar that complements the capabilities and functionality of the Phased Array Radar System delivered under the SEA1448 Phases 2A and 2B – Anti Ship Missile Defence (ASMD) Program. In addition, the current Identification Friend or Foe (IFF) does not support the next generation of encrypted military IFF (Mode 5) which is required to operate effectively with our Allies as deemed by Vice Chief of the Defence Force (VCDF).

In Mar 2015, at Gate 1 (previously first pass) multiple options were presented to Government, spanning Militarily-Off-The-Shelf (MOTS) and Developmental options. The MOTS solution; an upgraded variant of the AN/SPS-49(V)8 was not progressed further as it did not resolve the obsolescence issues facing the Radar.

Government did approve Defence's proposal to select CEA Technologies Pty Limited (CEA) as the sole Australian provider of Phased Array Radars (PAR) to supply a replacement long range air search radar using the developmental technology successfully installed under the SEA 1448 Phase 2A and 2B ASMD Program. This solution provided a three dimensional PAR with six fixed faces and an integrated IFF Capability. The Mission System Integrator would be undertaken by Industry Participants of the Anzac Warship Asset Management Agreement ((WAMA) (previously Anzac Ship Integration Materiel Support Program Alliance (ASIPA)).

The Project adopted the Smart Buyer Framework proceeding into Gate 2 Government Approval committees throughout the 2016-17 period. In November 2016, Government approved early access to Acquisition Phase funding, to enable the project to progress a number of time-critical activities, prior to Second Pass Approval. This allowed the project to maintain schedule and continue to effectively mitigate 2016/2017 key schedule risks (subsequently retired) that were identified during application of the Smart Buyer framework. Those activities included:

- Advanced material purchases for CEA; and
- BAE to commence Mast production.

In June 2017, at Gate 2, Government approved Defence's proposal to act as the Prime integrator for the Long Range Air Search Capability (LRASC), and that the project has overall responsibility for procuring and managing the key components that make up the final Mission System:

- A new Long Range Air Search Radar (LRASR) with integrated IFF, to be delivered by CEA;
- The integration of the LRASR and IFF system into the Anzac Platform and Combat Management System (CMS), to be delivered by the industry participants under the Anzac Warship Asset Management Agreement (WAMA); and
- Acquisition of supporting equipment (and services) under Foreign Military Sales (FMS).

Production timings and integration of the mission system(s) into the Anzac Class is driven by the AMCAP schedule, managed by the ANZAC System Program Office.

Uniqueness

The CEA technology on which SEA1448 Phase 4B is based is considered to be a Strategic Industry Capability (SIC). The acquisition of which of the PAR will ensure the RAN has regionally superior technology into the future. The IFF system will be integrated into the PAR faces. This is a world leading technological step to have IFF integrated into the PAR faces without a secondary system requirement.

Major Risks and Issues

The Major risks the project faces are:

- The achievement of introduction into service associated with integration activities;
- System certification may not be achieved by Navy's introduction into service date; and
- Navy's expectations as outlined in the Operational Concept Document and Functional Performance Specification that are unable to be confirmed until IOC.

The Major issues the project faces are:

- Contractual deliverables are impacting the forecast spend spread of the project; and
- Coordination of AIMS activities is impacting the planned certification schedule of the IFF equipment.

Other Current related Projects/Phases

SEA1448 Phase 2A/B – ANZAC Ships Anti-Ship Missile Defence upgrade provided the ANZAC Class frigates with an enhanced level of self-defence against modern anti-ship missiles and achieved Final Operating Capability before June 2019.

The deliverables being provided by SEA1448 Phase 4B have been incorporated into the overall ANZAC Midlife Capability Assurance Program (AMCAP) schedule. The ANZAC AMCAP involves a suite of upgrades to the ANZAC platform being delivered by multiple projects, of which SEA1448 Phase 4B is one. Delays or issues with other AMCAP projects can delay the schedule of SEA1448 Phase 4B.

The AMCAP projects consist of:

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

SEA1448 Phase 4A – This Phase delivered a contemporary Electronic Support Measures (ESM) system under the ASMD upgrade program and is being re-installed under the SEA1448PH4B program. SEA1442 Phase 4 – This Phase will upgrade the communication capability in the eight Anzac Class Frigates and address communications system obsolescence in the Class. By modernising it with improved communication management, secure voice and tactical intercom, red/black switching, tactical radios and a high data line-of-sight capability.
Anzac Platform System Remediation (PSR) program – The PSR will see the upgrade of on board systems that includes ventilation, the propulsion control system to improve power and efficiency, waste management and water production systems
Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Oct 13	Original Approved	3.0	1
Jun 14	Real Variation – Scope	5.9	2
May 15	Government First Pass Approval	45.2	3
Jan 17	Real Variation –Scope	20.4	4
Aug 17	Government Second Pass Approval	353.3	
	Total at Second Pass Approval	427.8	
Jun 19	Exchange Variation	0.9	
Jun 19	Total Budget	428.7	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure - CEA	(72.2)	5
	Contract Expenditure - WAMA	(57.1)	
	Other Contract Payments/Internal Expenses	(3.7)	
		(133.0)	
FY to Jun 19	Contract Expenditure - CEA	(31.3)	
	Contract Expenditure - WAMA	(29.7)	
	Other Contract Payments/Internal Expenses	(2.6)	
		(63.6)	
Jun 19	Total Expenditure	(196.6)	
Jun 19	Remaining Budget	232.1	
Notes			
1	The project's original approved budget was the amount received for project initiation prior to Government Second Pass Approval.		
2	To advance the L-Phased Array Radar Risk Reduction Program		
3	Government First Pass approval to advance the progress of the risk reduction program to Gate 2.		
4	Early release of funding to commence activities in advance of Gate 2 Approval.		
5	Other expenses comprises FMS payments, operating expenditure and other capital expenditure not attributable to the listed contracts.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
83.6	88.9	74.7	PBS - PAES: The budget variance is primarily due to payments being delayed from 2017-18 for the Air Search Radar Acquisition Contract. PAES - Final Plan: The revised cash forecast is primarily associated with reprogramming of the Air Search Radar Acquisition Contract deliverables into FY 2019-2020 to align with the AMCAP.
Variance \$m	5.3	(14.2)	Total Variance (\$m): (8.9)
Variance %	6.3	(16.0)	Total Variance (%): (10.6)%

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(11.1)	Australian Industry	
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government	
			Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	

74.7	63.6	(11.1)	Additional Government Approvals	Delivery and installation of the First of Class (FOC) Mission System into HMAS Arunta occurred as scheduled in early 2019. The revised delivery forecast for the second CEA Mission system was agreed through the Project Executive Board that resulted in the reprogramming of the production and delivery of subsequent CEA mission systems into FY 2019-2020 resulting in the variation.
			Total Variance	
		(14.9)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
CEA	Sept 17	166.6	164.6	Fixed with indices escalation	ASDEFCON Strategic	1,2
WAMA	Aug 17	136.1	137.9	Variable with Pain/Gain Share	Alliance	2,3
Notes						
1	SEA1448 Phase 4B contract execution date is official order under the Head Contract DMO/ESD/00297/2013 Standing Offer for Phased Array Radar Development Services, executed 30 Oct 2013. CCP01 reduced the contract price by removing the performance security as the technology had been demonstrated.					
2	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
3	WAMA consists of Commonwealth of Australia, BAE Systems Maritime Australia (BAE), Saab Australia Pty Ltd (Saab) and Naval Ship Management Pty Ltd (NSM). The primary Industry Partners for SEA 1448 Phase 4B tasking is BAE and Saab.					
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 19				
CEA	1	1	Qualification and Verification System			
	8	8	Mission System Ship Sets			
	2	2	Depot Spare Systems			
	1	8	Training Simulators			1
WAMA	8	8	Mast, Ship Systems and integration			
	8	8	Combat Management System (CMS) upgrades and integration			
	0	8	Combat System simulator training integration			1
Major equipment received and quantities to 30 Jun 19						
First of Class mast was installed on HMAS Arunta 30 November 2018. As of 30 June 2019, integration, set to work and harbour acceptance trials of CEA's Mission System Ship Set One (1) and the WAMA led support systems have concluded. Sea acceptance trials are forecast to complete by October 2019.						
Notes						
1	The WAMA scope was modified for the production of a Combat System Simulator Training solution, with a subsequent CEA contract change proposal to modify the number of training simulators from (1) to (8) to support the solution.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	CEA Radar System Performance Specification	N/A	N/A	25 Aug 2017	N/A	
Preliminary Design	Mast	N/A	N/A	Apr 17	N/A	1
	Platform	N/A	N/A	Sep 17	N/A	1
	Whole of Ship	N/A	N/A	Nov 17	N/A	1
Critical Design	Mast	N/A	N/A	Sep 17	N/A	1
	Platform	N/A	N/A	Jun 18	N/A	1
	Whole of Ship	N/A	N/A	Jun 18	N/A	1
Notes						
1	Original Planned dates for completion of Preliminary and Critical Design activities not disclosed within the Integrated Master Schedule as these dates were determined prior to Second Pass Approval.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	Ship 1 – CAT1 (Factory Acceptance Testing)	Nov 18	N/A	Apr 19	5	1
	Ship 1 – CAT2 (Environmental Qualifications) and CAT3 (Integration)	Jan 19	Aug 19	Aug 19	7	2,3

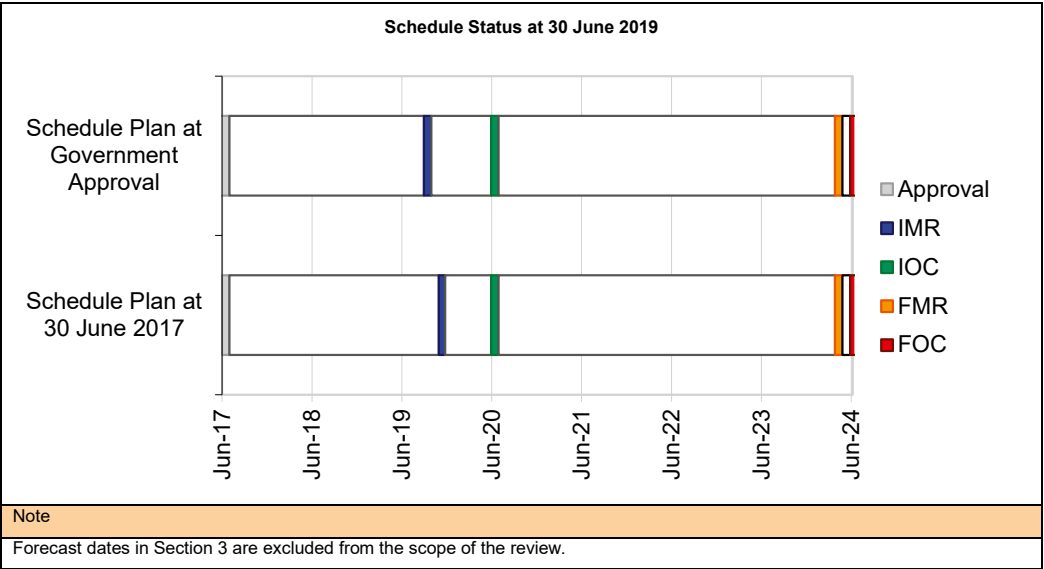
Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

	Ship 1 – CAT4 (Harbour Acceptance Trials)	Feb 19	N/A	Aug 19	6	4,5
	Ship 2 – CAT4 (Harbour Acceptance Trials)	Aug 19	N/A	TBC	N/A	6
	Ship 3 – CAT4 (Harbour Acceptance Trials)	Jul 20	N/A	TBC	N/A	6
	Ship 4 – CAT4 (Harbour Acceptance Trials)	Dec 20	N/A	TBC	N/A	6
	Ship 5 – CAT4 (Harbour Acceptance Trials)	Nov 21	N/A	TBC	N/A	6
	Ship 6 – CAT4 (Harbour Acceptance Trials)	May 22	N/A	TBC	N/A	6
	Ship 7 – CAT4 (Harbour Acceptance Trials)	Feb 23	N/A	TBC	N/A	6
	Ship 8 – CAT4 (Harbour Acceptance Trials)	Aug 23	N/A	TBC	N/A	6
Acceptance	Ship 1 – CAT5 (Sea Acceptance Trials)	Sep 19	N/A	Dec 19	3	4
	Ship 2 – CAT5 (Sea Acceptance Trials)	May 20	N/A	TBC	N/A	6
	Ship 3 – CAT5 (Sea Acceptance Trials)	Feb 21	N/A	TBC	N/A	6
	Ship 4 – CAT5 (Sea Acceptance Trials)	Sep 21	N/A	TBC	N/A	6
	Ship 5 – CAT5 (Sea Acceptance Trials)	Jun 22	N/A	TBC	N/A	6
	Ship 6 – CAT5 (Sea Acceptance Trials)	Dec 22	N/A	TBC	N/A	6
	Ship 7 – CAT5 (Sea Acceptance Trials)	Oct 23	N/A	TBC	N/A	6
	Ship 8 – CAT5 (Sea Acceptance Trials)	Apr 24	N/A	TBC	N/A	6
Notes						
1	A manufacturing delay with CEA resulted in the Factory Acceptance Testing from November to December 2018. Test Reports were accepted in April 2019.					
2	CEA Contract Change Proposal approved the delay in which CEA are to obtain Environmental Qualification for the LRASR. The WAMA have yet to achieve full Environmental Qualification for the Support Systems. The projects expects acceptance shall occur by August 2019.					
3	CAT 3 integration activities were completed in May 2019. Acceptance of CAT 3 reports will occur in quarter 3, 2019.					
4	Delays in the AMCAP Schedule for Ship 1 has resulted in delays to CAT 4 and CAT 5.					
5	CAT4 testing was undertaken in June 2019, with acceptance of the test reports expected to occur quarter 3, 2019.					
6	CAT 4 and CAT 5 dates, after Ship 1, are not disclosed in the AMCAP Schedule. These dates will be refined over the course of the project as the ships enters the availability period.					

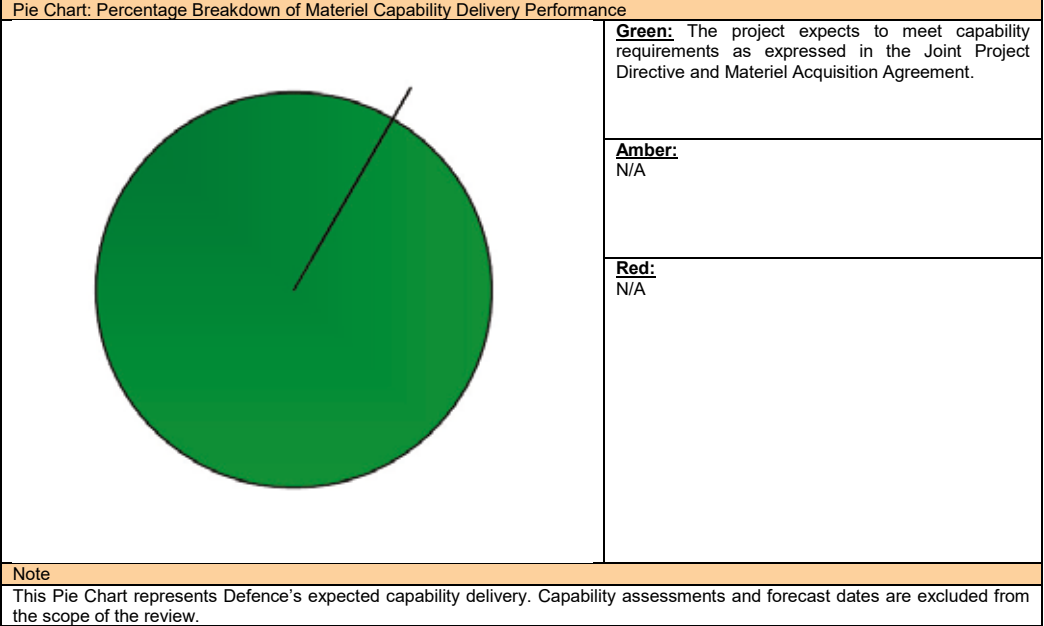
3.3 Progress toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Oct 19	Dec 19	2	1
Initial Operational Capability (IOC)	Jun 20	Jun 20	0	
Final Materiel Release (FMR)	Apr 24	Apr 24	0	
Final Operational Capability (FOC)	Jun 24	Jun 24	0	
Notes				
1	Due to additional time needed during HMAS Arunta maintenance period and the need to re-program of Sea Trials Initial Materiel Release (IMR) is expected to occur in December 2019.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Integration of one (1) Air Search Radar and IFF System into the first Anzac Class Frigate, including installation of a new aft-mast and reinstallation of all extant systems. Delivery of on-board spares and training packages. Establishment of Initial Support Contracts for both Radar and Integration. Achievement of IMR is expected in December 2019.	Not Yet Achieved

Initial Operational Capability (IOC)	Installation of equipment onto one Anzac ship, development of operator and maintainer training package and initial package completed, tactical doctrine updated, completion of acceptance trials on the first ship completed, and the logistics support arrangements in place. Achievement of IOC is expected in June 2020.	Not Yet Achieved
Final Materiel Release (FMR)	Integration of one (1) Air Search Radar and IFF System into the final Anzac Class Frigate. Delivery of all outstanding logistic documentation. Delivery of a Support system. Final delivery of on-board spares and depot spares. Achievement of FMR is expected in April 2024.	Not Yet Achieved
Final Operational Capability (FOC)	Installation of equipment onto all Anzac class is complete, training facilities have been set to work, operator and maintainer trainer is in a steady state, tactical doctrine is mature, full logistics support arrangements are in place, establishment and other Fundamental Inputs to Capability arrangements are complete. Achievement of FOC is expected in June 2024.	Not Yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the SEA1448 Phase 4B project may not meet Navy's forecast date for introduction into service for the first of class (HMAS Arunta) as a result of contracted deliverables, integration activities or external project dependencies.	Permission has been sought for major work and long lead time items to be brought forward for first of class. Regular engagement with Industry Partners including periodic status reports, quarterly progress reviews, and executive meetings to determine compliance with contractual obligations.
There is a chance that the first of class system certifications may not be achieved by Navy's introduction into service date requiring additional testing to achieve agreed level of seaworthiness.	Safety will need to be demonstrated and Certified prior to release for implementation onto the ship.
There is a chance that Navy's expectations as outlined in the OCD and FPS will not match the delivered capability.	Follow on activities may occur on the 2nd ship to rectify any identified shortfalls. This risk will remain until acceptance for FOC.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
There is a risk that Certification for the IFF interrogator may not be achieved in time to meet the IOC date (June 2020) due to the readiness of CEA and the availability of the Mode IFF Certification Authority (AIMS) to witness testing.	Regular liaison activities with the US Air Traffic Control Radar Beacon System Identification Friend or Foe Mark XIIA electronic identification System (AIMS) Program Office (PO)

5.2 Major Project Issues

Description	Remedial Action
Contractual deliverables are impacting the forecast spend spread of the project.	Array faces have been required to undertake minor hardware design changes that have impacted schedule. PO has agreed to the re-prioritisation of some deliverables to focus on ship integration activities.
Coordination of AIMS activities is impacting the planned certification schedule of the IFF equipment.	Coordination between ship integration activities and the AIMS test program is ongoing. Current schedule allows for certification to be achieved prior to IOC.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Complete System Integration and Test	Project Status	6	7	8	8	8	7	8	52
	Explanation	<ul style="list-style-type: none">Schedule: The achievement of Mode 5 IFF Certification timeframe is expected to be clarified in quarter 3 2019. This may result in a revision to the Materiel Acquisition Agreement due to the impact on achievement of IMR and IOC.Commercial: The project has been experiencing a slower than expected recovery of CEA contract milestones. Delays in the AMCAP have also had a commensurate impact on CEA.							

Project Milestone	Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ. & Test	55
Complete Acceptance Testing	57
Initial Materiel Release (IMR)	60
Final Materiel Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance Into Service	67
Project Completion	70

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Mrs Sheryl Lutz
Branch Head	CDRE Darron Kavanagh, RAN
Project Director	CAPT Mark Bailey, RAN
Project Manager	Ms Susan Egan

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Project Data Summary Sheet¹⁶⁵

Project Number	JP 2008 Phase 5A
Project Name	INDIAN OCEAN REGION UHF SATCOM
First Year Reported in the MPR	2010-11
Capability Type	Upgrade
Acquisition Type	MOTS
Capability Manager	Chief of Joint Capabilities
Government 1st Pass Approval	Mar 09
Government 2nd Pass Approval	Mar 09 and Mar 10
Budget at 2 nd Pass Approval	\$460.9m
Total Approved Budget (Current)	\$421.8m
2018–19 Budget	\$14.8m
Project Stage	Detailed Design Review
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This Project will provide the Australian Defence Force (ADF) with twenty 25kHz UHF SATCOM channels on a hosted payload on a commercial Intelsat Satellite (IS-22), to provide coverage of the Indian Ocean Region, and associated ground infrastructure to provide network control.

1.2 Current Status

Cost Performance

In-year

As at **June 2019**, project JP 2008 Phase 5A recorded an underspend of **\$5.4m** against a planned FY 2018/2019 Budget of **\$14.8m**. This was due to **Prime Contractor** delays in achieving the **Contracted Milestones of Product Baseline Review**, Test Readiness Review and **Head Quarters Northern Command (HQNORCOM) Completion**. Subsequently, **Stop Payments in accordance with the provisions of the contract were imposed on Viasat**.

Project Financial Assurance Statement

As at **30 June 2019**, project JP 2008 Phase 5A has reviewed the approved scope and budget for those elements required to be delivered by **Defence**. Having reviewed the current financial and contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget including contingency remaining for the project to complete against the agreed scope.

Contingency Statement

The project has **not** applied contingency in **this** financial year.

Schedule Performance

In **November 2018**, **Contract Change Proposal 4 (CCP4)** was executed between the Commonwealth and Viasat to re-baseline the project schedule and remediate delays caused mostly by Viasat software development. In February 2019, Viasat advised further schedule delays due to persistent software and system security integration issues. Accordingly, achievement of the **Product Baseline Review** was delayed from February 2019 to July 2019. Viasat forecasts indicate that **Final System Acceptance** will slip from August 2019 to December 2019, a further 4 months delay. This delay will have flow on impacts for the **Network Control System (NCS) Final Material Release (FMR)** milestone, which Defence forecasts will be achieved in March 2020. The requirement for US Government certification of the NCS is a key input for **Final Operating Capability (FOC)**, which is forecast by December 2021.

165 Notice to reader

Forecast dates and Sections: 1.2 (Material Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Material Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Materiel Capability Delivery Performance

The IS-22 satellite is currently meeting all performance measures, including:

- the hosted payload; and
- the Communications System Monitor (CSM).

The NCS contract was executed on 16 May 2012, factoring United States Government (US) requirements of Defense Information Systems Agency and Space and Naval Warfare System Command. The implementation strategy was reported to Government. The Integrated Waveform (IW) NCS is the largest remaining scope to be delivered. Issues with the modification and integration of Commercial Off The Shelf (COTS) software has been the cause of the delay. **Due to the scale of modification and integration, it is considered developmental for this project.** To partially mitigate the impact of the delay, IW Phase I was introduced in 2016 under an Interim Capability (IC) state. **IW Phase II is forecast for delivery in December 2019.**

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context**Background**

The JP 2008 Phase 5 project was created to provide capability originally planned for under the JP 2008 Phase 4 Next Generation SATCOM Capability project (a result of Phase 4 of the project being re-scoped to provide access to the Wideband Global Satellite (WGS) capability).

UHF SATCOM provides critical tactical radio coverage over the Middle East Area of Operations. Coverage was provided by leases on two commercial satellites and channels loaned by the US Government on an availability basis, which proved to be significantly less than the capability needed by the ADF. This project was also formed on the basis that LEASAT 5 would reach end of life in 2011.

A market survey was conducted in September 2008 to inform cost and capability options for JP 2008 Phase 5A. It revealed an opportunity for Defence to host a payload on an Intelsat commercial satellite over the region in mid-2012. A Restricted Request For Tender was subsequently let to ten companies for the capability in November 2008 and Intelsat was selected as the preferred tenderer.

Combined First and Second pass Government Approval was given in March 2009 and a contract was signed with Intelsat for eight 25 kHz channels and 15 years support in April 2009.

First pass Government approval was given for the project to pursue a Memorandum Of Understanding with the US to provide global UHF SATCOM coverage using US satellites in return for access to ten 25 kHz channels on IS-22. A subsequent Second Pass approval was given in March 2010 which allowed the project to procure the full payload on IS-22.

The IS-22 satellite was successfully launched on 25 March 2012. Materiel Release (MR) for the Indian Ocean Region was achieved on 21 December 2012.

In May 2012, a contract was signed with Viasat US to upgrade the existing NCS. In December 2013, a Contract Change Proposal (CCP1) was executed to re-baseline delivery of Final Materiel Release (FMR) for the NCS to September 2014. A second Contract Change Proposal (CCP2) was executed in December 2015 after Viasat experienced delays in software development. The delay resulted in a further slip to FMR (NCS) milestone which was subsequently rebaselined and delivery forecast for April 2018 (49 months behind schedule). Defence in an attempt to minimise the capability impacts of the JP 2008 Phase 5 project delays introduced two new milestones under CCP2; the NCS Manager Software Readiness Review (NSWRR) and Software Deployment Readiness Review (SDRR).

A third Contract Change Proposal (CCP3) was executed in March 2017 to introduce architectural enhancements to the NCS to align with increased Defence security requirements. In August 2017, delayed provision of GFM and persistent challenges in Viasat's development of the NCS triggered the need to execute a fourth Contract Change Proposal (CCP4). Technical discussions regarding capability delivery resulted in the Contractor providing a revising the schedule in April 2018. The revised schedule highlighted that Viasat was 10 months behind on its software development plan.

The parties entered into negotiations in June 2018 to implement strategies to constrain the delay and establish a new baseline for the project. CCP4 was signed in November 2018 with a forecast contract completion date of 29 August 2019. In February 2019, Viasat experienced further system integration and security issues. This additional delay slipped the contract completion forecast to December 2019.

Uniqueness

The contract with Intelsat is based on the standard ASDEFCON template; however, it required significant tailoring based on input from specialist space lawyers. There are also a number of unique aspects to a contract for a satellite, including the unusual risk profile of the Launch and the corresponding high degree of schedule uncertainty which is typical of a satellite program where product quality requires a high priority.

A UHF Channel Control system was designed and developed to meet the requirements of Australian and US forces.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Major Risks and Issues

There is a risk that further security and integration challenges during site installation may cause further schedule delays. Recent evidence suggests that the NCS is continuing to experience system integration issues which may have been caused by the implementation of security requirement improvements to the system.

There has been an ongoing risk relating to facility issues that may cause delay to project closure related to compliance with current Australian Standards, i.e. electrical distribution. If realised, this risk may cause schedule delay as time would be required to repair non-compliances. The Project Office has been working with sites to remediate non-compliances as they have been identified. Facilities works to refurbish HMAS Stirling have been assessed to no longer have a significant impact to the project delivery schedule. As a result, the severity of this risk has been reduced.

There is a risk that the Project Office may exhaust contingency before the final delivery of the program. The prolonged schedule delay has required the project to retain a contracted workforce beyond original estimates which put significant pressure on project finances. The successful outcomes negotiated under CCP4 has alleviated the pressure and the risk has been reduced to low.

There is a risk that the US Government certification of the NCS system may delay FOC as the certification is subject to US priorities and demand for the services of the test agency. Assessment of the NCS system by the Joint Interoperability and Test Command (JITC) is a US Government requirement for access to US military satellites. Defence has had positive engagements and planning with JITC and will continue to manage the certification requirements with JITC.

There is an emergent risk that Viasat will be delayed in delivering the Integrated Logistics Support products necessary to complete the Support System. The Project Office has taken action to assist Viasat in the development of products in order to mitigate likelihood of this risk occurring.

Other Related Projects and Phases

JP 2008 Phase 3E Advanced SATCOM Terrestrial Infrastructure System: This project provides the supporting ground infrastructure for Satellite Communications including UHF, X and Ka band communication services.

JP 2008 Phase 3F ADF SATCOM Terrestrial Enhancements: This project will provide the mature Australian anchoring capability for the WGS constellation.

JP 2008 Phase 4 Next Generation SATCOM Capability: This project provides WGS capability.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance**2.1 Project Budget (out-turned) and Expenditure History**

Date	Description	\$m	Notes
	Project Budget		
Feb 09	Original Approved	4.0	
Apr 09	Government Initial Second Pass Approval	269.1	
Apr 10	Government Subsequent Second Pass Approval	187.8	1
	Total at Second Pass Approval	460.9	
Jun 14	Real Variation – Real Cost Decrease	(18.0)	2
Jul 10	Price Indexation	18.0	3
Jun 19	Exchange Variation	(39.1)	
Jun 19	Total Budget	421.8	
	Project Expenditure		
Prior to Jul 18	Contract Expenditure – Intelsat	(294.4)	
	Contract Expenditure – Viasat	(28.9)	4
	Other Contract Payments / Internal Expenses	(38.0)	5
		(361.3)	
FY Jul 18 to Jun 19	Contract Expenditure – Viasat	(3.9)	
	Other Contract Payments / Internal Expenses	(5.5)	6
		(9.4)	
Jun 19	Total Expenditure	(370.7)	
Jun 19	Remaining Budget	51.1	
Notes			
1	The Initial Second Pass Approval was for eight channels and the Subsequent Second Pass Approval was for the remaining channels of the hosted payload.		

2	Real Cost Decrease was a result of Project Office negotiating insurance for payload launch into the contract. Separate launch insurance is no longer needed.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$16.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further (\$19.6m) having been applied to the remaining life of the project. For this project, that process was incorrectly executed but corrected in January 2012 by returning \$30.9m to the budget; \$21.1m and \$9.9m for impacts of price and exchange variations respectively.
4	This contract was in Stop Payment from July 2014 to December 2015 and subsequently from December 2017 to November 2018. Stop Payments were triggered again from March 2019 pending achievement of Product Baseline Review and Stirling Completion.
5	Other Contract Payments / Internal Expenses of \$38.0m comprise of Capital and Operating Expenditure (\$19.4m) and expenditure for contracted workforce related contractor support services provided by Nova Defence (18.6m).
6	Other Contract Payments / Internal Expenses total \$5.5m comprise of other Capital and Operating Expenditure (\$0.2m) and expenditure for contracted workforce related contractor support services provided by Nova Defence (\$5.3m).

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
20.3	18.4	14.8	PBS to PAES: Reduction in estimates due to delay in completing contract milestones. PAES to Final Plan: Reduction in estimates due to delay in completing contract milestones.
Variance \$m	(1.9)	(3.6)	Total Variance (\$m): (5.5)
Variance %	(9.4)	(19.6)	Total Variance (%): (27.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(1.5)	Australian Industry	Figures are as per the end of June 19. Current underspend is due to delay in achieving the Prime Contract milestones, Product Baseline Review, Test Readiness Review and Head Quarters Northern Command Completion. These milestones have slipped to FY 19/20.
		(3.9)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
14.8	9.4	(5.4)	Total Variance	
		(36.5)	% Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Intelsat	Mar 09	202.5	294.4	Firm	ASDEFCON (COMPLEX)	1, 3
Viasat	May 12	36.5	41.5	Firm	ASDEFCON (COMPLEX)	2, 3
Notes						
1	The increase in contract price is due to a Contract Change Proposal in 2010 which included 12 additional hosted UHF payload channels and a Communications System Monitor. The contract was transferred to Sustainment in April 2014 for support of the Communications System Monitor.					
2	CCP2, approved in December 2015, was a nil cost CCP related to the redevelopment of the NCS design. CCP3, approved in March 2017 increased the Viasat contract price. CCP4 in November 2018, decreased Viasat's contract price due to modifications to the scope of the contract. The scope modifications were implemented to constrain and mitigate further delays to the delivery of the NCS.					
3	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates and includes adjustments for indexation (where applicable).					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Intelsat	8	20	25kHz UHF SATCOM channels on IS-22 Hosted Payload			
Viasat	N/A	N/A	NCS comprising three channel control sites, and a Test and Training System for support.			
Major equipment received and quantities to 30 Jun 19						
All 20 channels were delivered successfully on 25 May 2012 and are now operational.						

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	IS-22 Hosted Payload	Jun 09	N/A	Jun 09	0	
	NCS	Aug 12	N/A	Aug 12	0	
Preliminary Design	IS-22 Hosted Payload	Nov 09	N/A	Oct 09	(1)	
	CSM	Oct 10	N/A	Nov 10	1	1
Critical Design	IS-22 Hosted Payload	Sep 10	N/A	Sep 10	0	
	CSM	Mar 11	N/A	Mar 11	0	
	NCS	Mar 13	N/A	Mar 13	0	
Product Baseline Review	NCS	May 17	Feb 19	Jul 19	26	2, 3
Notes						
1	The review was conducted in October 2010 but approval by the Project Office did not occur until November 2010 due to a number of issues with requirements traceability that required rectification.					
2	This milestone was re-scheduled under CCP3 signed in March 2017. The previously contracted NCS Software Readiness milestone was removed as part of CCP4.					
3	Criteria against the Software Deployment Readiness Review (SDRR) was amended, aligning delivery to a Commercial Of The Shelf (COTS) process. For this reason SDRR was renamed Product Baseline Review. The Product Baseline Review was held in June 2019 with actions forecast to be closed and milestone achieved in July 2019.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	IS-22 Hosted Payload	Nov 10	N/A	Feb 11	3	1
	CSM	Sep 11	N/A	Oct 11	1	2
	NCS	Nov 13	Jun 19	Nov 19	72	3,5,6
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	May 12	(1)	
	CSM	Jul 12	N/A	Jun 12	(1)	
	NCS	Mar 14	Aug 19	Dec 19	69	3,4,5,6
Notes						
1	Delay to commencement of integration was driven by a number of delays in sub system deliveries forming part of the hosted payload including C and Ku antennas (not forming part of this capability) and the UHF antenna.					
2	While installation commenced in September 2011, testing to confirm that the installation met requirements was completed in October 2011.					
3	In February 2014, Viasat advised the Commonwealth of software design delays affecting the NCS schedule. In February 2015 Viasat advised the Commonwealth of their decision to take on elements of work previously contracted to their sub-contractor and continue the software development in house. Variance is a result of software design delays captured in CCP2 signed in December 2015.					
4	In March 2017, the Commonwealth signed CCP3 with Viasat for improvements to the network architecture and the inclusion of GFM into the NCS.					
5	Delay to NCS System Integration and Acceptance milestones result from delay in delivery of Government Furnished Materiel and Viasat software development at August 2017.					
6	In February 2019, Viasat experienced security and system integration issues which caused further schedule delays to achievement of Final Acceptance for the NCS.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul 12	Jul 12	0	
Initial Operational Capability (IOC)	Jul 12	Jul 12	0	
Materiel Release (MR) # 1 (Indian Ocean)	Sep 12	Dec 12	3	1
Operational Capability (Indian Ocean)	Sep 12	N/A	0	5
Final Materiel Release (FMR) # 2 (Network Control System)	Mar 14	Mar 20	72	2
Final Operational Capability (FOC) (Pacific Ocean)	Jun 18	Dec 21	42	3, 4, 6

Notes	
1	MR was claimed on 28 September 2012. Chief Information Officer Group (CIOG) requested additional information which was supplied and MR was achieved on 21 December 2012.
2	Software delays noted in Section 3.2 Note 3 impacted FOC.
3	CIOG will be in a position to acquire agreed UHF capacity from the US as their capacity builds up in the region. A review of project submission documents to Government highlighted the omission of some key milestone dates in the PDSS.
4	FOC (Pacific Ocean) is scheduled to be delayed due to FMR#2 being re-forecast for achievement by March 2020. The requirement for US Government certification of the NCS, additional security integration and implementation issues and subsequent accreditation are the key contributors to the delay.
5	FMR IOR was claimed on 28 September 2012. The ADF has been utilising the capability defined under the Operational Capability Indian Ocean (OC IOR) milestone since this time. The absence of an appropriate Technical Regulatory Framework (TRF) has limited the project to fully meet the Material Acquisition Agreement requirements. FMR IOR is not expected to be declared. This is not expected to have an impact on the achievement of FOC as the project has amalgamated outstanding Operational Capabilities.
6	The original FOC date of June 18 did not contemplate the requirement that the Radio Frequency (RF) sub-system of the NCS requires US Government certification to be able to operate autonomously on the US military satellite in the POR. The test effort associated with the US Government certification is subject to priorities that are outside of Defence control. Defence has had positive engagements and planning with the relevant US Government agency and will continue to manage the certification requirements with the US Government. In the interim, the NCS will operate on approved waivers while the system goes through the US Government certification process. FOC is forecast for delivery by December 2021.
<p align="center">Schedule Status at 30 June 2019</p> <p>Note Forecast dates in Section 3 are excluded from the scope of the review.</p>	

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	<p>Green: The project is currently meeting overall performance requirements which are determined by the hosted payload.</p>
	<p>Amber: N/A</p>
	<p>Red: N/A</p>

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IS-22)	1. In Orbit Test of hosted payload. 2. IMR was achieved in July 2012.	Achieved.
Initial Operational Capability (IS-22)	1. UHF SATCOM services on the IS-22 hosted payload. Quantity of ten 25kHz channels.	Achieved.
Final Materiel Release (IS-22)	1. 20 channels on a UHF Hosted Payload, including Operational Support Services for life-of-type in place, telemetry feed operational and initial training for telemetry feed. 2. CSM and initial training for CSM. 3. FMR IS-22 was achieved in December 2012.	Achieved.
Final Materiel Release (NCS)	1. NCS comprising three channel control sites, and NCS/NCS Manager (IW) training package. 2. FMR NCS is forecast to be achieved in March 2020.	Not yet achieved.
Final Operational Capability	1. Capability State FOC (POR) is the commencement of Australian assured access to 200 kHz in the POR and 50 kHz for the Rest of the World coordinated through the US Government. Forecast delivery is December 2021.	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that the Final Capability installations will be delayed at Defence Communication Station – Perth as it has been identified the building's roof is damaged and requires replacement. This may result in delay in delivering the UHF NCS.	The timeframe on which remedial works are required has not been established. However, the severity of the impact to the project has decreased. The Project Office is monitoring the risk.
There is a risk that current facilities are not fit for purpose or do not comply with Building Safety Regulations.	The Project Office established a project safety case report that identified a series of risks for remediation. Activities are progressing to remediate current risks through existing maintenance support Contracts available within Defence.
There is a risk that the project may exhaust contingency funding before delivery of FOC. The prolonged schedule delays has put significant pressure on project finances.	The risk is now assessed as very low post-mitigation. The successful outcomes of CCP4 mean exhausting Contingency funding is unlikely. The project is anticipated to be delivered within the approved budget.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
There is a risk that the US Government certification of the NCS system may delay FOC as the certification is subject to US Government priorities and demand for the services of the test agency. Assessment of the NCS system by the Joint Interoperability and Test Command is a US Government requirement for access to US military satellites.	The risk has become the focus of the relevant working groups between Defence and the US Government. The risk is being managed by a campaign test plan that has been agreed by all stakeholders and is reviewed monthly.
There is a risk that further security and integration issues may materialise during site installation which may cause further schedule delays.	Viasat has deployed additional engineering resources onto the project in the last seven months. Additionally, Viasat has undertaken testing of the final capability offsite in its Carlsbad facility to further mitigate site installations risks.
There is a risk that there may be delay in Viasat delivering products necessary to complete the Support System. The risk is a consequence of Viasat's workforce limitations and commercial focus to complete Mission System installations.	The Project Office is managing the risk by undertaking some of the supporting works required to develop artefacts to support training. The Project Office will monitor the risk through ongoing reviews.

5.2 Major Project Issues

Description	Remedial Action
The project has and continues to suffer significant schedule slippage related to the development of NCS software.	Viasat has applied more resources to resolve the issue. Viasat has also been working closely with the Commonwealth to identify ways to recover schedule, i.e. sharing risks in the test and acceptance program. There are also Senior Leadership engagement between Chief Joint Capabilities, Deputy Secretary CASG and Viasat President to ensure Viasat is delivering against the final capability schedule forecasts.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

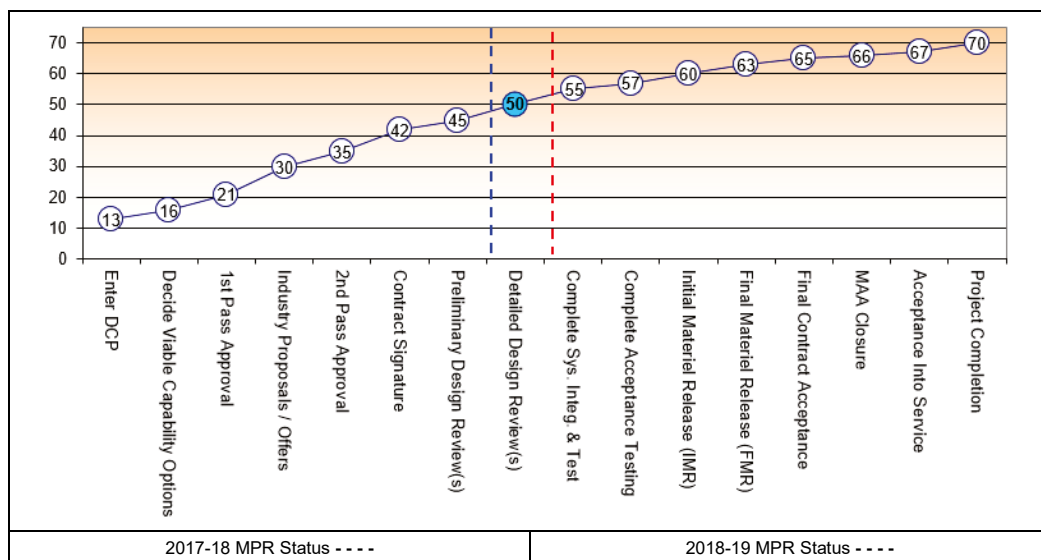
Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	9	8	7	8	8	7	54
	Explanation	<p>Project Maturity Scores reflect delivery of the NCS outcomes only. The IS-22 Hosted Payload (Materiel Release 1) was achieved in 2012 and has been supporting UHF SATCOM operations since this time.</p> <ul style="list-style-type: none"> FOC Schedule: The schedule for the NCS has slipped 42 months. The confidence level of the latest forecast is high. Cost: IS-22 and the NCS are on firm fixed price contracts. Overall costs for the NCS have gradually increased due to additional work required by the Project Office following signing of CCP2 and CCP3. However, CCP4 has resulted a contract price reduction and increases in project costs are being offset through recovery of compensation from Viasat for the prolonged project delays. Requirement: IS-22 has been in operation since 2012. The NCS Interim Capability has been delivered and supporting operations since November 2016. The only remaining project scope is the NCS final capability. Technical Understanding: Support of the IS-22 capability has been established with a long term Through Life Support contract established. Viasat is supporting the NCS Interim Capability until the NCS final capability is delivered. Technical Difficulty: In the last 12 months, the core software product has matured significantly. Viasat is vigorously undertaking integration tests in their Carlsbad facility to prove the maturity of the final capability before undertaking site installations. Commercial: Services are being delivered as contracted. 							

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Mr Ivan Zlabur
Branch Head	Ms Myra Sefton
Project Director	Ms Michelle Liu-Aves
Project Manager	Mr Kasey Jordan

Project Data Summary Sheet¹⁶⁶

Project Number	JP 2048 Phase 3
Project Name	AMPHIBIOUS WATERCRAFT REPLACEMENT
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Feb 09
Government 2nd Pass Approval	Sep 11
Budget at 2 nd Pass Approval	\$235.7m
Total Approved Budget (Current)	\$236.7m
2018-19 Budget	\$5.0m
Project Stage	Final Contract Acceptance
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

Joint Project (JP) 2048 Phase 3 provides the Amphibious Deployment and Sustainment capability with a new breed of watercraft that are organic to the two new Canberra Class Amphibious Assault Ships, the Landing Helicopter Dock (LHD), acquired under JP 2048 Phase 4A/4B. The craft are known as LHD Landing Craft (LLC). The 12 LLC were purchased as an organic ship to shore connector and will interface and operate with the LHD ships, enabling transport of personnel and equipment from the LHD ships to the shore, including where there are no fixed port facilities or prepared landing facilities.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2019 in-year expenditure of \$4.3m represents an underspend of \$0.7m. This is due to minor rescheduling of work to align with shifting Navy requirements.

Project Financial Assurance Statement

As at 30 June 2019, project JP 2048 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the Financial Year.

Schedule Performance

The project achieved Final Acceptance in August 2016 (6 months behind schedule) and Final Materiel Release (FMR) in December 2016 (10 months behind schedule). Navy have rescheduled the incomplete LHD/LLC interface trials for carriage of heavy loads to be conducted during the Sea Series exercises during July 2019. Completion of the trial will support Navy's decision on Final Operational Capability (FOC).

Materiel Capability Delivery Performance

The project remains on track to deliver the materiel capability as approved at Second Pass.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

166 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Independent Assurance Report by the Auditor-General in Part 3 of this report.

1.3 Project Context

Background

A Request for Information and Optimisation Study was conducted before developing a Preliminary Function Performance Specification from the Operational Concept Document. A Request for Proposal (RFP) was released in November 2007. The RFP evaluation determined the Navantia proposed LCM-1E series watercraft was the most suitable design, as it is a Military off the Shelf (MOTS) solution and already in service with the Spanish Armada.

The project received First Pass approval in February 2009. Government approved the Navantia LCM-1E MOTS solution as the most suitable capability option and the project released a direct source Request for Tender to Navantia in May 2009. The Evaluation Report was endorsed by the Capability Development Stakeholder Group in July 2010.

The project received Second Pass approval in September 2011 and a contract was signed between the Commonwealth and Navantia in December 2011 for the acquisition of 12 LHD Landing Craft (LLC) built in Spain, based on the LCM-1E series watercraft with Australian modifications for the Royal Australian Navy (RAN) together with associated supplies and Integrated Logistic Support.

In accordance with the project Materiel Acquisition Agreement (MAA) the 12 LLC were delivered in three batches of 4 craft:

- Batch 1 (LLC 01-04) scheduled for April 2014 (achieved on schedule);
- Batch 2 (LLC 05-08) scheduled for March 2015 (achieved ahead of schedule); and
- Batch 3 (LLC 09-12) scheduled for January 2016 (achieved ahead of schedule).

Uniqueness

While the LLC is based on an existing Spanish LCM-1E series watercraft design, in addition to the Spanish requirements the LLC will be built to Classification Society standards.

Major Risks and Issues

The issue 'Impact to Project Closure due to the delay in achievement of Final Operational Capability' remains open until delayed Navy Operational Testing is complete. The **heavy load** testing **has been rescheduled and is planned to be conducted during the Sea Series exercises in July 2019. Final Operational Capability is planned to be achieved in December 2019.**

Other Current Related Projects / Phases

JP 2048 Phase 4A/4B: The acquisition of two Canberra Class Amphibious Assault Ships, LHDs and associated supplies and support. The LLC are required to integrate with the LHD ships and is their organic ship to shore connector.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Jul 09	Original Approved	2.9	1
May 11	Real Variation – Scope	(0.7)	2
Sep 11	Government Second Pass Approval	233.5	
	Budget at Second Pass Approval	235.7	
Aug 13	Real Variation – Transfer	(7.7)	3
Jul 10	Price Indexation	0.1	4
Jun 19	Exchange Variation	8.6	
Jun 19	Total Budget	236.7	
Project Expenditure			
Prior to Jul 18	Contract Expenditure – Navantia	(150.3)	
	Other Contract Payments / Internal Expenses	(26.0)	5
		(176.3)	
FY to Jun 19	Contract Expenditure – Navantia	0.0	6
	Other Contract Payments / Internal Expenses	(4.3)	
		(4.3)	
FY to Jun 19	Total Expenditure	(180.6)	
Jun 19	Remaining Budget	56.1	
Notes			
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.		
2	Removal of requirement for Project to fund APS salaries – approved May 2011.		
3	A real decrease of (\$7.7m) was approved vide MAA V2.1 dated August 2013 as the Second Pass Approval Agreement Price did not match the Transfer Price from Capability Development Group. The real decrease corrected this.		
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.1m.		

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

5	Other prior year expenditure comprises: Operating Expenditure, Military Communication System contract (\$9.3m), Customs Duty (\$8.1m), Navigation Display System contract (\$3.0m), Minor Capital expenditure not attributable to the Prime contract (\$2.2m), Contractor Support (\$2.1m) and Pre Second Pass activities (\$1.3m).
6	Other in-year expenditure comprises: Bulkhead upgrades (\$2.6m), Studies (\$1.5m) and operating costs (\$0.2m).

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
5.0	5.0	5.0	PBS–PAES: Nil variation. PAES–Final Plan: Nil variation.
Variance \$m	0.0	0.0	Total Variance (\$m): 0.0
Variance %	0.0	0.0	Total Variance (%): 0.0

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	As at 30 June 2019 work relating to improving carrying capacity has commenced and \$4.3m of these funds have been expended.
			Foreign Industry	
			Early Processes	
		(0.7)	Defence Processes	
			Foreign Government Negotiations/Payments	The variance is due to minor rescheduling of work to align with shifting Navy requirements.
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
5.0	4.3	(0.7)	Total Variance	
		(14.0)	% Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Navantia	Dec 11	148.9	150.3	Variable	ASDEFCON	1,2
Notes						
1	Amendments to the Contract since signature include execution of contracted options for long lead time items, spares and training delivery.					
2	Contract value as at 30 June 19 is based on actual expenditure to 30 June 19 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Navantia	12	12	LHD Landing Craft and Support System			
Major equipment received and quantities to 30 Jun 19						
Project acceptance of LLC 01-04 achieved in April 2014, LLC 05-08 in February 2015 and LLC 09-12 in November 2015. Construction of all 12 LLCs complete.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirement	Mission System	Dec 11	N/A	Dec 11	0	
	Support System	Dec 11	N/A	Dec 11	0	
Preliminary Design	Mission System	Jun 12	N/A	Aug 12	2	1
	Support System	Jun 12	N/A	Jun 12	0	
	Navigational Display System	Jul 13	N/A	Oct 13	3	1
Critical Design	Mission System	Nov 12	N/A	Nov 12	0	
	Support System	Nov 12	N/A	Dec 12	1	1
	Military Communication System – Mission System	Mar 13	N/A	Jul 13	4	2
	Military Communication System – Support System	Jun 13	Dec 13	May 14	11	3
	Navigational Display System	Oct 13	N/A	Dec 13	2	1
Notes						
1	This design review was formally exited following the completion of actions identified within the exit criteria and/or other action items identified during the review.					

2	Elbit Systems of Australia (ELSA) Mission System Detailed Design Review (DDR) was scheduled to be conducted in late March 2013, however, this coincided with a Navantia Mandated System Review and key project members were not available to attend. The ELSA DDR was rescheduled to the earliest mutually convenient date. This design review was formally exited following the completion of actions identified within the exit criteria during the review.
3	ELSA Support System DDR was not conducted in December 2013 as ELSA's planned prototyping activity in Spain was delayed due to Navantia's delay in production schedule. March 2014 was the earliest mutually convenient date. This design review was formally exited following the completion of actions identified within the exit criteria during the review.

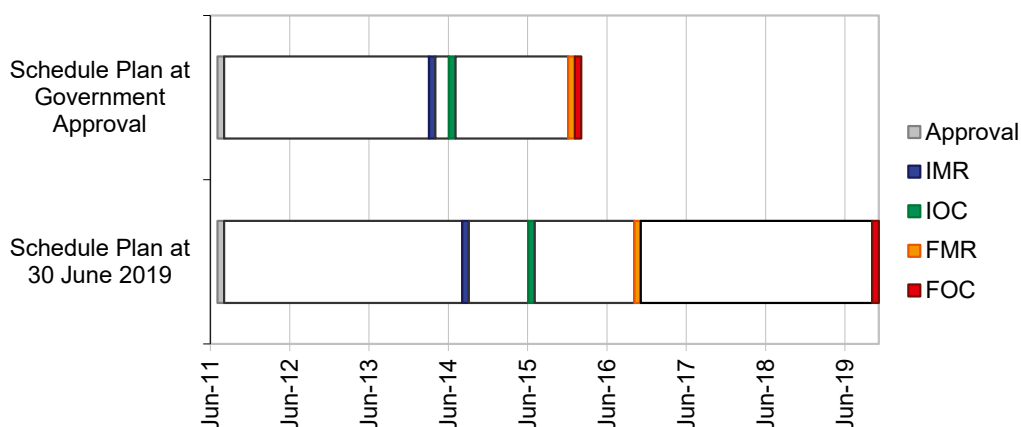
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LLC 01-04	Feb 14	N/A	Feb 14	0	1
	LLC 05-08	Dec 14	N/A	Dec 14	0	1
	LLC 09-12	Oct 15	N/A	Aug 15	(2)	1
Acceptance	LLC 01-04 Project Acceptance	Apr 14	N/A	Apr 14	0	
	LLC 05-08 Project Acceptance	Mar 15	N/A	Feb 15	(1)	2
	LLC 09-12 Project Acceptance	Jan 16	N/A	Nov 15	(2)	2
Notes						
1	System Integration refers to Navantia test and evaluation of the LLC and does not include the Battle Management System (BMS) or Navigational Display System (NDS). The BMS and NDS were installed on LLC 01-12, after acceptance of the craft by the CoA from Navantia.					
2	The production of the second and third batch of 4 LLC was completed ahead of schedule.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	May 14	Oct 14	5	1
Initial Operational Capability (IOC)	Aug 14	Aug 15	12	1
Materiel Release 2 (MR2)	Apr 15	Jun 15	2	2
Final Materiel Release (FMR)	Feb 16	Dec 16	10	3
Final Operational Capability (FOC)	Feb 16	Dec 19	46	4
Notes				
1	IMR was submitted on 20 June 2014 and was accepted by Navy on 10 October 2014 following the review of Initial Operational Release (IOR) documentation. This has had a flow on effect to activities, including IOC.			
2	Lessons learnt from IMR indicated that the MR2 schedule was too optimistic and this resulted in a two month variance.			
3	Final Operational Test and Evaluation for the LHD/LLC interface trials occurred in May 2016. These trials were incomplete leading to a 10 month delay in achievement of FMR.			
4	FOC was not achieved in Jun 18 as forecast due to the outstanding operational testing of heavy loads being deferred. The testing has been rescheduled and is planned to be conducted during the Sea Series exercises in July 2019. This has necessitated a corresponding re-schedule of FOC to December 2019.			

Scheduled Status at 30 June 2019



Note

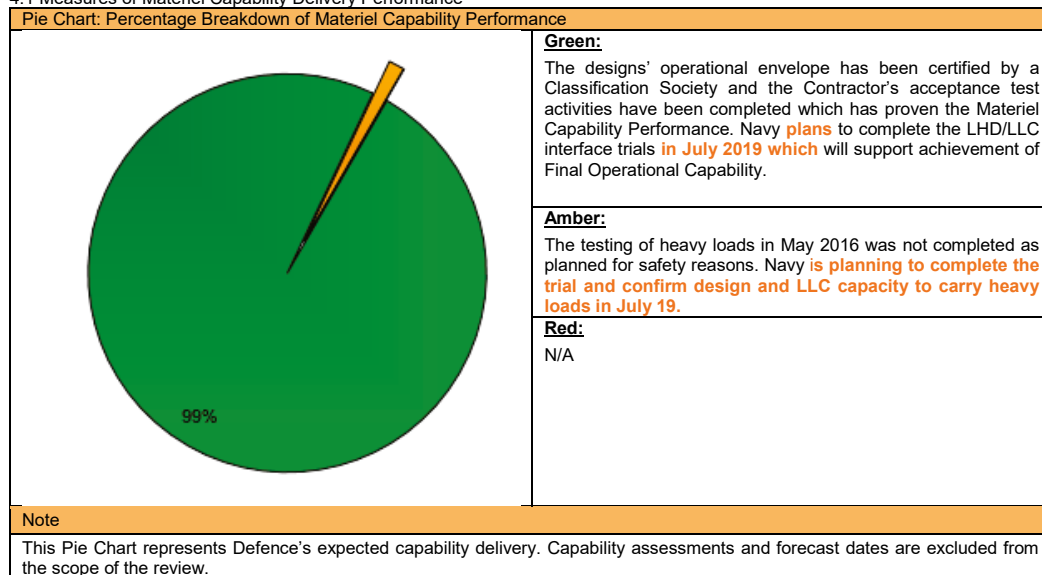
Forecast dates in Section 3 are excluded from the scope of the review.

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none"> • LLC 01-04 (installed communications, BMS, navigation system and armament) delivered ready for Training, work-up, Operational Test and Evaluation. • LLC Support System sufficient to support Operational Testing on 4 LHD Landing Craft, including transition to sustainment. 	Achieved
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> • LLC being able to undertake independent Ship Operations (ISO) utilising Humanitarian Assistance/Disaster Relief (HA/DR) operational loads. 	Achieved
Final Materiel Release (FMR)	<ul style="list-style-type: none"> • LLC 09-12 (inclusive of communications, BMS, navigation system and armament) delivered ready for Training. • LLC Support System sufficient to support 12 Landing Craft, including transition to sustainment. 	Achieved
Final Operational Capability (FOC)	<ul style="list-style-type: none"> • The ability of the LHD Landing Craft to act as the ships' surface manoeuvre assets for the LHD during Amphibious Operations utilising all amphibious trained personnel, stores and heavy vehicular loads. 	Yet to be achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
Project Closure was not achieved in December 2016 as forecast due to a delay in Operational T&E leading to a delay in achievement of FOC and project closure.	Work with Navy to complete Operational Testing. Supply Contractor documentation such as Acceptance Test Reports (ATRs) of the LLC trials conducted in Spain; and

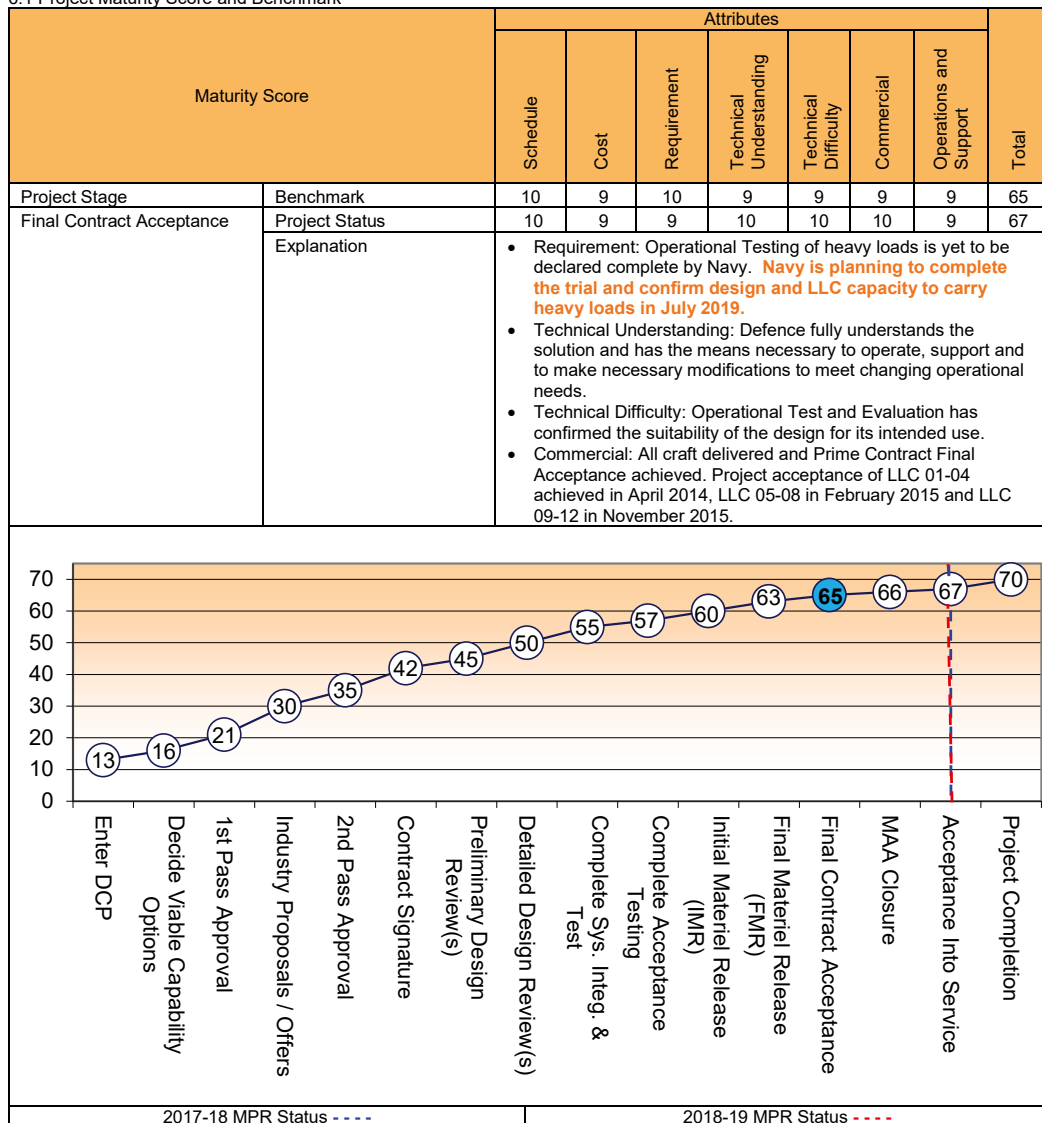
Reschedule the incomplete LHD/LLC interface trials of May 2016 for carriage of heavy loads. **Navy is planning to complete the trial and confirm design and LLC capacity to carry heavy loads in July 2019.** Completion of the trial will support Navy's decision on Final Operational Capability (FOC).

Note

Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Project Data Summary Sheets

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	RADM Wendy Malcom
Branch Head	CDRE Robert Elliott
Project Director	Mr Paul Heiskanen
Project Manager	Mr Thomas Egan

Part 4. JCPAA 2018–19 Major Projects Report Guidelines



Australian Government
Department of Defence



Endorsed by the Joint Committee of Public Accounts and Audit

26 September 2018

Contents

Introduction 403

Criteria for Project Selection..... 404

2018–19 Project Selection 405

Defence’s Roles and Responsibilities 406

MPR Process..... 407

Other Items to Note 407

Requirements for the Preparation of the Project Data Summary Sheets (PDSS) 408

Project Data Summary Sheet Template..... 420

Indicative 2018–19 MPR Program Schedule 425

Introduction

1.1 The Defence Major Projects Report (Defence MPR) will form part of the Australian National Audit Office's (ANAO) 2018–19 MPR, which is to be tabled in Parliament.¹ The MPR will report on the performance of selected major Defence equipment acquisition projects (Major Projects) since Second Pass Approval, and associated sustainment activities (where applicable), managed by Defence.² The summary project data is prepared by Defence and reviewed by the ANAO.

1.2 The Major Projects included within the MPR are proposed by Defence, based on criteria endorsed by the Joint Committee of Public Accounts and Audit (JCPAA), and provided to the JCPAA by the ANAO.

1.3 The 2018–19 MPR will report on 26 projects as endorsed by the JCPAA. The number of projects included in the MPR since its inception is shown in the following table.

Table 1: Number of projects included in the MPR

MPR	Number of projects	MPR	Number of projects
2007–08	9	2013–14	30
2008–09	15	2014–15	25
2009–10	22	2015–16	26
2010–11	28	2016–17	27
2011–12 and 2012–13	29	2017–18	26

1.4 Project data is presented by way of Project Data Summary Sheets (PDSSs), as at 30 June each year. The ANAO will review the PDSSs in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*. The ANAO's review is designed to enable the ANAO to obtain sufficient appropriate evidence to form a conclusion. This conclusion being whether anything has come to the ANAO's attention which indicates that the information in the PDSSs, which is within the scope of the review, has not been prepared, in all material respects, in accordance with the Guidelines.

1.5 These Guidelines:

- provide the criteria for project selection and the list of projects for inclusion in the 2018–19 MPR;
- outline the roles and responsibilities of Defence in the production and quality assurance of Defence's 2018–19 MPR³;
- provide requirements for the preparation of the PDSSs;
- provide the PDSS template; and
- provide an indicative program schedule in support of a November 2019 tabling.

1.6 Each year the MPR Guidelines are reviewed and amended to reflect lessons learned, in order to improve the MPR processes. At the JCPAA's request, the ANAO has taken administrative responsibility for updating the Guidelines annually and submitting them to the Committee for endorsement, following consultation with Defence.

¹ The ANAO's 2018–19 MPR will also include the ANAO's review and analysis, and the Auditor-General's Independent Assurance Report.

² For the purposes of the MPR, a project is defined as the acquisition or upgrade of Specialist Military Equipment, which normally excludes facilities and other Fundamental Inputs to Capability.

³ The ANAO's roles and responsibilities are defined by the *Auditor-General Act 1997* and relevant legislation, and are outlined for each engagement with the responsible parties.

Criteria for Project Selection

1.7 The inclusion of projects in the MPR is based on the projects included in the Defence Integrated Investment Program and subject to the following criteria:

- (a) Projects only admitted one year after Second Pass Approval⁴;
- (b) a total approved project budget of > \$150m;
- (c) a project should have at least three years of asset delivery remaining;
- (d) a project must have at least \$50m or 10% (whichever is greater) of its budget remaining over the next two years; and
- (e) a maximum of five new projects in any one year.

1.8 All projects selected for inclusion in the MPR will be proposed by Defence, based on the above criteria, and provided to the JCPAA by the ANAO annually by 31 August, for endorsement.

1.9 The removal of projects from the MPR is generally based on declaration of Final Operational Capability (FOC), or on a post-Final Materiel Release (FMR) risk assessment of the timely declaration of FOC and subject to the following criteria:

- (a) the outstanding deliverables post-FMR, against the relevant Materiel Acquisition Agreement (MAA)⁵ and/or Joint Project Directive (JPD)⁶;
- (b) the remaining schedule post-FMR, against the relevant MAA and/or JPD;
- (c) the remaining budget post-FMR, against the relevant MAA and/or JPD;
- (d) the remaining project risks and issues; and
- (e) the Capability Manager's assessment, including overall risk rating and the extent to which this risk rating relates to the Capability Acquisition and Sustainment Group's (CASG's) responsibilities.⁷

1.10 All projects selected for removal from the MPR will be proposed by Defence, based on the above criteria, and provided to the JCPAA by the ANAO annually by 31 August, for endorsement.

1.11 Once projects have met the exit criteria and removal has been endorsed by the JCPAA, they should be removed from the PDSSs, and expenditure and milestone information included within the Defence MPR in the subsequent year.⁸

4 The Capability Life Cycle (CLC) is being redesigned following the First Principles Review, to deliver a risk-based decision-making and asset management process. Projects in the 2018–19 MPR will have been approved under the two-pass approval process.

5 MAAs are intended to be phased out and gradually replaced by Product Delivery Agreements (PDAs). Projects in the 2018–19 MPR will have an approved MAA. A PDA is an agreement between the Sponsor and Lead Delivery Group which specifies the scope, resourcing, priorities and performance and preparedness requirements for support of a capability system throughout its life, to support performance measurement. Department of Defence, *Interim Capability Life Cycle Manual*, August 2017, Annex A, Definitions, p. 92.

6 The Project Directive is a tasking statement from Vice Chief of the Defence Force and defines the Project, in terms of fundamental inputs to capability, together with the resources necessary to deliver the project. It is developed in accordance with the exact parameters agreed by government. Department of Defence, *Interim Capability Life Cycle Manual*, August 2017, Annex A, p. 93. The mechanism for providing the directive is via the CLC management tool, which records the Government decision in relation to a project. The accountabilities and responsibilities of specific roles within the CLC are defined in the *Interim Capability Life Cycle Manual*. Where necessary, the Joint Force Authority may provide a specific documented directive.

7 The Capability Acquisition and Sustainment Group (CASG) purchases and maintains military equipment and supplies in the quantities and to the service levels that are required by Defence and approved by Government. Available from <<http://www.defence.gov.au/casg/AboutCASG/>> [accessed 31 August 2018].

8 Department of Defence, *Executive minute on JCPAA Report No. 442 Review of the 2012–13 Defence Materiel Organisation Major Projects Report*, 4 December 2014, pp. 8–9.

1.12 Projects which have been removed from the MPR which still have outstanding caveats are required to report on the status of these caveats in the *Statement by the Secretary of Defence* until their final status is accepted by the Capability Manager.

2018–19 Project Selection

1.13 The following table reflects projects included in the 2018–19 MPR program.⁹ For each project which has been removed, the lessons learned at both the project level and the whole-of-organisation level should be included as a separate section in the following Defence MPR.

Table 2: Projects for the 2018–19 MPR

Project Number	Project Name	Defence Abbreviation
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System	P-8A Poseidon
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters
SEA 1180 Phase 1	Offshore Patrol Vessel	Offshore Patrol Vessel ¹
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships
LAND 121 Phase 4	Protected Mobility Vehicle – Light (PMV-L)	Hawkei
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter
SEA 1654 Phase 3	Maritime Operational Support Capability	Repl Replenishment Ships
AIR 5431 Phase 3	Civil Military Air Management System	CMATS
JP 2072 Phase 2B	Battlespace Communications System Phase 2B	Battle Comm. Sys. (Land) 2B
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	Pacific Patrol Boat Repl
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS
JP 2072 Phase 2A	Battlespace Communications System Phase 2A	Battle Comm. Sys. (Land) 2A
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms
SEA 1448 Phase 4B	ANZAC Air Search Radar Replacement	ANZAC Air Search Radar Repl ¹
LAND 53 Phase 1BR	Night Fighting Equipment Replacement	Night Fighting Equip Repl ¹
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability ²	Collins R&S
SEA 1439 Phase 5B2	Collins Class Communications and Electronic Warfare Improvement Program	Collins Comms and EW ¹
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft

Note 1: SEA 1180 Phase 1 Offshore Patrol Vessel; SEA 1448 Phase 4B ANZAC Air Search Radar Replacement; LAND 53 Phase 1BR Night Fighting Equipment Replacement and SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Improvement Program are included in the MPR Program for the first time in 2018–19.

⁹ The LAND 75 Phase 4 Battle Management System project was removed from the MPR program following the achievement of FOC in December 2017. The following projects were removed from the MPR program based on the low risk nature of the remaining activities to FOC: SEA 1439 Phase 4A Collins Replacement Combat System; SEA 1429 Phase 2 Replacement Heavyweight Torpedo; and SEA 1448 ANZAC Anti-Ship Missile Defence Phase 2A.

Note 2: SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability is a group of 22 activities primarily sustainment in nature. While not an acquisition project, it has been included on an ongoing basis at the JCPAA's request.

Defence's Roles and Responsibilities

1.14 Defence will provide each project's PDSS for the ANAO's review. The Secretary of the Department of Defence (Secretary) is responsible for ensuring that the PDSSs are prepared in accordance with these Guidelines, as endorsed by the JCPAA, and for ensuring that the PDSSs and supporting evidence provided to the ANAO for review are complete and accurate. The Secretary is also responsible for formally presenting the Defence MPR to the ANAO on completion of the PDSSs and associated commentary.

1.15 Defence is responsible for ensuring information of a classified nature is made available to the ANAO for review, as it relates to the data contained within the PDSSs. Data of a classified nature is to be prepared in such a way as to allow for unclassified publication. Defence will confirm to the ANAO the classification of information proposed to be published in the MPR. Defence will provide advice with regards to the aggregated security classification of information contained within the PDSS suite, and suitability for unclassified publication.

1.16 Defence's positions, roles and responsibilities are outlined in the table below.

Table 3: Defence's Positions, Roles and Responsibilities

Position	Role	Responsibility
Secretary of Defence	Defence accountability	<ul style="list-style-type: none"> Primary accountability for the completeness and accuracy of the Defence MPR. Sign off on the <i>Statement by the Secretary of Defence</i>, including Significant Events Occurring Post 30 June 2019.
Vice Chief of the Defence Force	Joint Force Authority	<ul style="list-style-type: none"> Provision of advice with regards to the aggregated security classification of information contained within the PDSS suite, and suitability for unclassified publication.
Defence Deputy Secretary Capability Acquisition and Sustainment Group (CASG)	Business Process Owner	<ul style="list-style-type: none"> Responsibility for CASG's portfolio of acquisition projects and sustainment products that procure and sustain materiel capability for the Australian Defence Force. Obtain cascading sign offs from Branch and Division Heads, on the data and content in the unclassified PDSS suite. Clearance of the PDSSs and Defence analysis, or delegation as appropriate.
Chief Finance Officer Defence	Financial advice and assurance	<ul style="list-style-type: none"> Responsibility for financial advice and information in the PDSS suite and Defence MPR. Coordination and provision of corporate budget information. Quality assurance of all financial data.
First Assistant Secretary Audit and Fraud Control	Compliance and assurance over processes	<ul style="list-style-type: none"> Responsibility for ensuring Defence's compliance with the Guidelines. Assurance over process and stakeholder engagement. Provision of advice to, and facilitation of clearances by, the Secretary of Defence.
Director Program Approvals and Agreements	MPR management, coordination, liaison and accountability	<ul style="list-style-type: none"> Liaison with ANAO senior management. Advice to Deputy Secretary CASG and Secretary. Clearance of the unclassified PDSS suite and Defence MPR. Guidance and direction to project offices. Manage the MPR Program and schedule with the ANAO MPR team. Development, configuration management and quality assurance of the Defence MPR, PDSS suite and evidence packs to ensure completeness and accuracy.
Project Directors/Managers	PDSS development and generation of evidence packs	<ul style="list-style-type: none"> Develop the project's PDSS and associated evidence packs in compliance with the Guidelines. Actively engage the ANAO MPR team in its review of the project's PDSS.
Capability Managers	PDSS accountability and clearance	<ul style="list-style-type: none"> Responsibility for confirming the project's status, particularly progress toward the Initial Materiel Release (IMR), Initial Operational Capability (IOC), FMR and FOC milestones.

		<ul style="list-style-type: none"> • Confirmation that the information contained within the PDSSs is unclassified.
--	--	---

MPR Process

1.17 The JCPAA identified the MPR as a Priority Assurance Review in its Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*. Consequently, Section 31 of the *Auditor-General Act 1997* provides the ANAO with full and free access powers in the conduct of the review. This will be facilitated by the Director Program Approvals and Agreements.

1.18 An indicative schedule for the MPR program has been established (refer to page 425). The schedule provides for a pre 30 June site visit period for the ANAO to conduct PDSS reviews of all projects. All project data should be prepared for this period at the date selected for the ANAO's review, without anticipating outcomes for the post 30 June review. A second period will be set aside after the end of the financial year for reviewing completed PDSSs.

1.19 Normally, at least five working days prior to the commencement of a project site visit, Defence will provide the ANAO with a Defence quality assured copy of the PDSS together with the relevant evidence pack (electronically). The evidence pack will be appropriately structured and mapped to the PDSS for efficient review.

1.20 In accordance with natural justice provisions, contractors named within a PDSS will be consulted before Defence finalises the PDSS. The aim of the consultation is to provide the contractor with an opportunity to comment on relevant extracts from a project's PDSS. Defence will request contractors to provide the ANAO with a copy of their comments (including nil returns) in relation to any errors or misstatements in the PDSS. Defence will have regard to contractors' comments received within specified and reasonable time limits. Defence will also keep the ANAO apprised on how Defence intends to deal with the contractor responses to the PDSS suite.

1.21 The ANAO may also directly engage with contractors to seek any clarification on their comments on the project data, and will keep Defence apprised on feedback and outcomes.

Other Items to Note

1.22 As the PDSS is part of a public document, the following style conventions must be followed:

- (a) PDSSs should be kept to an optimum length of 10 pages, focus on key information, and updated based on the latest template included in this document (refer to page 420).
- (b) For repeat projects, changes from prior years are to be depicted in bold orange text.
- (c) Where possible, acronyms and jargon are not to be used. When acronyms are used, the first use must be spelt out in full.
- (d) Project names should be written in full or with the approved Defence abbreviation, and should be presented with an initial capital, e.g. Joint Strike Fighter.
- (e) All costs should be shown as \$m (millions) and be rounded to one decimal place (i.e. to the nearest \$100,000), with negative amounts in brackets.
- (f) Dates in the PDSS narratives should be presented as Month 20yy, and dates in the PDSS tables should be presented as mmm yy (e.g. Jul 09). Time variations should be shown as full months.
- (g) Any cells in a table not containing data should be shown as 'N/A'.

Requirements for the Preparation of the Project Data Summary Sheets (PDSS)

Heading	Data	Definition/Description
Project Header	Project Number	The number of the project as approved by government. This should be depicted in bold text.
	Project Name	The name of the project as approved by government. This should be depicted in bold upper case text.
	First Year Reported in the MPR	The year the project was first reported in the MPR. Use 20xx-xx date format.
	Capability Type	One of the following: <ul style="list-style-type: none"> • New; • Replacement; or • Upgrade.
	Acquisition Type	One of the following: <ul style="list-style-type: none"> • MOTS (Military-Off-The-Shelf) or COTS (Commercial-Off-The-Shelf); • Australianised MOTS; or • Developmental.
	Capability Manager	Either one or a combination of: <ul style="list-style-type: none"> • Chief of Navy; • Chief of Army; • Chief of Air Force; • Chief of Joint Capability; • Vice Chief of the Defence Force; or • Deputy Secretary Strategic Policy and Intelligence.
	Government 1st Pass Approval	The date Government First Pass Approval was given.
	Government 2nd Pass Approval	The date Government Second Pass Approval was given.
	Budget at 2nd Pass Approval	The approved project budget as at Government Second Pass Approval, excluding price indexation and exchange variation.
	Total Approved Budget (Current)	The current approved project budget. This amount should agree to the Total Budget in Section 2.1 Project Budget (out-turned) and Expenditure History.
	2018–19 Budget	The estimated project expenditure for 2018–19 as per the Portfolio Budget Statements (PBS) and/or the Portfolio Additional Estimates Statements (PAES), or other official budget tool when not available in the PBS or PAES. ¹⁰ This amount should agree to the Estimate Final Plan in Section 2.2A and Section 2.2B.
	Project Stage	The Life Cycle Gate stage applicable to the project according to the Maturity Score procedure. This should agree to the Project Stage recorded in the Monthly Reporting System (MRS) and Section 6.1 Project Maturity Score and Benchmark.

¹⁰ This amount may include updates since the last PAES, such as foreign exchange under the Government's 'no win, no loss' policy, or budget impacts resulting from other government decisions.

Heading	Data	Definition/Description
	Complexity	The Acquisition Categorisation (ACAT) level of the project.
	Project Image	Image of the project to be provided to the ANAO by the Defence MPR team in a separate file as a high resolution JPG.
SECTION 1 – PROJECT SUMMARY		
Section 1.1 Project Description	Description	A short description of the project, which summarises capability delivery and, where appropriate, equipment quantities. This information should be consistent with other sections of the PDSS.
Section 1.2 Current Status	Cost Performance	<p><u>In-year</u></p> <p>At a strategic level, state the project's current progress against its in-year budget (specifying underspend or overspend), and provide a succinct explanation of causes for variations.</p> <p>This statement should agree to the In-year Budget/Expenditure Variance explanation in Section 2.2B.</p> <p>Note: For the pre 30 June PDSS, projects should use the part-year result.</p> <p><u>Project Financial Assurance Statement</u></p> <p>An additional 'project financial assurance statement' on the projects' budget performance should be disclosed, noting whether the budget remaining, together with the estimated future expenditure and current known risks, is sufficient for completing the project.</p> <p><u>Contingency Statement</u></p> <p>State whether the project has/has not applied contingency funds this financial year. Note that disclosure of contingency amounts is not required. Standard text:</p> <p>[positive case]: The project has applied contingency in the financial year primarily for the treatment of [a risk category¹¹] risk [and where possible include linkage to Section 5 – Major Risks and Issues and specified remediation activities]; or</p> <p>[negative case]: The project has not applied contingency in the financial year.</p> <p>This section must be consistent with the data in Section 2 – Financial Performance.</p>
	Schedule Performance	<p>At a strategic level, briefly describe key schedule milestones achieved so far and issues facing the project in achieving future milestones. Milestone achievements or non-achievements in the current year should also be explained and include the variance in months.</p> <p>This section must be consistent with what is stated in Section 3 – Schedule Performance.</p>
	Materiel Capability Delivery Performance	<p>At a strategic level, provide a brief update on the materiel capability delivered to date, and expected future delivery.</p> <p>Detailed technical performance of systems is to be avoided and classified information is not to be disclosed.</p>

11 Refer to the Department of Defence, Defence Materiel Manual Project, DMM (PROJ) 11-0-002, *Project Risk Management Manual (PRMM)* 2013, July 2013, Annex G, for guidance. A replacement manual is in development.

Heading	Data	Definition/Description
		This section must be consistent with what is stated in Section 4 – Materiel Capability Delivery Performance.
Section 1.3 Project Context	Background	<p>A succinct summary level statement that covers Government approvals history and any strategic changes that have occurred since approval.</p> <p>For post-2011–12 MPR projects, if the projects' classification is not MOTS, an explanation must be provided to ensure that these options were explicitly considered and eliminated for particular reasons before final procurement decisions have been made.¹² For projects approved under the Interim Capability Life Cycle model a short description of Defence's "Smart Buyer" risk assessment considered at Second Pass approval should also be included.</p> <p>Note: Stop payments or liquidated damages should be referred to here or elsewhere in Section 1 (disclosure of amounts is not required).</p>
	Uniqueness	A brief explanation of the particular aspects that make the project unique.
	Major Risks and Issues	<p>A succinct summary of the major risks and issues disclosed in Section 5 – Major Risks and Issues.</p> <p>In addition, where the project has achieved a milestone with caveats, a brief description of the caveats should be added.</p>
	Other Current Related Projects/Phases	List the current approved projects (i.e. Second Pass has been achieved) relating to the same platform and/or with the same main project number (e.g. SEA xxxx), including the phase of the project, and provide a brief description of the capability (i.e. one or two short sentences).
SECTION 2 – FINANCIAL PERFORMANCE		
Section 2.1 Project Budget (out-turned) and Expenditure History	Project Budget	
	Original Approved (Government Second Pass Approval)	<p>Each PDSS should clearly identify the approved budget at Second Pass Approval as approved by Government.</p> <p>List the approved estimated cost for the project element at original Government Approval. If this figure does not represent the budget at Government Second Pass Approval remove the brackets and the reference to '(Government Second Pass Approval)'.</p>
	Real Variation	<p>The variations to be included are shown below where they are applicable to the project with an explanation for each variation included within the Notes:</p> <p>"Government Second Pass Approval." Where the original approved amount above is not Government Second Pass Approval, projects are to disclose the actual Government Second Pass Approval amount as such in the description column (in bold) and not as a real scope variation.</p> <p>"Scope" changes are attributable to changes in requirements by Defence and government. These generally take the form of changes in quantities of equipment, a change in requirements that result in specification changes in contracts, changes in logistics support requirements or</p>

12 JCPAA, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, p. 25.

Heading	Data	Definition/Description
		<p>changes to services to be provided which are accompanied by a corresponding budget adjustment.</p> <p>“Transfers” occur when a portion of the budget and corresponding scope is transferred to or from another approved project or sustainment product in CASG or to another Group in Defence in order to more efficiently manage delivery of an element of project scope and to vest accountability for performance accordingly.</p> <p>“Budgetary Adjustment” is made to account for corrections resulting from foreign exchange or indexation accounting estimation errors that might occur from time to time. Also included under this heading are administrative decisions that result in variations such as efficiency dividends imposed on project budgets or adjustments made to fund Defence initiatives.</p> <p>“Real Cost Increases” attributed to any negotiated Foreign Military Sales (FMS) or commercial contracts. These funds have been approved by government to increase the Project’s budget.</p> <p>“Real Cost Decreases” attributed to any negotiated FMS or commercial contracts. These funds have been handed back to the Defence Portfolio.</p> <p>The elements above are to be subtotalled to give a single amount for all real variations (including Government Second Pass Approvals).</p>
	Price Indexation	Variations to the Original Approved project cost due to price indexation and out-turning adjustments, to take account of variations in labour and materiel indices over time. This is disclosed where applicable, i.e. not for projects approved post-July 2010 in out-turned prices.
	Exchange Variation	Variations to the Original Approved project cost due to foreign exchange adjustments brought about by changes in foreign exchange rates for payments in foreign currency.
	Total Budget	<p>The sum of the above.</p> <p>This should agree to the Project Header.</p> <p>Note: For the pre 30 June PDSS, this amount and its components noted above should reconcile to the current Financial Management Information System (FMIS) Project Approvals extract.</p>
	Notes	For additional information as required, e.g. explanation for the reason for each Real Variation.
Project Expenditure		
	Prior to Jul 18	<p>This item comprises all amounts incurred in all <u>periods prior</u> to the current reporting period (i.e. expenditure up to 30 June 2018). All expenditure is to be presented in brackets to indicate a negative figure.</p> <p>Reporting of expenditure is to be split into the following:</p> <p>“Contract Expenditure” against each of the top 5 contracts as listed in Section 2.3 Details of Project Major Contracts, restricted to contracts valued at greater than or equal to \$10m. Contract expenditure should be listed from highest to lowest value. Contracts with nil value should not be disclosed.</p>

Heading	Data	Definition/Description
		<p>“Other Contract Payments / Internal Expenses” which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.</p> <p>It is generally expected that ‘other’ expenditure will not exceed 10% of total prior period expenditure. However, in the event that ‘other’ expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure including amounts to bring the amount of unexplained ‘other’ below 10%.</p> <p>The two expenditure elements above are to be subtotalled to give a single amount for all prior period expenditure.</p>
	FY to Jun 19	<p>This item comprises all amounts incurred in the <u>current reporting period</u> (i.e. contract level expenditure from 1 July 2018 to 30 June 2019). All expenditure is to be presented in brackets to indicate a negative figure.</p> <p>Reporting of expenditure is to be split into the following:</p> <p>“Contract Expenditure” against each of the top 5 contracts as listed in Section 2.3 Details of Project Major Contracts, restricted to contracts valued at greater than or equal to \$10m. Contract expenditure should be listed from highest to lowest value. Contracts with nil value should not be disclosed.</p> <p>“Other Contract Payments / Internal Expenses” which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.</p> <p>It is generally expected that ‘other’ expenditure will not exceed 10% of total expenditure in the current reporting period. However, in the event that ‘other’ expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure including amounts to bring the amount of unexplained ‘other’ below 10%.</p> <p>The two expenditure elements above are to be subtotalled to give a single amount for Financial Year (FY) expenditure.</p> <p>Note: For the pre 30 June PDSS, this amount should reconcile to the year to date expenditure in the FMIS and agree to the Actual in Section 2.2B In-year Budget/Expenditure Variance.</p> <p>In addition, any stop payments or liquidated damages should be referred to in the Notes (disclosure of amounts is not required).</p>
	Total Expenditure	<p>This item discloses total project expenditure as at the reporting date (i.e. 30 June 2019) and is the sum of prior period and current period expenditure reported above. All expenditure is to be presented in brackets to indicate a negative figure.</p> <p>Note: For the pre 30 June PDSS, this amount should reconcile to the life to date expenditure in the FMIS.</p>
	Remaining Budget	<p>The subtraction of total expenditure from total budget, thus showing the unspent portion of the approved budget, as at 30 June.</p>

JCPAA 2018–19 Major Projects Report Guidelines

Auditor-General Report No. 19 2019–20
2018–19 Major Projects Report

Heading	Data	Definition/Description
	Notes	For additional information as required, e.g. the breakdown of 'Other Contract Payments/Internal Expenses'.
Section 2.2A In-year Budget Estimate Variance	Estimate PBS \$m	The initial budget estimate for 2018–19, as published in the PBS.
	Estimate PAES \$m	The mid-year revised budget estimate for 2018–19, as published in the PAES. The variance, as an amount and percentage, should be calculated between the Estimate PAES and Estimate PBS.
	Estimate Final Plan \$m	The final revised budget estimate for 2018–19. The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PAES. This amount should agree to the 2018–19 Budget figure in the Project Header and the Estimate Final Plan in Section 2.2B In-year Budget/Expenditure Variance.
	Total Variance	Budget estimate variances, and corresponding variance percentages, are to be disaggregated and disclosed separately. The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PBS.
	Explanation of Material Movements	The explanations for the material variance/s noted above, as published in appropriate supporting documentation, e.g. the PAES.
Section 2.2B In-year Budget/ Expenditure Variance	Estimate Final Plan \$m	The estimated project expenditure for 2018–19. The data needs to present the project's 'Year to Date' performance in financial terms. It must explain the difference between the 'Latest Plan' in the MRS Majors Budget Performance Total report and/or the FMIS and the End of Financial Year Actual Expenditure. This amount should agree to the 2018–19 Budget figure in the Project Header and the Estimate Final Plan in Section 2.2A In-year Budget Estimate Variance. Note: For the pre 30 June PDSS, projects should use the part-year result.
	Actual \$m	The actual project expenditure incurred in the current reporting period (i.e. 2018–19). This amount should agree to the FY to Jun 19 Total Expenditure in Section 2.1 Project Budget (out-turned) and Expenditure History. Note: For the pre 30 June PDSS, projects should use the part-year result (i.e. 'Actual Total' in the MRS Majors Budget Performance Total report, or the FMIS.
	Variance \$m	Budget expenditure variances are to be disaggregated and disclosed separately as per the variance factors described below. The sum of these should give a total variance equal to the difference between the Estimate and Actual expenditure. The variance percentage should also be calculated between the Estimate and Actual expenditure.

Heading	Data	Definition/Description
	Variance Factor	<p>This section provides a range of factors attributable to the cause of the variances between the Budget Estimate and Actual expenditure. These are expressed as the standard variance factors of:</p> <ul style="list-style-type: none"> • Australian Industry; • Foreign Industry; • Early Processes; • Defence Processes; • Foreign Government Negotiations/Payments; • Cost Saving; • Effort in Support of Operations; and • Additional Government Approvals.
	Explanation	<p>Explanations must address all of the variance factors noted above, where relevant.</p> <p>Material changes following the publication of the PAES may require an explanation.</p> <p>This explanation should agree to the In-year Cost Performance statement in Section 1.2.</p>
Section 2.3 Details of Project Major Contracts	Contractor ¹³	<p>List the contractors for the top 5 contracts valued at greater than or equal to \$10m. Contractors should be listed in order of signature date (in ascending order).</p> <p>The top five contracts listed should agree to the contracts listed in Section 2.1 Project Budget (out-turned) and Expenditure History.</p>
	Signature Date	The date the contract was signed.
	Price at Signature \$m and 30 Jun 19 \$m	<p><u>Signature \$m</u> The value of the contract at signature.</p> <p><u>30 Jun 19 \$m</u> The value of the contract at 30 June 2019 (i.e. value spent as per Section 2.1 Project Budget (out-turned) and Expenditure History plus remaining commitment as at the spot exchange rates as recorded in the FMIS at 30 June 2019).</p> <p>All values are exclusive of GST.</p> <p>Note: For the pre 30 June PDSS, projects should use the life to date expenditure per Section 2.1 plus remaining commitment in the FMIS as above.</p>
	Type (Price Basis)	<p>Choices for this include:</p> <ul style="list-style-type: none"> • Firm (or Fixed); • Variable; • Cost Ceiling (capped); or • Reimbursement (for FMS). <p>For further information including templates refer to the ASDEFCON Suite of Tendering and Contracting Templates on the Defence intranet.</p>

13 The definition of 'contractor' in Section 2.3 Details of Major Project Contracts, includes contractors from direct commercial sales, and also foreign government arrangements such as Memoranda of Understanding, FMS or Cooperative Programs.

Heading	Data	Definition/Description
	Form of Contract	This refers to the contract template used, e.g. ASDEFCON (Strategic, Complex etc.). For unique arrangements such as Alliance or Public Private Partnership, they would need to be specially treated (noting the key signatories to the arrangement). Projects should seek the advice of the Defence MPR team. For Foreign Military Sales, declare "FMS". For Memorandum of Understanding, declare "MoU".
	Notes	For additional information as required, e.g. description of new contract or contract changes.
	Contractor	List the contractors for the top 5 contracts valued at greater than or equal to \$10m. Contractors should be listed in order of signature date (in ascending order), i.e. same order as above. The top five contracts listed should agree to the contracts listed in Section 2.1 Project Budget (out-turned) and Expenditure History.
	Quantities as at Signature and 30 Jun 19	The quantity of major equipment under contract as at the date the contract was signed and also as at 30 June 2019. The quantity of contracted equipment should only be provided at a summary level.
	Scope	Generally only include hardware in this section and restrict it to a platform level summary, disclosing only major prime mission and support system elements, e.g. Two Joint Strike Fighter aircraft delivered.
	Notes	For additional information as required.
	Major equipment received and quantities to 30 Jun 19	Detail the major equipment and quantities the project has received to 30 June 2019.
	Notes	For additional information as required.
SECTION 3 – SCHEDULE PERFORMANCE		
Section 3.1 Design Review Progress	Review	The events to be included are shown below as they are applicable to the project: <ul style="list-style-type: none"> • System Requirements; • Preliminary Design; and • Critical Design. If some or all of the above events are not applicable, other or alternative reviews, for instance for unique arrangements or redesigns, should be included.
	Major System/ Platform Variant	State the major system that the design review refers to. Significant variants for the major systems should also be included.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	Replanned dates as evidenced by a contract amendment.

Heading	Data	Definition/Description
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved as supported by evidence, or <u>Forecast</u> : The expected date for achievement supported by the project schedule (e.g. as recorded in Open Plan Professional (OPP)).
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.2 Contractor Test and Evaluation Progress	Test and Evaluation	The events to be included are shown below as they are applicable to the project: <ul style="list-style-type: none"> • System Integration; and • Acceptance. If some or all of the above events are not applicable, other or alternative test and evaluation activities, for instance for unique arrangements or activities associated with redesign, should be included.
	Major System/ Platform Variant	State the major system that the Test and Evaluation event refers to. If there are significant variants for the major systems, then state what they are.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	The revised planned achievement dates as evidenced by a contract amendment.
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved as supported by evidence; or <u>Forecast</u> : The expected date for achievement supported by the project schedule (e.g. as recorded in OPP).
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.3 Progress Toward Materiel Release and Operational Capability Milestones	Item	Represented at a whole of capability level, unless key milestones are broken out under individual Mission or Support Systems.
	Original Planned	The original date on which the Materiel Release or Operational Capability milestone was scheduled for achievement.
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved as supported by evidence; or <u>Forecast</u> : The expected date for achievement supported by the project schedule (e.g. as recorded in OPP).
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for and implications of the variance to 'Achieved/Forecast' dates. Where the project has achieved a milestone with caveats, a brief description of the caveats should be added.

Heading	Data	Definition/Description
Schedule Status at 30 June 2019	Graph	The Defence MPR team will use the projects existing detail on: Second Pass Approval, Initial Materiel Release (IMR), Initial Operational Capability, Final Materiel Release (FMR) and Final Operational Capability, to produce the graph.
SECTION 4 – MATERIEL CAPABILITY DELIVERY PERFORMANCE		
Section 4.1 Measures of Materiel Capability Delivery Performance	Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	<p>Capability Pie Chart and associated narratives will provide a percentage breakdown of the Materiel Release Milestones and Completion Criteria, as identified in the MAA and/or JPD, at 30 June 2019.</p> <p>The pie chart analysis/narrative (Green, Amber and Red) is to be provided at the <u>strategic</u> level, including:</p> <ul style="list-style-type: none"> • <u>Issues</u> impacting the achievement of Materiel Release Milestones and Completion Criteria; and • <u>Remedial activity</u> to recover performance. <p>Where there is no data insert 'N/A'.</p> <p>Detailed technical performance of systems is to be avoided, and classified information is not to be disclosed.</p> <p>Where the project has not yet achieved IMR, the statement against the Green traffic light should be written in future tense, i.e. <i>“The project expects to meet capability requirements as expressed in the Materiel Acquisition Agreement...”</i>, as opposed to <i>“The project is currently meeting...”</i>.</p> <p>Note: The analysis and narrative disclosures should agree to the information in the MRS Majors Capability report. Defence may need to provide alternative evidence to support disclosures which are not able to be supported by MRS.</p>
Section 4.2 Constitution of Initial Materiel Release and Final Materiel Release	Item	Represented at a whole of capability level, i.e. IMR, IOC, FMR and FOC.
	Explanation	<p>A top level description of the capability elements which constitute IMR, IOC, FMR and FOC as stipulated in the MAA, at 30 June 2019, including an indication of whether or not these milestones have been achieved.</p> <p>If the milestone has not been met, include a statement to indicate when the IMR or FMR milestone is expected to be achieved.</p> <p>Note: Where the project has achieved a milestone with caveats, a brief description of the caveats should be added.</p>
	Achievement	Standard text, i.e. Achieved; Not yet achieved; or Achieved with caveats.
SECTION 5 – MAJOR RISKS AND ISSUES		
Section 5.1 Major Project Risks	Identified Risks (risk identified by standard project risk management processes)	<p><u>Description:</u> A major project risk is one that is rated high or extreme pre-mitigation.</p> <p><u>Remedial Action:</u> The risk mitigation/treatment proposed for the risk identified (these must be actionable measures). If the risk has been retired or the pre-mitigation rating has been downgraded to medium, this should be documented along with the reason; the risk can then be removed in the subsequent MPR.</p> <p>Where contingency has been applied to treat a risk the wording should be consistent with Section 1.2 Current Status - Cost Performance - Contingency Statement.</p>

Heading	Data	Definition/Description
		<u>Note:</u> All high and extreme risks require disclosure. The disclosures may be aggregated to include multiple risks against one common description. In addition, a mapping of all risks from project risk logs to the PDSS is required.
	Emergent Risks (risk not previously identified but has emerged during 2018–19)	<p><u>For repeat projects only.</u></p> <p><u>Description:</u> A major project risk that was not previously identified in the risk log but has emerged this year, rated as high or extreme pre-mitigation. This includes project risks previously rated medium or low pre-mitigation.</p> <p><u>Remedial Action:</u> The risk mitigation/treatment proposed for the risk identified (these must be actionable measures). The risk becomes an Identified Risk in the subsequent MPR.</p> <p>Where contingency has been applied to treat a risk the wording should be consistent with Section 1.2 Current Status - Cost Performance - Contingency Statement.</p> <p><u>Note:</u> All high and extreme emergent risks require disclosure. The disclosures may be aggregated to include multiple risks against one common description. In addition, a mapping of all emergent risks from project risk logs to the PDSS is required.</p>
Section 5.2 Major Project Issues	Description	<p>Issues are high or extreme risks that have been realised or issues that have arisen that require management action to address.</p> <p><u>Note:</u> All high and extreme issues require disclosure. In addition, a mapping of all issues from project issues logs to the PDSS is required.</p> <p>Where the project has achieved a milestone with caveats, caveats should be disclosed as separate issues. On the removal of the caveat, it should also be clear to the reader whether the underlying shortfall/issue has been resolved.</p>
	Remedial Action	The remediation action proposed for the issue identified. If the issue has been resolved or downgraded to medium, this should be documented along with the reason; the issue can then be removed in the subsequent MPR.
SECTION 6 – PROJECT MATURITY		
Section 6.1 Project Maturity Score and Benchmark	Project Stage	The Life Cycle Gate stage applicable to the project according to the Maturity Score procedure. ¹⁴ This should agree to the Project Header.
	Benchmark	The Benchmark Maturity Score applicable to the project according to the Maturity Score procedure.
	Project Status	The Project Status applicable to the project according to the Maturity Score procedure. This should agree to the Maturity Score recorded in the June 2019 MRS Majors Master Data report.
	Explanation	A short explanation is required for each attribute of the Maturity Score (Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support) where there is a difference between the Project Status and Benchmark scores, explaining the reasons for the variance.

¹⁴ Refer to the Department of Defence, Defence Materiel Standard Procedure (Project Management), (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, September 2010, for guidance.

Heading	Data	Definition/Description
	Graph	The Defence MPR team will use the prior and current year 'Project Status' scores, to produce the graph.
SECTION 7 – LESSONS LEARNED		
Section 7.1 Key Lessons Learned	Description	Describe the project lesson (at the strategic level) that has been learned.
	Categories of Systemic Lessons	<p>Select from the following 'Systemic Lessons'¹⁵ categories where they are applicable to the project:</p> <ul style="list-style-type: none"> • Requirements Management; • First of Type Equipment; • Off-The-Shelf Equipment; • Contract Management; • Schedule Management; • Resourcing; and/or • Governance.
SECTION 8 – PROJECT LINE MANAGEMENT		
Section 8.1 Project Line Management as at 30 June 2019	Position and names of the Project's Line Management	<p>List the names of the senior management team as appropriate to the project. This should include:</p> <ul style="list-style-type: none"> • Division Head or Program Manager; • Branch Head; • Project Director; and • Project Manager. <p>This list will contain those persons who occupied their respective position as at 30 June 2019.</p>

15 ANAO Report No.13 2009–10, *2008–09 Major Projects Report*, November 2009, Part 3, paragraph 3.25, p. 122.

Project Data Summary Sheet Template¹⁶

Project Number		Project Image.
Project Name		
First Year Reported in the MPR		
Capability Type		
Acquisition Type		
Capability Manager		
Government 1st Pass Approval		
Government 2nd Pass Approval		
Budget at 2nd Pass Approval		
Total Approved Budget (Current)		
2018–19 Budget		
Project Stage		
Complexity		

Section 1 – Project Summary

1.1 Project Description

--

1.2 Current Status

Cost Performance
<u>In-year</u>
<u>Project Financial Assurance Statement</u>
<u>Contingency Statement</u>
Schedule Performance
Materiel Capability Delivery Performance
Note
Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background
Uniqueness
Major Risks and Issues
Other Current Related Projects/Phases
Note
Major risks and issues are excluded from the scope of the review.

16 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
	Original Approved (Government Second Pass Approval)		
	Real Variation – Scope		
	Real Variation – Transfer		
	Real Variation – Budgetary Adjustment		
	Real Variation – Real Cost Increase / Decrease		
Jul 10	Price Indexation*		
Jun 19	Exchange Variation		
Jun 19	Total Budget		
Project Expenditure			
Prior to Jul 18	Contract Expenditure – Contractor 1		
	Contract Expenditure – Contractor 2		
	Contract Expenditure – Contractor 3		
	Contract Expenditure – Contractor 4		
	Contract Expenditure – Contractor 5		
	Other Contract Payments / Internal Expenses		
FY to Jun 19	Contract Expenditure – Contractor 1		
	Contract Expenditure – Contractor 2		
	Contract Expenditure – Contractor 3		
	Contract Expenditure – Contractor 4		
	Contract Expenditure – Contractor 5		
	Other Contract Payments / Internal Expenses		
Jun 19	Total Expenditure		
Jun 19	Remaining Budget		
Notes			
1			
2			
3			
4			

*Note – Those projects approved in 'out- turned' dollars will not contain an entry for 'Price Indexation'. In these instances this line can be removed.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
Variance \$m			Total Variance (\$m): XXX
Variance %			Total Variance (%): XXX

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government	
			Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
			Total Variance	
			% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Contractor 1						
Contractor 2						
Contractor 3						
Contractor 4						
Contractor 5						
Notes						
1						
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 19				
Contractor 1						
Contractor 2						
Contractor 3						
Contractor 4						
Contractor 5						
Major equipment received and quantities to 30 Jun 19						
Notes						
1						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements						
Preliminary Design						
Critical Design						
Notes						
1						
2						
3						
4						

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration						
Acceptance						
Notes						
1						
2						
3						
4						

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)				
Initial Operational Capability (IOC)				
Final Materiel Release (FMR)				
Final Operational Capability (FOC)				
Notes				
1				
2				
3				
4				
Schedule Status at 30 June 2019				

Defence MPR Team to insert graph

Note

Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance

Defence MPR Team to insert Pie Chart

Green:

Amber:

Red:

Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)		
Initial Operational Capability (IOC)		
Final Materiel Release (FMR)		
Final Operational Capability (FOC)		

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)

Description	Remedial Action

Emergent Risks (risk not previously identified but has emerged during 2018–19)

Description	Remedial Action

5.2 Major Project Issues

Description	Remedial Action

Note

Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark								
	Project Status								

	Explanation	•
Defence MPR Team to insert graph		

Section 7 – Lessons Learned

7.1 Key Lessons Learned	
Description	Categories of Systemic Lessons

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019	
Position	Name
Division Head	
Branch Head	
Project Director	
Project Manager	

Indicative 2018–19 MPR Program Schedule

Event	Start Date	End Date
Planning for the 2018–19 MPR (including review of outcomes of the 2017–18 program)	Dec 18	Jan 19
Defence and ANAO finalise preparations for the 2018–19 MPR program in time for the JCPAA Hearing	Jan 19	Mar 19
Defence MPR provide program advice to the project offices	Feb 19	Feb 19
Defence MPR management finalise preparation with the project offices	Feb 19	Feb 19
Project site visits conducted by the ANAO	Mar 19	Jun 19
End Of Financial Year advice to project offices	Jul 19	Jul 19
Post 30 June PDSS reviews	Jul 19	Sep 19
ANAO submits 2019–20 MPR Guidelines and Project Selection to the JCPAA	Aug 19	Aug 19
Development of the Defence 2018–19 MPR	Aug 19	Oct 19
ANAO develops its Assurance, Review and Analysis for provision to the Secretary	Aug 19	Oct 19
Defence provides advice to the ANAO regarding the security classification of the aggregated PDSS suite	Oct 19	Oct 19
Secretary submits formal draft Defence section of the 2018–19 MPR to the Auditor-General	Oct 19	Oct 19
Defence response to the ANAO Assurance, Review and Analysis for provision to the Auditor-General	Oct 19	Oct 19
ANAO response to the Defence 2018–19 MPR to Defence	Oct 19	Oct 19
ANAO internal clearance of the 2018–19 MPR (Publication and Tabling)	November 2019	

