The Auditor-General
Auditor-General Report No.20 2018–19

2017–18 Major Projects Report

Department of Defence

Australian National Audit Office

ISSN 1036–7632 (Print)
ISSN 2203–0352 (Online)
ISBN 978-1-76033-412-3 (Print)
ISBN 978-1-76033-413-0 (Online)

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Australian National
Audit Office

Canberra ACT

18 December 2018

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 2018, as presented by the Department of Defence. The report is titled *2017–18 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.

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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 eleventh annual report (2016–17: 27). 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] In 2017–18 Defence was managing 198 active major and minor capital equipment projects worth $103.5 billion, with an in-year budget of $6.9 billion.[4] Defence capitalised some $7.5 billion from these projects in 2017–18.[5]

4. The February 2016 Defence White Paper established the 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 2018–19 Defence Portfolio Budget Statements indicated that the Defence budget would grow 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 2017[7], and on 29 June 2018 announced Second Pass Approval of the $35 billion Future Frigate program.[8]

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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 'exists to meet the Australian Defence Force's (ADF) military equipment and supply requirements as identified by Defence and approved by Government'. Department of Defence, *About CASG* [Internet], Defence, available from http://www.defence.gov.au/casg/AboutCASG/ [accessed 8 October 2018].

4 Department of Defence, *Defence Annual Report 17–18,* Chapter 3, Annual Performance Statements, Defence, Canberra, 2018, p. 35.

5 ibid., Chapter 11, Financial Statements, p. 175.

6 Department of Defence, *Defence Portfolio Budget Statements 2018–19*, Defence, Canberra, 2018, p. 5.

7 A performance audit assessing the effectiveness to date of Defence's planning for the mobilisation of its continuous shipbuilding programs in Australia was tabled during this report period (Auditor-General Report No.39 2017–18 *Naval Construction Programs—Mobilisation*).

8 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.

Major Projects selected for review

5. Major Projects are selected for review based on the criteria included in the *2017–18 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit (JCPAA).[9] 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 $59.4 billion, covering 57 per cent of the total budget of active major and minor capital equipment projects of $103.5 billion.[10] The selected projects are listed in Table 1.

9 The *2017–18 Major Projects Report Guidelines* were endorsed by the JCPAA in September 2017 and are included in **Part 4** of this report.

10 Department of Defence, *Defence Annual Report 17–18,* Chapter 3, Annual Performance Statements, Defence, Canberra, 2018, p. 35.

Table 1: 2017–18 MPR projects and approved budgets at 30 June 2018 [1, 2, 3]

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	Joint Strike Fighter	15,504.0
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships	9089.3
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System	P-8A Poseidon	5212.0
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	3771.1
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	3430.4
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk	3430.3
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	3428.9
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships	3091.7
LAND 121 Phase 4	Protected Mobility Vehicle – Light	Hawkei	1952.0
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	1433.3
SEA 1654 Phase 3	Maritime Operational Support Capability	Repl Replenishment Ships	1066.8
AIR 5431 Phase 3	Civil Military Air Traffic Management System	CMATS	974.2
JP 2072 Phase 2B	Battlespace Communications Systems	Battle Comm. Sys. (Land) 2B	920.1
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	887.8
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B	678.7
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	Pacific Patrol Boat Repl	501.2
AIR 9000 Phase 7	Helicopter Aircrew Training System	HATS	481.5
SEA 1439 Phase 4A	Collins Replacement Combat System	Collins RCS	450.5
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land) 2A	438.0
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms.	437.7
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo	427.6
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	419.9
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	411.6
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2A	386.8
LAND 75 Phase 4	Battle Management System	BMS	367.9
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	236.7
Total 26			**59,430.0**

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 1654 Phase 3 Maritime Operational Support Capability (Repl Replenishment Ships), JP 2072 Phase 2B Battlespace Communications System (Battle Comm. Sys. (Land) 2B) and SEA 3036 Phase 1 Pacific Patrol Boat Replacement (Pacific Patrol Boat Repl) are included in the MPR for the first time in 2017–18.
Note 3: 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 at the JCPAA's request.
Source: The Project Data Summary Sheets in **Part 3** of this report.

Report objective and scope

7. 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* and the Project Data Summary Sheets (PDSSs) prepared by Defence. Assurance from the ANAO's review is conveyed in the *Independent Assurance Report* by the Auditor-General.

8. The following forecast information 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.

9. 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 evidence[11], in a sufficiently timely manner to facilitate the review. This has been an area of focus of the JCPAA over a number of years[12], and it is intended that all components of the PDSSs will eventually be included within the scope of the ANAO's review.

10. 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.

11. 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

12. 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.

13. 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

11 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.

12 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.

sought representations and confirmations from Defence senior management and industry in relation to the status of the Major Projects in this report.

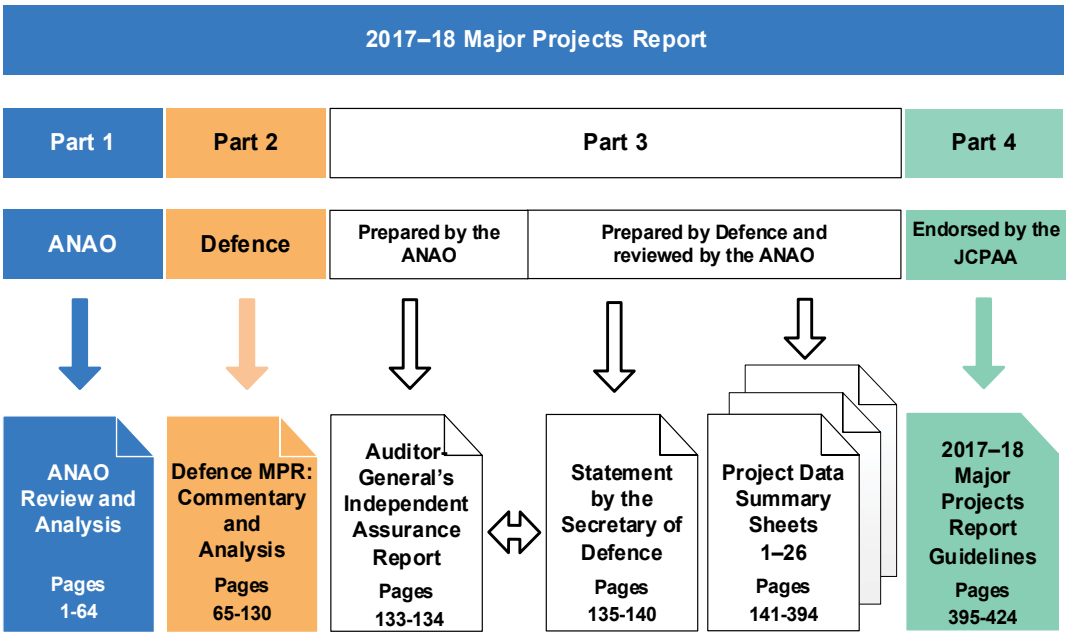
Report structure

14. The report is organised into four parts:

- **Part 1** comprises the ANAO's review and analysis (pp. 1–64);
- **Part 2** comprises Defence's commentary, analysis and appendices (not included within the scope of the *Independent Assurance Report* by the Auditor-General) (pp. 65–130);
- **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. 131 –394); and
- **Part 4** reproduces the *2017–18 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. 395–424).

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

Figure 1: 2017–18 Report structure



Note: To assist in conducting inter-report analysis, the presentation of data in the PDSSs remains largely consistent and comparable with the 2016–17 MPR.

Project Data Summary Sheets

15. The PDSSs include unclassified information on project performance, prepared by Defence.[13] 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.

16. 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 2018);
- Section 3—Schedule Performance: providing information on design development; test and evaluation; and forecasts and achievements against key project milestones, including Initial Materiel Release (IMR), Final Materiel Release (FMR)[14], Initial Operational Capability (IOC) and Final Operational Capability (FOC)[15];
- 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 Defence[16], and a comparison against the benchmark score;

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

14 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 Material Standard Procedure (Project Management) DMSP (PROJ) 11-0-008, '*Initial Material Release And Final Material Release Across The Project Lifecycle*', 2013, p. 2.

15 Declaration of initial operating capability (IOC) is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group that the fundamental inputs to capability have been delivered. Declaration of final operating capability (FOC) is made by the Capability Manager, supported by the results of operational test and evaluation and confirmation by the Delivery Group that the fundamental inputs to capability have been delivered as agreed and also marks the conclusion of the acquisition phase. See Department of Defence, '*Interim Capability Life Cycle Manual*', 2017, p. 41.

16 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*', 2010 — is a methodology used to quantify the maturity of projects as they progress through the acquisition life cycle.

- 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); and
- Section 8—Project Line Management: details current project management responsibilities within Defence.

Overall outcomes

Statement by the Secretary of Defence

17. The *Statement by the Secretary of Defence* was signed on 11 December 2018. The Secretary's statement provides his 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 2018'.

18. In addition, the *Statement by the Secretary of Defence* details significant events occurring post 30 June 2018, 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, AWD Ships, P-8A Poseidon, Growler, Overlander Medium/Heavy, LHD Ships, Hawkei, Repl Replenishment Ships, Battle Comm. Sys. (Land) 2B, ANZAC ASMD 2A and 2B, Pacific Patrol Boat Repl, HATS, Battle Comm. Sys. (Land) 2A, Maritime Comms, Collins RCS, Hw Torpedo and LHD Landing Craft.

19. The 2017–18 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 caveats. The status of the caveats of the ARH Tiger Helicopter Project, which achieved FOC in 2016 with caveats, has been reported in the Statement in **Part 3** of this report.

Conclusion by the Auditor-General

20. The Auditor-General has concluded in the *Independent Assurance Report* for 2017–18 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 *2017–18 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.'

21. Additionally, in 2017–18, a number of observations were made in the course of the ANAO's review, as summarised below:

- non-compliance with corporate guidance resulting in inconsistent approaches taken to contingency allocation (Section 1 of the PDSS). See further explanation in paragraphs 1.34 to 1.41;
- a change to the basis of financial reporting (Section 2 of the PDSS). See further explanation in paragraphs 1.42 to 1.44;
- enhanced transparency by reporting cost variations since Second Pass Approval and personnel costs. See further explanation in paragraphs 1.45 to 1.49;

- 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 1.50 to 1.56[17];
- outdated policy guidance for the project maturity framework (Section 6 of the PDSS). See further explanation in paragraphs 1.57 to 1.60[18]; and
- a decrease in the number of MPR projects which have achieved significant milestones with caveats. See further explanation in paragraphs 1.61 to 1.62.

ANAO's analysis of project performance

22. 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.

17 Spreadsheets lack formalised change/version control and reporting, increasing the risk of error. See paragraph 1.55 for further detail.

18 Refer to footnote 16.

Table 2: Summary longitudinal analysis[1]

	2015–16 MPR	2016–17 MPR	2017–18 MPR
Number of Projects	26	27	26
Total Approved Budget	$62.7 billion	$62.0 billion	$59.4 billion
Total Expenditure Against Total Approved Budget	$29.4 billion (46.9%)	$32.1 billion (51.7%)	$32.4 billion (54.5%)
Total In-year Expenditure Against In-year Budget	$3.9 billion (91.2%)	$4.1 billion (96.6%)	$4.6 billion (98.6%)
Total Budget Variation since initial Second Pass Approval [2]	$23.6 billion (37.6%) [3]	$22.3 billion (36.0%) [3]	$23.0 billion (38.7%)
Total Budget Variation since final Second Pass Approval [4]	$9.8 billion (15.7%)	$8.5 billion (13.7%)	$9.2 billion (15.5%)
In-year Approved Budget Variation	$4.9 billion (7.8%)	-$1.6 billion (-2.6%)	-$0.3 billion (-0.5%)
Total Schedule Slippage [5]	708 months (26%)	793 months (29%)	801 months (32%)
Average Schedule Slippage per Project	28 months	30 months	32 months
In-year Schedule Slippage [6]	42 months (1%)	149 months (6%)	104 months (5%)
Total Project Maturity [7]	1479 / 1820 (81%)	1531 / 1890 (81%)	1484 / 1820 (82%)
Total Reported Risks and Issues [8, 9]	123	136	138
Expected Capability (Defence Reporting) • High level of confidence of delivery (Green)	99%	98%	99%
• Under threat, considered manageable (Amber)	1%	2%	1%
• Unlikely to be met (Red)	0% [10]	0% [10]	0%

Refer to paragraphs 22 to 36 in **Part 1** of this report.

Note 1: The data for the 26 Major Projects in the 2017–18 MPR compares the data from projects in the 2016–17 MPR and 2015–16 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, 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.

Note 3: These figures include a $0.8 billion correction to an error in prior year data.

Note 4: In the 2017–18 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 5: 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, Figure 10 reports in-year schedule reductions.

Note 6: Based on the 23 repeat projects from the 2014–15 MPR, 25 repeat projects from the 2015–16 MPR plus one new project (CMATS) that had slippage in 2016–17, and 23 repeat projects from the 2016–17 MPR respectively.

Note 7: The figures represent the total of the reported maturity scores divided by the total benchmark maturity score, in the PDSSs across all projects.

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: 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 10: Defence advised in these years 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.

Cost

23. 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 $59.4 billion, CMATS was granted a Real Cost Increase of $240.7 million by government in February 2018.[19,20] In addition, MRH90 Helicopters, Battle Comm. Sys (Land) 2B, UHF SATCOM and BMS have been required to draw upon contingency funds to complete project activities.

24. The approved budget for Major Projects included in this MPR has increased by $23.0 billion (38.7 per cent) since initial Second Pass Approval. Budget variations greater than $500 million are detailed in Table 3, below. However, as the MPR predominantly focusses on the approved capital budget, the ongoing costs of Project Offices[21] (acquisition), training, replacement capability, etc., are not reported here.

19 Defence has advised that: 'Real Cost Increases [are] attributed to any negotiated Foreign Military Sales or commercial contracts, where funds have been approved by government to increase the Project's budget: excluding '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; and 'Budgetary Adjustments' made to account corrections resulting from foreign exchange or indexation accounting estimation errors.'

20 In addition to the Real Cost Increase received by the CMATS project, Air Force received $2.2 million of additional funds for CMATS, making a total Real Cost Increase of $242.9 million paid by Government to Defence. At the same time Government also returned to the project $6.8 million of funds that had been temporarily harvested.

21 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 1.45 to 1.49 for the outcomes of this consideration.

Table 3: Budget variation over $500m post initial Second Pass Approval by variation type [1, 2]

Project	Variation	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 ($684.2m) and additional vehicles, trailers and equipment ($28.0m) at Revised Second Pass Approval	2013–14	0.7
	Other budget movements			**1.1**
Other	Scope increase/budget transfers (net)	Other scope changes and transfers	Various	1.1
	Price Indexation – materials and labour (net) (to July 2010) [3]			3.0
	Exchange Variation – foreign exchange (net) (to 30 June 2018)			3.0
	Total			**23.0**

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: 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 2017–18 PDSSs.

Schedule

25. Delivering Major Projects on schedule continues to present challenges for Defence[22]; affecting when the capability is made available for operational release and deployment by the Australian Defence Force, as well as the cost of delivery.

26. The total schedule slippage for the 26 selected Major Projects, as at 30 June 2018, is 801 months (2016–17: 793 months) when compared to the initial schedule.[23] This represents a 32 per cent (2016–17: 29 per cent) increase since Second Pass Approval. Table 4 below includes details

22 See Defence's analysis on pp. 81–82 in **Part 2** of this report.

23 As noted in Note 5 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 3 of Figure 7 of this report which shows that the slippage attributable to increases in project scope is 58 months.

of in-year and total schedule slippage by project. While the table shows a five per cent in-year slippage for 2017–18, the removal of completed projects (ARH Tiger Helicopters, Bushmaster Vehicles, Overlander Light, and Additional Chinook) has removed 98 months of slippage. The effect of these projects exiting the review explains the difference between the total schedule slippage in 2017–18 (8 months) and the total in-year slippage amount (104 months). Additionally, the Pacific Patrol Boat Replacement project added two months of slippage to the total of 801 months; the slippage occurred in 2015–16 but the project was reported in the MPR for the first time in 2017–18.

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 [3]	0	2	Additional MRTT	0	21
AWD Ships	0	35	ANZAC ASMD 2B	10	67
P-8A Poseidon	4	28	Pacific Patrol Boat Repl	0	2
MRH90 Helicopters	29	89	HATS	0	0
Growler	1	1	Collins RCS	0	109
MH-60R Seahawk	0	0	Battle Comm. Sys. (Land) 2A	13	30
Overlander Medium/Heavy	0	5	Maritime Comms	7	7
LHD Ships [3]	0	37	Hw Torpedo	0	63
Hawkei	0	0	UHF SATCOM [3]	12	21
Battlefield Airlifter	0	24	Collins R&S	13	112
Repl Replenishment Ships	0	0	ANZAC ASMD 2A	10	82
CMATS [3]	0	28	BMS [2]	N/A	N/A
Battle Comm. Sys. (Land) 2B	0	0	LHD Landing Craft [4]	5	38
			Total (months)	**104**	**801**
			Total (%)	**5**	**32**

Note 1: Refer to footnote 23.
Note 2: BMS does not have IOC or FOC milestones. These were to be linked to Work Packages B-D which received government approval in September 2017 under LAND 200. Work Package A achieved FMR in December 2017. MAA closure did not occur in October 2018 as forecast.
Note 3: These projects have been identified by Defence as Projects of Interest (see paragraph 1.17 in **Part 1**).
Note 4: The LHD Landing Craft PDSS shows an FOC forecast of 'TBA' (See the PDSS in **Part 3** of this report). For the purposes of slippage analysis in this report, the ANAO has reflected the slippage that had occurred for the project at the time of this report. The *Statement by the Secretary of Defence* in **Part 3** of this report notes that since 30 June 2018, FOC for this project has been rescheduled for the second half of 2019.
Source: ANAO analysis of the 2017–18 PDSSs.

27. Platform availability has contributed to the slippage experienced within some projects. For example, the submarine programs have been impacted by changes to docking schedules, following government commissioned reviews. Significant delays have also been experienced by those projects with the most developmental content: AWD Ships, MRH90 Helicopters, CMATS and ANZAC ASMD 2B. Additionally, delays to operational test and evaluation activities have led to delays to the LHD Ships and LHD Landing Craft projects.

28. Table 5, below, provides details of total schedule slippage by project, for projects that have exited the MPR. Compared to the 801 months total schedule slippage for the current 26 Major Projects, the 18 projects which have exited the MPR have reported accumulated schedule slippage of 699 months, as at their respective exit dates. Again, schedule slippage was more pronounced in projects with the most developmental content.

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

Project	Total (months)	Project	Total (months)
Wedgetail (Developmental)	78	Next Gen Satellite [1] (MOTS)	0
Super Hornet (MOTS)	0	Additional Chinook	6
Hornet Upgrade (Australianised MOTS)	39	HF Modernisation (Developmental)	147
ARH Tiger Helicopters (Australianised MOTS)	82	Armidales (Australianised MOTS)	45
C-17 Heavy Airlift (MOTS)	0	SM-2 Missile (Australianised MOTS)	26
Air to Air Refuel (Developmental)	64	155mm Howitzer (MOTS)	7
FFG Upgrade (Developmental)	132	Stand Off Weapon (Australianised MOTS)	37
Bushmaster Vehicles (Australianised MOTS)	1	Battle Comm. Sys. (Australianised MOTS)	24
Overlander Light (Australianised MOTS)	9	C-RAM (MOTS)	2
Total			**699**

Note 1: 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.

29. Additional ANAO analysis (refer to Figure 7, on page 51) has compared project slippage against the Defence classification of projects as Military Off-The-Shelf (MOTS), Australianised MOTS or developmental.[24] These classifications are a general indicator of the difficulty associated with the procurement process. This analysis highlights, prima facie, that the more developmental in nature a project is, the more likely it will result in a greater degree of project slippage, as well as demonstrating one of the advantages of selecting MOTS acquisitions.[25]

30. Figure 8 (on page 52) provides analysis of projects either completed, or removed from the MPR review, and shows that a focus on MOTS acquisitions has assisted in reducing schedule slippage. Figure 8 was requested by the JCPAA in May 2014.[26]

31. 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 2.29 to 2.33).

24 See Table 6 in **Part 2** of this report for Defence classifications.

25 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*', 2016, Annex 1A, Definitions, p. iii.

26 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.

Capability

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

33. The Defence PDSSs report that 23 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 three project offices experiencing challenges with expected capability delivery (2016–17: three) are Joint Strike Fighter, MRH90 Helicopters, and LHD Landing Craft. No project offices report that they are currently unable to deliver all of the required capability by FOC.

34. 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 2018, 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 2018	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	0	Second aircraft, remaining spares and support equipment, and Aircraft Stores Replenishment Vehicle are yet to be delivered.
Total (number)	**5**	**2**	—
Total (%)	**100**	**40**	—

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

35. Table 7 below, summarises expected capability delivery as at 30 June 2018 — as reported by Defence and using the ANAO's Capability Delivery Progress measure.

Table 7: Capability delivery

Expected Capability (Defence Reporting)	2015–16 MPR (%)	2016–17 MPR (%)	2017–18 MPR (%)	Capability Delivery Progress (ANAO Analysis)	2017–18 MPR (%)	2017–18 MPR (%) Adjusted [2]
High Confidence (Green)	99	98	99	Delivered	72	61
Under Threat, considered manageable (Amber)	1	2	1	Not yet delivered	28	39
Unlikely (Red)	0 [1]	0 [1]	0	Not delivered at FOC	0	0
Total	**100**	**100**	**100**	**Total**	**100**	**100**

Note 1: Defence advised that in these years Joint Strike Fighter would not deliver one element of capability at FOC, of a total of 79 elements required for the project (which equated to approximately one per cent). However, across all the Major Projects this percentage rounds to zero.

Note 2: In prior years, ANAO adjusted for projects that disproportionately weighted the calculation of Capability Delivery Progress (those projects with large numbers of deliverables) by excluding them from the analysis. In 2017–18, the ANAO has used a different adjustment method. 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.

36. In addition to reporting on expected capability delivery, Defence has continued the practice of including declassified information on settlement actions for projects. 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 review's scope and approach, as implemented 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 evidence[27], 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 $2.1 million.

27 Refer to footnote 11.

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;
- interviews 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:

- resolution of matters described in the Auditor-General's prior year (2016–17) qualified *Independent Assurance Report*, relating to the ARH Tiger Helicopter PDSS[28];
- developments in acquisition governance (See paragraphs 1.10 to 1.25, 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 2017–18 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);

28 The Auditor-General was unable to provide an unqualified *Independent Assurance Report* for 2016–17 as a number of matters were identified, in the course of the ANAO's review, that resulted in the qualification of progress and performance as reported in the ARH Tiger Helicopters PDSS. See Auditor-General Report No.26 of 2017–18, *2016–17 Major Projects Report*, paragraphs 20–25 and pp. 111–113.

- 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 the 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 2017–18 review period. It also highlighted issues in those systems and processes that warrant attention.

Acquisition governance

1.10 Consistent with previous years, the context of acquisition governance processes are covered in the ANAO's review and informs the review planning process. 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.[29,30]

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.[31]

1.13 Seventeen of the 26 projects included in this report had an Independent Assurance Review conducted during 2017–18[32], which formed key corroborative evidence for the ANAO's review.

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

30 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.

31 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.

32 Independent Assurance Reviews were conducted for: Joint Strike Fighter, AWD Ships, MRH90 Helicopters, Growler, MH-60R Seahawk, Overlander Medium/Heavy, LHD Ships, Hawkei, Battlefield Airlifter, Repl Replenishment Ships, Battle Comm. Sys. (Land) 2B, CMATS, Pacific Patrol Boat Repl, HATS, Battle Comm. Sys. (Land) 2A, UHF SATCOM, and LHD Landing Craft. Fourteen projects had reviews scheduled for late 2018.

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.[33,34] As at 30 June 2018, 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.[35]

1.15 In August 2017, the Ministers for Defence and Defence Industry announced[36] that the Civil Military Air Traffic Management System (CMATS) project was being placed on the list due to substantial challenges getting into contract.[37,38] The Ministers for Defence and Defence Industry subsequently announced in February 2018[39] that the project would be removed from the Projects of Concern list due to having achieved this milestone.[40]

Quarterly Performance Report

1.16 The Quarterly Performance Report (QPR) aims to provide senior stakeholders within government and Defence with a clear and timely understanding of emerging risks and issues in the delivery of capability to the Australian Defence Force's end-users.[41] Defence has advised that the report is provided to the Minister for Defence and the Minister for Defence Industry on a quarterly basis.[42]

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33 Department of Defence, *Defence Annual Report 17–18,* Chapter 8, Asset Management, Purchasing and Capital Investment, Defence, Canberra, 2018, p. 123.

34 A performance audit assessing whether Defence's Project of Concern regime is effective in managing the recovery of underperforming projects is expected to table in Quarter 3 of 2018–19.

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

36 C Pyne (Minister for Defence Industry), M Payne (Minister for Defence), 'Projects of Concern Update', media release, Parliament House, Canberra, 18 August 2017.

37 Defence has advised that the project was placed on the list because 'negotiations were taking longer than expected, and the costs were increasing significantly, and the schedule was not being achieved.' Commonwealth, *Estimates*, Senate Foreign Affairs, Defence, and Trade Legislation Committee, 25 October 2017, VADM R Griggs, Acting Chief of the Defence Force, Department of Defence.

38 See the CMATS PDSS in **Part 3** of this report.

39 C Pyne (Minister for Defence Industry), M Payne (Minister for Defence), 'OneSKY ready for take off', media release, Parliament House, 26 February 2018.

40 A performance audit assessing whether the contract for the acquisition of the CMATS has demonstrably delivered value for money is in progress.

41 Department of Defence, *June 2018, Quarterly Performance Report*, Defence, Canberra, 2018, p. 5.

42 Auditor-General Report No.2 2017–18, *Defence's Management of Materiel Sustainment*, paragraph 16, p. 9, found that the contents of Quarterly Performance Reports are neither complete nor reliable, and may not include additional information available to Defence that is critical to the reader's ability to understand the status of significant military platforms. Since this audit, Defence has advised that it has reduced the jargon within QPRs and included considerations of Maturity Scores and Independent Assurance Review outcomes.

1.17 In 2017–18, further to the MRH90 Helicopters MPR project of concern noted above, the June 2018 QPR also identified four MPR projects as Projects of Interest[43]:

- Joint Strike Fighter, noting risks related to affordability, IOC and FOC deliverables, with consideration being given to de-scoping the project to address these risks;
- Civil Military Air Traffic Management System (CMATS), noting risks to schedule due to execution of design milestones and poor scope definition, planning and dedicated resources attributed to the Four Alternate Tower Solution;
- LHD Ships due to the late delivery of ships, a large number of outstanding requirements, defects and deficiencies, and an immature support system; and
- UHF SATCOM, due to issues with the modification of Commercial Off-The-Shelf software (an element of the project now considered developmental) and delays in the security accreditation process.

1.18 The ongoing issues highlighted above for Joint Strike Fighter, LHD Ships, CMATS, and UHF SATCOM align with the results of the ANAO's review. Delays to progress have impacted the delivery schedule of UHF SATCOM during 2017-18[44] (see Table 4, on page 14).

Joint Project Directives and Materiel Acquisition Agreements

1.19 Joint Project Directives (JPDs) state the terms of government approval and are used to inform internal documentation such as Materiel Acquisition Agreements (MAAs) between Capability Acquisition and Sustainment Group (CASG) and the Service Chiefs.[45,46]

1.20 In some cases JPDs have been finalised after the MAAs they are intended to inform and, as a result, care is required to ensure that JPDs properly reflect the relevant government decision, and that MAAs are appropriately aligned with the relevant JPD. For all three new projects entering the 2017–18 MPR, the projects had their JPD signed prior to the MAA which demonstrates improvement in this regard.

43 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, *June 2018, Quarterly Performance Report*, Defence, Canberra, 2018, p. 15.

44 UHF SATCOM had 12 months of in-year slippage.

45 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 exact parameters agreed by government. Department of Defence, '*Interim Capability Life Cycle Manual*', Annex A, 2017, p. 93. The mechanism for providing the directive is via the Capability Life Cycle (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.

46 The Interim Capability Life Cycle Manual does not describe MAAs and instead refers to Product Delivery Agreements (PDAs) (see paragraph 1.23). Projects in this MPR have an approved MAA.

1.21 In 2017–18, 16 of the 17 MPR projects approved from 1 March 2010, have completed a JPD.[47] However, 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.

1.22 The ANAO will continue to take JPDs into account in its review program in future years. The extent to which they can be relied upon will be dependent on the completeness and accuracy of JPDs, in relation to recording the detail of government approvals.

1.23 Product Delivery Agreements (PDAs) were being developed to replace the existing MAAs and Materiel Sustainment Agreements (MSAs)[48], however Defence has since advised that this initiative has not progressed.

Business systems

1.24 Defence continues to review its business systems with the aim of consolidating processes and systems in order to provide a more manageable system environment.[49] 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 although replacement of this system is still under consideration. 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'.

1.25 In October 2018, Defence advised that it had concluded its trial of the Project Performance Review in November 2017. The PPR is a spreadsheet with project performance information intended to be used by project managers to inform discussions with Project Directors and Branch Heads. In January 2018 Defence initiated a plan to implement the PPRs across CASG. Defence has advised that seven MPR projects are currently preparing a PPR in Microsoft Excel form.[50] Defence planned to then implement a streamlined ICT system to 31 projects commencing in November 2018. Defence has advised that it now expects this implementation to commence in December 2018, however it is not clear whether this will take the form of spreadsheets or a bespoke ICT system.

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47 Joint Strike Fighter (Stage 2), P-8A Poseidon, Growler, MH-60R Seahawk, Overlander Medium/Heavy, Battlefield Airlifter, Repl Replenishment Ships, Battle Comm Sys (Land) 2B, Additional MRTT, CMATS, Pacific Patrol Boat Repl, HATS, Battle Comm. Sys. (Land) 2A, Maritime Comms, BMS and LHD Landing Craft. As at 30 June 2018, the JPD for the Hawkei project was still in draft.

48 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*', Annex A, Definitions, 2017, p. 92.

49 Business system weaknesses, such as project offices having inconsistent record keeping and methods of tracking project progress were highlighted by the Committee in 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), paragraph 3.116, p. 39. With regard to Defence's risk management systems see Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), paragraph 2.10, p. 5.

50 Spreadsheets lack formalised change/version control and reporting, increasing the risk of error. See paragraph 1.55 for further detail.

Results of the review

1.26 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 2017–18.

Financial framework

1.27 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.

1.28 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.[51]

1.29 In 2017–18, the ANAO reviewed the financial framework as it applied to managing project budgets and expenditure, including: contingency, project financial assurance, the reporting environment, and reporting cost variations and personnel costs.

Project financial assurance statement

1.30 The project financial assurance statement was added to the PDSSs 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'.[52] Defence advised on 27 October 2017 that the administrative policy supporting this statement was 'no longer current as it is an artefact of the previous DMO agency'. Defence then advised in January 2018 that there is no Defence policy in place supporting the current administrative practice, but that the previously used policy would represent 'good practice'.

1.31 In 2017–18 the CMATS project was granted a significant Real Cost Increase of $240.7 million by government in February 2018[53] which has enabled the project to state that 'there is sufficient budget remaining for the project to complete against the agreed scope', which had not been possible in the previous MPR.[54]

1.32 Unlike in previous years, Defence advised in January 2018 that it would no longer subject a sample of project financial assurance statements to a third-party agreed-upon procedures engagement to support the Chief Finance Officer in determining the appropriateness of the

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

52 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.

53 At the same time government also returned $6.8 million of funds that had been temporarily harvested.

54 Auditor-General Report No.26 of 2017–18, *2016–17 Major Projects Report*, p. 265.

statements. The ANAO agreed with this approach which was endorsed by the JCPAA in the 2017–18 MPR Guidelines.

1.33 In conclusion, for the 2017–18 Major Projects Report, the Chief Finance Officer's representation letter to the Secretary on the 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 2018.

Contingency statements and contingency management

1.34 The purpose of the project contingency budget is 'to provide adequate budget to cover the inherent risk of the in-scope work of the project'.[55] Defence policy requires project offices to maintain a contingency budget log to identify and track components of the contingency budget.[56]

1.35 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) requires that contingency be applied for identified risk mitigation activities which have been assessed as being cost effective and representing value for money.

1.36 Contingency provisions for projects are not programmed into a project's cash budget. As such, projects are encouraged to rely on cash budget management and savings to mitigate risks. Where this is not sufficient, projects can submit a request to Defence Finance Group to access contingency. If this cannot be managed within the Approved Major Capital Investment Program cash budget, consideration by the Defence Investment Committee is sought on how best to manage the call within the overall Integrated Investment Program.

1.37 A Defence internal audit, finalised in August 2018, concluded that Defence has been able to fund contingency calls through internal project or program management decisions and project slippage.[57] The advent of large scale, high cost and high risk projects has created an environment whereby Defence Senior Executives consulted by the internal audit team expressed concern that it may become more difficult for Defence to redistribute cash funding to manage contingency events without compromising either the timeliness or level of capability delivered.[58]

55 Department of Defence, DMM (PROJ) 11-0-002, '*DMO Project Risk Management Manual 2013*', Chapter 9 – Management of Contingency Budgets in DMO Acquisition Projects, 2013, p. 108.

56 The manual requires that the Project Contingency Budget Log is kept up to date for the proper overall management of risk and that it is submitted for internal review at Additional and Budget estimates.

57 Slippage in this context refers to 'ensuring that planned project expenditure does not exceed available cash… [as these] underspends would be forfeited in each year and gradually reduce the total approved budget available for a project.' As noted in Department of Defence, '*Contingency Funding Management*', Internal Audit, 2018, p. 6.

58 Department of Defence, '*Contingency Funding Management*', Internal Audit, 2018, pp. 3 and 5.

1.38 The ANZAC ASMD 2B project PDSS[59] notes that access to contingency funding to remediate unplanned obsolescence issues was denied during Defence budget processes.[60]

1.39 The four project offices which had contingency funds applied in 2017–18 were MRH90 Helicopters (supportability and performance risks), Battle Comm. Sys. (Land) 2B (Interface Control Integration), UHF SATCOM (software review and system security) and BMS (Risk Reduction Activities related relating to the M1A1 Tank Weapons Integrated Battle Management System).

1.40 The ANAO's examination of the contingency statements as at 30 June 2018 also highlighted that:

- the clarity of the relationship between contingency application and identified risks continues to be an issue. Of the 25 project offices that have a formal contingency allocation[61], seven projects (Joint Strike Fighter, Overlander Medium/Heavy, Repl Replenishment Ships, Battle Comm. Sys. (Land) 2B, CMATS, Pacific Patrol Boat Repl and BMS) did not explicitly align their contingency log with their risk log, by including risk identification numbers as required by PRMM version 2.4;
- the method for allocating contingency varied, with 22 project offices using the 'expected costs' of the risk treatment (as required by PRMM version 2.4), with Pacific Patrol Boat Repl and Repl Replenishment Ships having not yet allocated contingency against risks. The Overlander Medium/Heavy project used the proportionate allocation of the likelihood of the risk eventuating (the method outlined in PRMM version 2.2); and Collins R&S does not have a formal contingency allocation;
- there were 16 project offices 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.

1.41 Non-compliance with PRMM version 2.4 has resulted in inconsistent approaches taken to the management of contingency, 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 paragraph 1.53).

Reporting environment

1.42 On April 4 2018, following a submission to the JCPAA hearing held on 23 March 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). Therefore actual expenditure in the PDSSs may not be consistent with that reported in previous MPRs which had

59 See the ANZAC ASMD 2B PDSS in **Part 3** of this report.

60 A performance audit on sustainment of the ANZAC class frigates is in progress and is expected to table in February 2019.

61 The Collins R&S project does not have a formal contingency allocation.

been prepared on an accrual basis. ANAO analysis of the overall variance showed that the difference was approximately 1.5 per cent between accrual and cash expenditure in the 2016–17 MPR.[62]

1.43 Defence obtains cash expenditure data using a management reporting tool called BORIS. In previous MPRs, accrual expenditure data was extracted from the Financial Management Information System known as ROMAN. Given the change in the extraction method, the ANAO requested evidence from Defence to support that the outputs of the BORIS tool were complete and accurate at the project level.

1.44 Defence was unable to provide sufficient evidence to support this position at the project level, so the ANAO requested that Defence conduct a reconciliation of all cash expenditure data from BORIS to the ROMAN Financial Management Information System which holds the transaction data. This activity concluded in early November 2018 and enabled assurance over the cash expenditure to be obtained by the ANAO.

Reporting cost variations since Second Pass Approval and personnel costs

1.45 In May 2018, the JCPAA wrote to the Auditor-General to request that the ANAO report back to it on how Defence Major Projects cost variations and the cost of retaining project staff might be reported annually in future MPRs.[63] The JCPAA further asked the Auditor-General to consider presenting any relevant available data in the 2017–18 MPR.

1.46 The JCPAA indicated that it would consider whether inclusion of such information adds value to the MPR, with a view to amending the associated guidelines for future MPRs if the information proved to be useful in increasing oversight of expenditure.

1.47 In consultation with Defence, the PDSSs in this report have been amended to include the project budget at Second Pass Approval[64] in addition to the project's current approved budget to show any variations between them. In September 2018, the JCPAA endorsed the 2018–19 MPR Guidelines which require that this information is provided in future MPRs.[65]

1.48 A table of all budget variations post initial Second Pass Approval for the projects is also provided at Table 8, on page 40.

1.49 The reporting of the costs of project staff has proven to be more challenging. Defence advised the ANAO in November 2018 that its current IT systems do not provide a direct mapping of personnel to projects, with personnel often working on multiple projects and sustainment activities at any given time. Defence has advised the ANAO that while it is not yet in a position to provide the staff cost component of projects, it has begun to collect information on the numbers of staff

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

63 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 additional estimates on 27 February 2018.

64 Where a project has multiple Second Pass Approvals, the budget at Second Pass Approval reported in the Header of the PDSS refers to the total budget as at the latest Second Pass Approval. The body of the PDSS also references the budget at initial Second Pass Approval.

65 This can be found in the following Sections of each PDSS: Header and Section 2.1 Project Budget (out-turned) and Expenditure History.

(including Australian Defence Force and Australian Public Service, but not contractors) for projects.[66] Further information on staff numbers will be reported in the 2018–19 MPR.

Enterprise Risk Management Framework

1.50 While major risks and issues data in the PDSSs remains excluded from the formal scope of the Auditor-General's *Independent Assurance Report*[67], 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.

1.51 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.

1.52 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 within Defence's risk management framework. CASG is part way through the reform initially intended to be completed by June 2019, with Defence advising that completion is now expected to occur by the end of 2019, and then taking a number of annual cycles to reach maturity.[68]

1.53 The next stage of the reform will provide project specific guidance and tools to support risk management practices of projects. The ANAO has observed that some projects chose not to review risk and issues management procedures until this stage has completed, as noted at paragraph 1.41. 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.

1.54 In 2017–18, 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.[69] 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; 11 out of 26 Major Projects did not validate the currency of the Risk Management Plan in line with PRMM version 2.4[70];
- the visibility of risks and issues when a project is transitioning to sustainment;

66 Defence has advised that CASG is implementing a 'Capacity Management' system to examine workforce demand and supply data, which is expected to reach maturity in 2020.

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

68 See **Part 2** of this report.

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

70 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.

- for four projects (JSF, HATS, Collins RCS and Hw Torpedo), sustainment and acquisition risks are managed together, despite Defence risk management policy for acquisition and sustainment providing inconsistent guidance[71];
- one project (Repl Replenishment Ships) early-adopted draft guidance from Defence intended to be used to prompt discussion as part of the CASG risk reform, only to be advised by the Defence Enterprise Risk Management Branch that this was not compliant with current Defence acquisition risk management guidance;
- 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 used[72]; and
- lack of quality control resulting in inconsistent approached in the recording of issues within Predict!

1.55 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 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 13 utilise spreadsheets[73] as their primary risk management tool, seven utilise Predict![74], one (LHD Ships) utilises both Microsoft Excel and Predict!, two (JSF and CMATS) utilise a bespoke SharePoint based tool, one (MH-60R Seahawk) utilises Microsoft Word and two (Collins RCS and Hw Torpedo) do 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 1.52).

1.56 The JCPAA made a recommendation in September 2018 for Defence to plan and report a methodology to the Committee which shows how acquisition projects can transition from the use of spreadsheet risk registers to tools with better version control.[75]

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71 Defence risk management guidance for acquisition projects is the *Project Risk Management Manual,* version 2.4, 2013; and guidance for sustainment products is the DMM (LOG) 04-0-003, *Defence Materiel Manual (Logistics Management)*, which provide different consequence and likelihood descriptors.

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

73 The 13 projects are: MRH90 Helicopters, Growler, Battlefield Airlifter, Repl Replenishment Ships, Additional MRTT, CMATS, ANZAC ASMD 2B, HATS, Battle Comm. Sys. (Land) 2A, UHF SATCOM, Collins R&S, ANZAC ASMD 2A and BMS.

74 The seven projects are: AWD Ships, P-8A Poseidon, Overlander Medium/Heavy, Hawkei, Battle Comm. Sys. (Land) 2B, Pacific Patrol Boat Repl and Maritime Comms.

75 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.

Project maturity framework

1.57 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.[76]

1.58 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.[77] Comparing the maturity score against its expected life cycle gate benchmark provides internal and external stakeholders with a useful indication of a project's progress.

1.59 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 effectively 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.

1.60 In May 2016, the JCPAA recommended 'that the Department of Defence work with the Australian National Audit Office to review and revise Defence's policy regarding Project Maturity Scores in time for the new approach to be implemented in the next Major Projects Report.'[78] Again in October 2017, the JCPAA recommended 'that the Department of Defence commence discussions with the Australian National Audit Office on updating Project Maturity Scores.'[79] 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

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

77 See Appendix 4 in **Part 2** of this report and footnote 16 for further detail.

78 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.

79 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.

policy.[80] Defence advised the ANAO in September 2018 that the maturity score process is now being re-considered within the CASG risk reform context.

Caveats

1.61 In 2017–18, the ANAO noted a reduced trend of Major Projects which have achieved significant milestones with caveats.[81] The ANAO also notes advice from Defence that it discourages Independent Assurance Reviews recommending caveats at FOC. Growler is the only MPR project which has achieved a major milestone with caveats, related to training requirements for IMR in 2017, which have since been resolved.[82]

1.62 The ANAO will continue to monitor the declaration and resolution of caveats in future reviews, including those related to 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.[83] In 2017–18, the ARH Tiger Helicopters project, which has exited the MPR, reported the closure of remaining caveats.[84]

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

81 In May 2016, Defence described caveats to the ANAO as 'alerts' to operational decision makers about risks to be taken into account when making decisions about the use of the ARH Tiger Helicopter in particular operational circumstances. Auditor-General Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, p. 25.

82 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 — see **Part 3** of this report).

83 This requirement was agreed to by Defence and included in the *2017–18 Major Projects Report Guidelines* endorsed by the JCPAA in September 2017 which are included in **Part 4** of this report.

84 See *Statement by the Secretary of Defence* p. 135.

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 ANAO utilises three key performance indicators to analyse the major dimensions of projects' progress and performance. These indicators are the:

- percentage of budget expended (Budget Expended) — which measures the total expenditure as a percentage of the total current budget;
- percentage of time elapsed (Time Elapsed) — which measures the percentage of time elapsed from original approval to the forecast Final Operational Capability (FOC)[85]; and
- percentage of key materiel capabilities delivered (Capability Delivery Progress) — which measures the total capability elements delivered as a percentage of the total capability elements across all Major Projects.

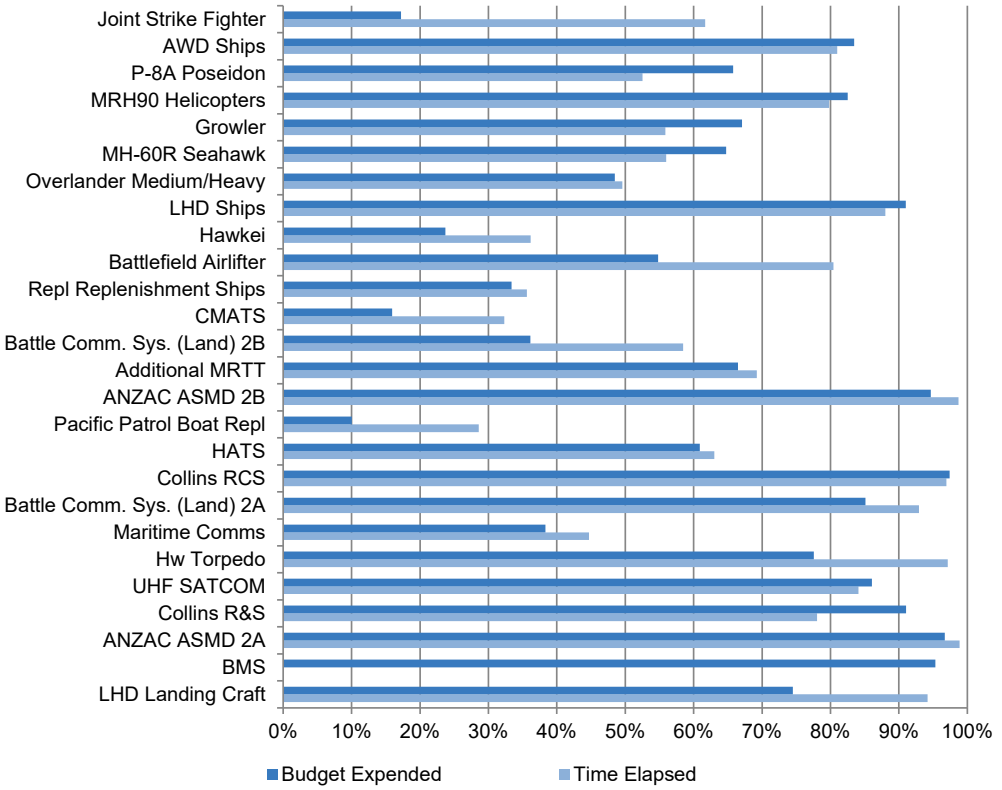
2.4 The ANAO has previously utilised Defence's prediction of expected final capability, as reported in Section 4.1 of each Project Data Summary Sheet (PDSS). In 2015–16, the ANAO derived an indicator for 'Capability Delivery Progress', which aims to show the current capability delivered, in terms of 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 components of project performance. This includes in-year information, longitudinal analysis and the results of project progress for the year-ended 30 June 2018. The first piece of analysis, in Figure 2 below, sets out each project's Budget Expended and Time Elapsed.[86]

85 Refer to footnote 14 for the definition of IMR and FMR milestones, and footnote 15 for the definition of IOC and FOC milestones.

86 A project's budgeted cost and schedule data is at 30 June 2018, and may differ from originally approved budgets and schedules.

Figure 2: Budget Expended and Time Elapsed



Note: BMS does not have IOC or FOC milestones. These were to be linked to Work Packages B-D which received government approval in September 2017 under LAND 200. Work Package A achieved FMR in December 2017. MAA closure did not occur in October 2018 as forecast.

Source: ANAO analysis of the 2017–18 PDSSs.

2.6 Figure 2 shows that for most projects (22 of 26), Budget Expended is broadly in line with, 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. However this is not the case for the four projects where the Budget Expended is over 20 per cent less than the Time Elapsed in 2017–18, as detailed below:

- Joint Strike Fighter (Budget Expended 17 per cent, Time Elapsed 62 per cent) — a large scope increase ($10.5 billion) for the purchase of additional aircraft was approved in April 2014, with the project now beginning to enter into main production contracts, as aircraft development continues;

- Battlefield Airlifter (Budget Expended 55 per cent, Time Elapsed 80 per cent) — the project is yet to enter contracts relating to the acquisition of training devices. However, all ten aircraft have been delivered;
- Battle Comm. Sys. (Land) 2B (Budget Expended 36 per cent, Time Elapsed 58 per cent) — the project is still in design phases for some elements, with the project's payment schedule structured so that the majority of payment milestones fall towards the end of the project's life; and
- LHD Landing Craft (Budget Expended 74 per cent, Time Elapsed 94 per cent) — the variance reflects contingency and unallocated funds remaining as the project approaches closure.

2.8 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 three projects where Budget Expended leads Time Elapsed by 10 per cent or more, the actual reasons are related either to early procurement of major equipment due to production timing, or schedule delays caused through platform availability, as detailed below:

- P-8A Poseidon (Budget Expended 66 per cent, Time Elapsed 53 per cent) — the majority of project expenditure is aligned with aircraft production, with seven out of 12 aircraft already delivered and the final aircraft scheduled for delivery in 2019–20, with FOC not scheduled until May 2022;
- Growler (Budget Expended 67 per cent, Time Elapsed 56 per cent) — expenditure reflects aircraft production costs (which represent a large proportion of project costs) having occurred before a large decrease in annual expenditure over the following years as work continues on the Mobile Threat Training Emitter System. All aircraft have now been delivered to Defence. The variance is also exacerbated by the length of time between Initial Operational Capability (IOC) (July 2018) and FOC (June 2022) with most of the major equipment being delivered by 2018; and
- Collins R&S (Budget Expended 91 per cent, Time Elapsed 78 per cent) — most of the materiel has been acquired and expenditure undertaken. In addition, originally planned installation dates have been extended based on submarine availability, reducing the proportion of time elapsed. Furthermore, in 2017–18, the project schedule was extended due to additional scope transferred from other projects, but additional budget to fund this scope was not transferred during the financial year, reducing Time Elapsed without reducing Budget Expended.

2.9 In each case, the performance information highlights projects requiring further attention. This is to ensure that surplus 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

2.10 Figure 3, below, sets out each project's Budget Expended against Project Maturity[87] and shows that Budget Expended lags Project Maturity for the majority of projects (19 of 26). This relationship is expected 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 of total Project Maturity at Second Pass Approval (the main investment decision by government)[88] prior to any significant expenditure of budget.

2.11 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.

2.12 Budget Expended lags Project Maturity with a variance of 20 per cent or more in 13 projects. As expected, the majority of these projects are at relatively early stages 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 MH-60R Seahawk (all helicopters delivered while some weapons and training devices are outstanding), Battlefield Airlifter (all aircraft delivered while some training devices are outstanding), and HATS (all helicopters delivered while some training devices are outstanding). Additionally, LHD Landing Craft's Budget Expended lags Project Maturity as this project has delivered all 12 vessels and other scope without requiring the full budget to be expended.

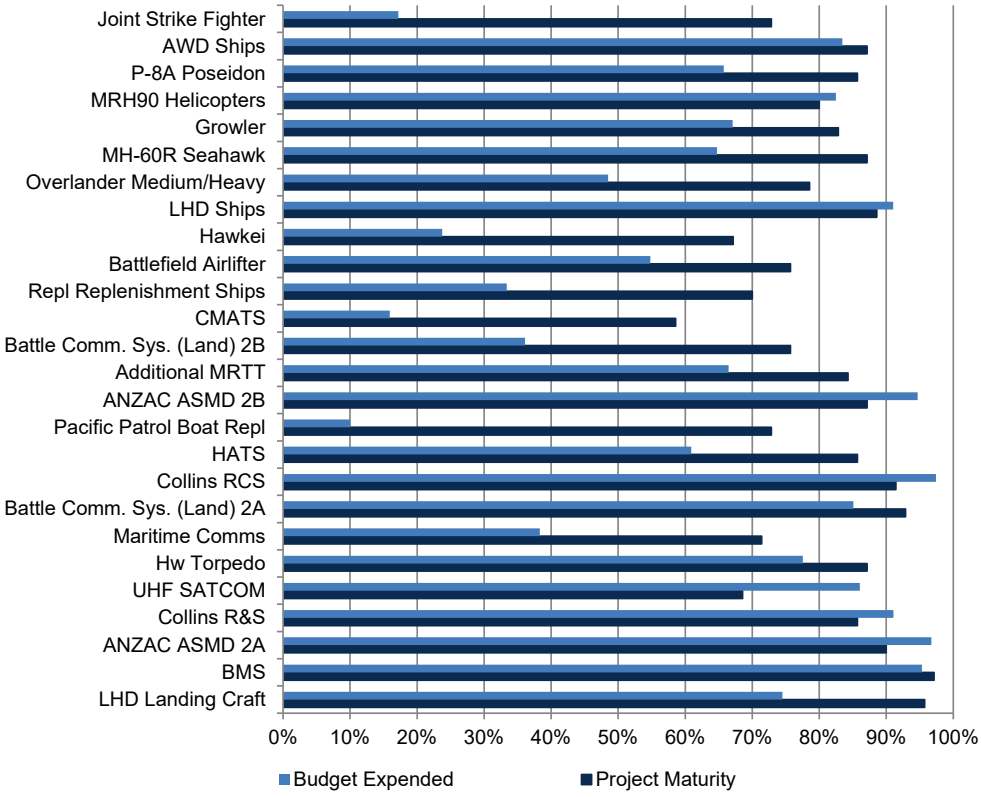
2.13 Where Budget Expended leads Project Maturity by a significant amount, this may indicate that the project is behind in development or achievement of its scope, or that the required scope

87 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.

88 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.

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 17 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 is funding further development with contingency.

Figure 3: Budget Expended and Project Maturity



Source: ANAO analysis of the 2017–18 PDSSs.

Second Pass Approval and 30 June 2018 approved budget

2.14 Figure 4, below, compares each project's approved budget at initial Second Pass Approval and its approved budget at 30 June 2018.

2.15 The total budget for the 26 projects at 30 June 2018 was $59.4 billion, a net increase of $23.0 billion, when compared to the approved budget at initial Second Pass Approval of $36.5 billion.[89]

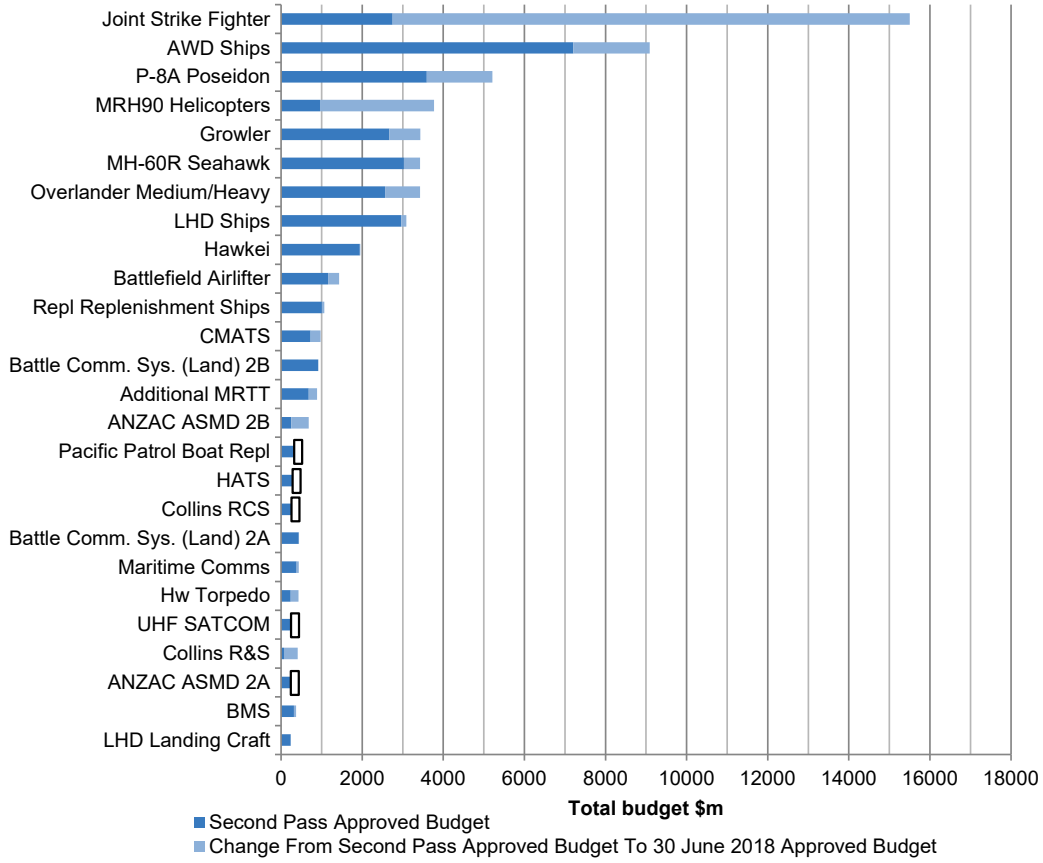
2.16 Figure 4 indicates all relative budget variations from initial Second Pass Approval. Six projects have variations of $500 million or more. The list below describes the components of these variations:

- Joint Strike Fighter — increase of $12.8 billion, comprising $10.5 billion for 58 additional aircraft in 2013–14, $1.9 billion for exchange rate variation and $0.4 billion for price indexation;
- AWD Ships — increase of $1.9 billion, comprising $1.2 billion for a Real Cost Increase[90] 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 $1.6 billion, comprising $1.3 billion for four additional aircraft in 2015–16 and $0.3 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, $0.2 billion in 2014–15 for the Mobile Threat Training Emitter System and weapons, and $0.1 billion in 2016–17 for Advanced Mobile Threat Training Emitter System scope, offset in 2015–16 by a $0.2 billion decrease for transfers to facilities projects and $0.1 billion for the return to the Defence budget of surplus funds for reallocation, and in 2016–17 by a $0.1 billion decrease for the reduction of project contingency associated with aircraft production being returned to the Defence budget for re-allocation; and
- Overlander Medium/Heavy — increase of $0.9 billion, comprising $0.7 billion project supplementation associated with easing cost pressures and $0.2 billion exchange rate variation.

89 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 and a more detailed analysis of this variance is included in Table 8 on page 40.

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

Figure 4: Projects' initial Second Pass Approval and 30 June 2018 approved budget ($m)



Note 1: ▯ indicates that the budget for the project at 30 June 2018 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 2017–18 PDSSs.

Table 8: Budget variation post initial Second Pass Approval by variation type as at 30 June 2018 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.6 of 2012–13: Management of Australia's Air Combat Capability – F-35A Joint Strike Fighter Acquisition Auditor-General Report No.14 Joint Strike Fighter — introduction into service and sustainment planning
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: Air Warfare Destroyer Program Auditor-General Report No.57 of 2010–11: Acceptance into Service of Navy Capability
AIR 7000 Phase 2B Maritime Patrol and Response Aircraft System	3577.7	Scope increase	Four additional aircraft	2015–16	1295.4	N/A
AIR 9000 Phase 2/4/6 Multi-Role Helicopter [2]	957.2 (Phase 2)	Scope increase/Budget transfers	34 additional aircraft (Phase 4/6 Second Pass Approval), offset by minor transfers	2005–06	2270.7	Auditor-General Report No.9 of 2015–16: Test and Evaluation of Major Defence Equipment Acquisitions (paragraph 4.54) Auditor-General Report No.52 of 2013–14: Multi-Role Helicopter Program Auditor-General Report No.57 of 2010–11: Acceptance into Service of Navy Capability
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

Project	Initial Second Pass Approval Budget $m	Variation	Explanation of Variation	Year/s of Variation	Total Amount of Variation $m	Performance Audits
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
LAND 121 Phase 3B Medium/Heavy Capability, Field Vehicles, Modules and Trailers [2]	2549.2	Project supplementation and Scope increase/Budget transfers	Project supplementation ($684.2m) and additional vehicles, trailers and equipment ($28.0m) at Revised Second Pass Approval	2013–14	712.2	Auditor-General Report No.52 of 2014–15: Australian Defence Force's Medium and Heavy Vehicle Fleet Replacement (LAND 121 Phase 3B)
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
SEA 1654 Phase 3 Maritime Operational Support Capability	1004.6	Budget Transfer	Transfer for training	2015–16	69.1	N/A

Project	Initial Second Pass Approval Budget $m	Variation	Explanation of Variation	Year/s of Variation	Total Amount of Variation $m	Performance Audits
AIR 5341 Phase 3 Civil Military Air Traffic Management System (CMATS)	731.4	Real Cost Increase/ Budgetary Adjustment	Real Cost Increase offset by minor transfers	2017–18	240.7	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 Performance audit currently underway: OneSKY Contractual Arrangements
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	183.0	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 and 2011–12	363.4	Performance audit currently underway: Anzac class frigates - sustainment
SEA 1439 Phase 4A Collins Replacement Combat System	455.3	Budget transfers/Budgetary adjustment	Minor transfers	2002–03 and 2004–05	(1.7)	ANAO Report No.57 of 2010–11: Acceptance into Service of Navy Capability ANAO Report No.23 of 2008–09: Management of the Collins-class Operations Sustainment
JP 2072 Phase 2A Battlespace Communications Systems	436.4	Real Cost Decrease	Real Cost Decrease	2017–18	(25.6)	
SEA 1429 Phase 2 Replacement Heavyweight Torpedo	238.1	Scope increase/ Budgetary adjustment/Budget transfers	Implementation of full scope and minor transfers	2002–03 and 2004–05	214.2	ANAO Report No.57 of 2010–11: Acceptance into Service of Navy Capability

Project	Initial Second Pass Approval Budget $m	Variation	Explanation of Variation	Year/s of Variation	Total Amount of Variation $m	Performance Audits
JP 2008 Phase 5A Indian Ocean Region UHF SATCOM	460.9	Real Cost Decrease	Real Cost Decrease	2013–14	(18.0)	N/A
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 and 2006–07	271.3	ANAO Report No.23 of 2008–09: Management of the Collins-class Operations Sustainment
SEA 1448 Phase 2A ANZAC Anti-Ship Missile Defence	449.0	Budget transfers/Budgetary adjustments	Transfer to Phase 2B and Defence Support Group	2004–05, 2005–06 and 2006–07	(159.9)	ANAO Report No.57 of 2010–11: Acceptance into Service of Navy Capability Performance audit currently underway: Anzac class frigates - sustainment
LAND 75 Phase 4 Battle Management System	319.0	Real Cost Increase	Design effort from previous phases	2014–15	8.5	N/A
JP 2048 Phase 3 Amphibious Watercraft Replacement	235.7	Budget transfer	Correction to transfer price	2013–14	(7.7)	ANAO Report No.9 of 2015–16: Test and Evaluation of Major Defence Equipment Acquisitions (paragraph 4.68)
Total	**34,107.3**				**16,887.8**	

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, HATS, and Maritime Comms. For a definition of 'Real Variations' see page 408 in the 2017–18 MPR Guidelines in **Part 4** of this report.

Budget performance

2.17 The following figures and tables illustrate the budget performance for 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 2017–18 (see Figure 5, on page 47).

In-year budget variance analysis

2.18 Table 9, below, sets out the in-year budget variations for each project. Overall, the approved budget for the projects as at 30 June 2018 decreased by $263.5 million, or 0.5 per cent, compared to their approved budget as at 30 June 2017. This was driven by net real increases of $93.3 million, offset by exchange rate variation decreases of $356.6 million.

2.19 Real Variations[91] primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability and budgetary adjustments such as administrative savings decisions. In 2017–18, the four projects with more significant Real Variations were:

- CMATS — variation of $240.7 million reflecting approval for a Real Cost Increase to deliver the approved scope[92];
- MRH90 Helicopters — variation of -$87.4 million reflecting an administrative correction of errors in the project's budget;
- Growler — variation of -$27.0 million reflecting the project's contribution to a rebalancing of the Defence Integrated Investment Program; and
- Battle Comm. Sys. (Land) 2A — variation of -$25.6 million reflecting funds transferred to project LAND 200 Tranche 2 to offset in-year shortfalls against that project's capital provision.

2.20 Exchange rate variations result from projects' exposure to foreign currencies and movements in foreign exchange rates against the Australian dollar.[93] 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 2017–18 included:

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91 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 corrections resulting from foreign exchange or indexation accounting estimation errors; 'Real Cost Increases', attributed to any negotiated Foreign Military Sales or commercial contracts, where funds have been approved by government to increase the Project's budget; and 'Real Cost Decreases', attributed to any negotiated Foreign Military Sales or commercial contracts, where funds have been handed back to the Defence portfolio.

92 During 2017–18, $6.8 million was temporarily harvested from and returned to the project budget with no net impact on the budget approved at Second Pass.

93 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.

- Joint Strike Fighter — movement of -$492.4 million, or 3.1 per cent decrease in budget; and
- MRH90 Helicopters — movement of $124.7 million, or 3.3 per cent increase in budget.

Table 9: In-year (2017–18) budget variations by project

Project	Approved Budget 2016–17 $m	Approved Budget 2017–18 $m	In-year Exchange Variation $m	In-year Real Variation $m	Total Variance $m	Total Variance (per cent)
Joint Strike Fighter [1]	16,004.9	15,504.0	(492.4)	(8.4)	(500.9)	(3.1)
AWD Ships	9090.1	9089.3	(0.8)	-	(0.8)	0.0
P-8A Poseidon [1]	5262.5	5212.0	(51.4)	1.0	(50.5)	(1.0)
MRH90 Helicopters	3733.8	3771.1	124.7	(87.4)	37.3	1.0
Growler [1]	3495.0	3430.4	(37.5)	(27.0)	(64.6)	(1.8)
MH-60R Seahawk [1]	3462.5	3430.3	(32.1)	-	(32.2)	(0.9)
Overlander Medium/Heavy	3363.5	3428.9	65.4	-	65.4	1.9
LHD Ships	3091.9	3091.7	(0.2)	-	(0.2)	0.0
Hawkei [1]	1951.1	1952.0	0.7	-	0.9	0.0
Battlefield Airlifter	1406.7	1433.3	26.6	-	26.6	1.9
Repl Replenishment Ships	-	1066.8	(6.9)	-	(6.9)	(0.6)
CMATS	730.7	974.2	2.8	240.7	243.5	33.3
Battle Comm. Sys. (Land) 2B	-	920.1	4.4	-	4.4	0.5
Additional MRTT [1]	855.5	887.8	32.2	-	32.3	3.8
ANZAC ASMD 2B [1]	678.6	678.7	-	-	0.1	0.0
Pacific Patrol Boat Repl	-	501.2	(3.3)	-	(3.3)	(0.7)
HATS	474.2	481.5	7.3	-	7.3	1.5
Collins RCS [1]	450.4	450.5	-	-	0.1	0.0
Battle Comm. Sys. (Land) 2A	463.3	438.0	0.3	(25.6)	(25.3)	(5.5)
Maritime Comms	432.1	437.7	5.6	-	5.6	1.3
Hw Torpedo [1]	428.0	427.6	(0.3)	-	(0.4)	(0.1)
UHF SATCOM [1]	420.5	419.9	(0.5)	-	(0.6)	(0.1)
Collins R&S [1]	411.7	411.6	-	-	(0.1)	0.0
ANZAC ASMD 2A [1]	386.7	386.8	-	-	0.1	0.0
BMS	369.1	367.9	(1.2)	-	(1.2)	(0.3)
LHD Landing Craft [1]	236.8	236.7	-	-	(0.1)	0.0
Total	57,199.6	59,430.0	(356.6)	93.3	(263.5)	(0.5)

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

Source: ANAO analysis of the 2016–17 and 2017–18 PDSSs.

In-year forecast and actual expenditure

2.21 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 2017–18.[94] In total, actual expenditure for the 26 projects at 30 June 2018 was $4585.2 million. This is compared against an initial Portfolio Budget Statements (PBS) forecast expenditure of $5255.2 million, a mid-year Portfolio Additional Estimates Statements (PAES) forecast of $4793.4 million, and a final forecast of $4649.5 million (Final Plan, approved during May 2018). The main factors contributing to the variances were changes to delivery and payment schedules, and foreign exchange fluctuations.

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

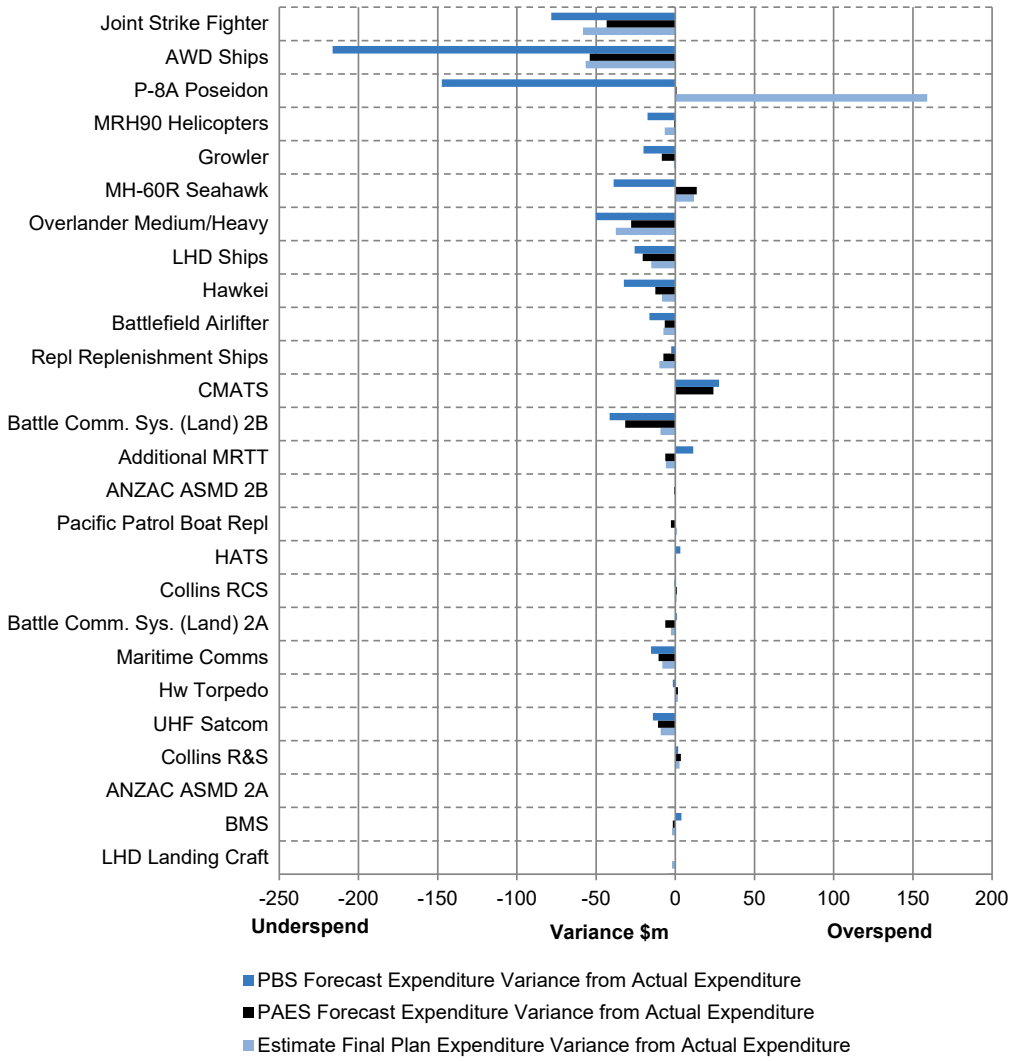
- Joint Strike Fighter (expenditure of $1069.9 million compared to $1148.2 million PBS, $1113.3 million PAES and $1128.1 million Final Plan estimates) — the variance is due to delays in invoicing of payments related to aircraft delivery, and timing and value variations against other contracts;
- AWD Ships (expenditure of $466.2 million compared to $682.6 million PBS, $520.2 million PAES and $522.8 million Final Plan estimates) — the variance is due to reduced disbursements against the AEGIS Foreign Military Sales case, and various other contract and procurement delays; and
- Overlander Medium/Heavy (expenditure of $659.7 million compared to $709.9 million PBS, $687.6 million PAES and $697.3 million Final Plan estimates) — the variance is due to a decision by Defence Finance Group to defer payments from 2017–18 to 2018–19 as a result of portfolio cash budget pressures.

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

- P-8A Poseidon (expenditure of $705.1 million compared to $852.5 million PBS, $704.3 million PAES and $546.0 million Final Plan estimates) — the variance is due to the acceleration of payments due to earlier aircraft delivery.

94 It should be noted that the PDSSs report expenditure on a cash basis, consistent with the budget figures, for the first time in 2017–18.

Figure 5: In-year (2017–18) projects' forecast expenditure performance compared to actual expenditure ($m)



Sources: ANAO analysis of the 2017–18 PDSSs and Defence Portfolio Budget Statements.

Schedule performance analysis

2.24 Defence data continues to show that schedule performance is a key issue in delivering and sustaining equipment.[95] Project schedule slippage can effectively introduce or exacerbate an existing capability gap, or require an extension to the planned withdrawal date for those platforms being replaced.[96]

Time Elapsed and Project Maturity

2.25 The proportion of lower risk MOTS acquisitions since 2005 has assisted in meeting schedule timelines across projects.[97] 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. 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.

2.26 Figure 6, below, sets out each project's Time Elapsed against Project Maturity.[98] Time Elapsed lags Project Maturity for 18 of 26 projects. Similar to the analysis of Budget Expended and Project Maturity, at paragraphs 2.10–2.13, 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 P-8A Poseidon, MH-60R Seahawk, Repl Replenishment Ships, and Pacific Patrol Boat Repl. The exception is Hawkei, where the lag in Time Elapsed against Project Maturity reflects the project's extensive schedule to FOC, required to deliver over 2000 vehicles and trailers.

2.27 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 three significant exceptions to this:

- Growler, where the EA-18G aircraft have been accepted and transferred to Australia, but project scope was increased in April 2017 to include a phased array radar threat emitter which is used in training;
- 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 vessels to operate with the helicopter; and
- HATS, where all helicopters have been delivered, but some items of training equipment are outstanding, and time is required to transfer all equipment to operational service.

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

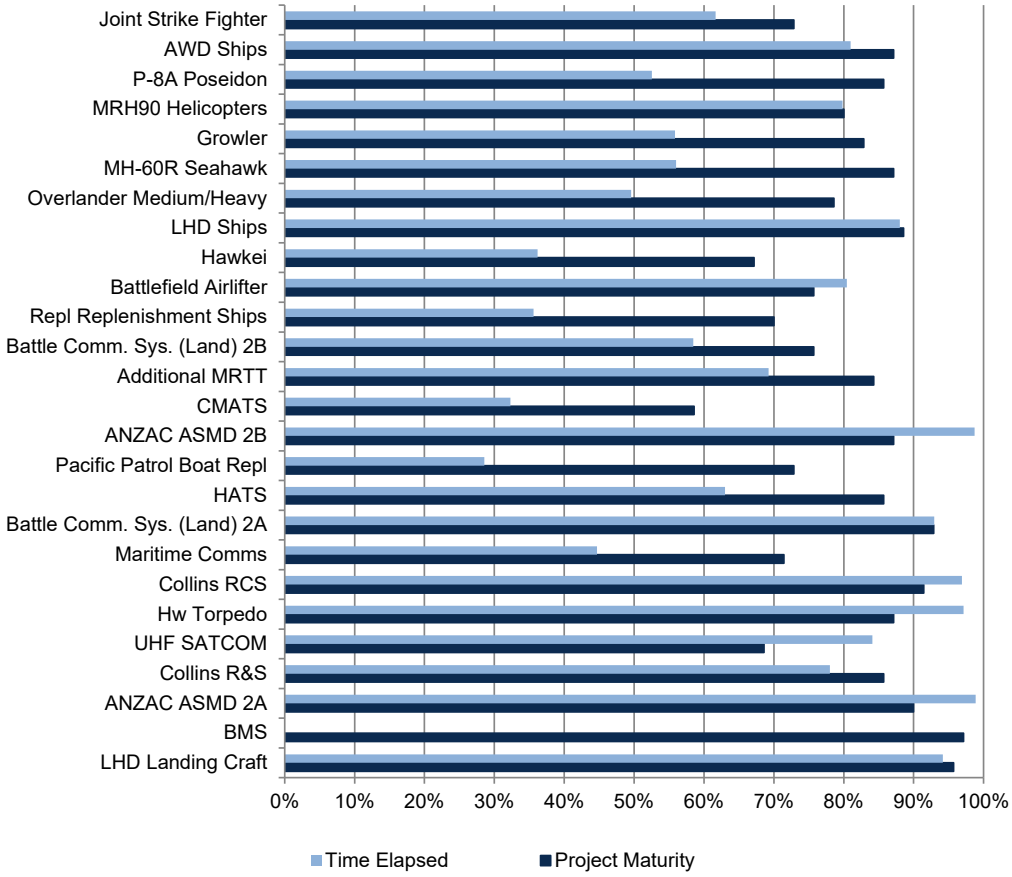
96 Extensions to planned withdrawal dates may involve additional costs relating to the maintenance and servicing of equipment.

97 See paragraphs 2.29 to 2.33 and Figures 7 and 8 on pp. 50–52, for more information.

98 Refer to footnote 16 for more detail.

2.28 For the 7 projects where Time Elapsed leads Project Maturity, there were no instances where this difference was significant (20 per cent or more).

Figure 6: Time Elapsed and Project Maturity



Note 1: BMS does not have IOC or FOC milestones. These were to be linked to Work Packages B-D which received government approval in September 2017 under LAND 200. Work Package A achieved FMR in December 2017. MAA closure did not occur in October 2018 as forecast.

Source: ANAO analysis of the 2017–18 PDSSs.

Schedule slippage and acquisition type by approval date

2.29 Figure 7, below, illustrates the total schedule slippage[99] 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 18 projects that have exited the review.

2.30 Following implementation of the recommendations of the 2003 Kinnaird review[100], in 2005 Defence began focusing on MOTS and Australianised MOTS acquisitions. Figures 7 and 8 show that the inclusion of MOTS acquisitions contributed, prima facie, to a reduction in schedule slippage in the Major Projects portfolio. MOTS projects currently in the MPR report an average of 24 months of slippage per project, while Australianised MOTS projects report an average of 41.2 months and Developmental projects report an average of 46.4 months. Decisions on whether to undertake developmental projects should be considered on a risk basis.[101] In this context, the consideration of risk includes not just the project specific attributes related to procurement, but also any compromises to the capabilities that would have been acquired through a developmental acquisition program.

2.31 The 2015 *First Principles Review* identified technical risk as the major cause of post Second Pass Approval schedule slippage, and also observed that schedule slippage causes cost escalation.[102] 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.

2.32 Figures 7 and 8 illustrate that older projects, which achieved Second Pass Approval prior to 2005, 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.

2.33 While it is not possible to predict the full extent of slippage a project will experience, this analysis has been provided to highlight changes since Kinnaird. Nine post Kinnaird and nine pre Kinnaird projects have exited the MPR. Total slippage of the nine post Kinnaird projects is 7.1 years. Total slippage of the nine pre Kinnaird projects is 51.2 years. Six of the nine post Kinnaird projects were MOTS acquisitions and all of the nine pre Kinnaird acquisitions were Australianised MOTS or Developmental.

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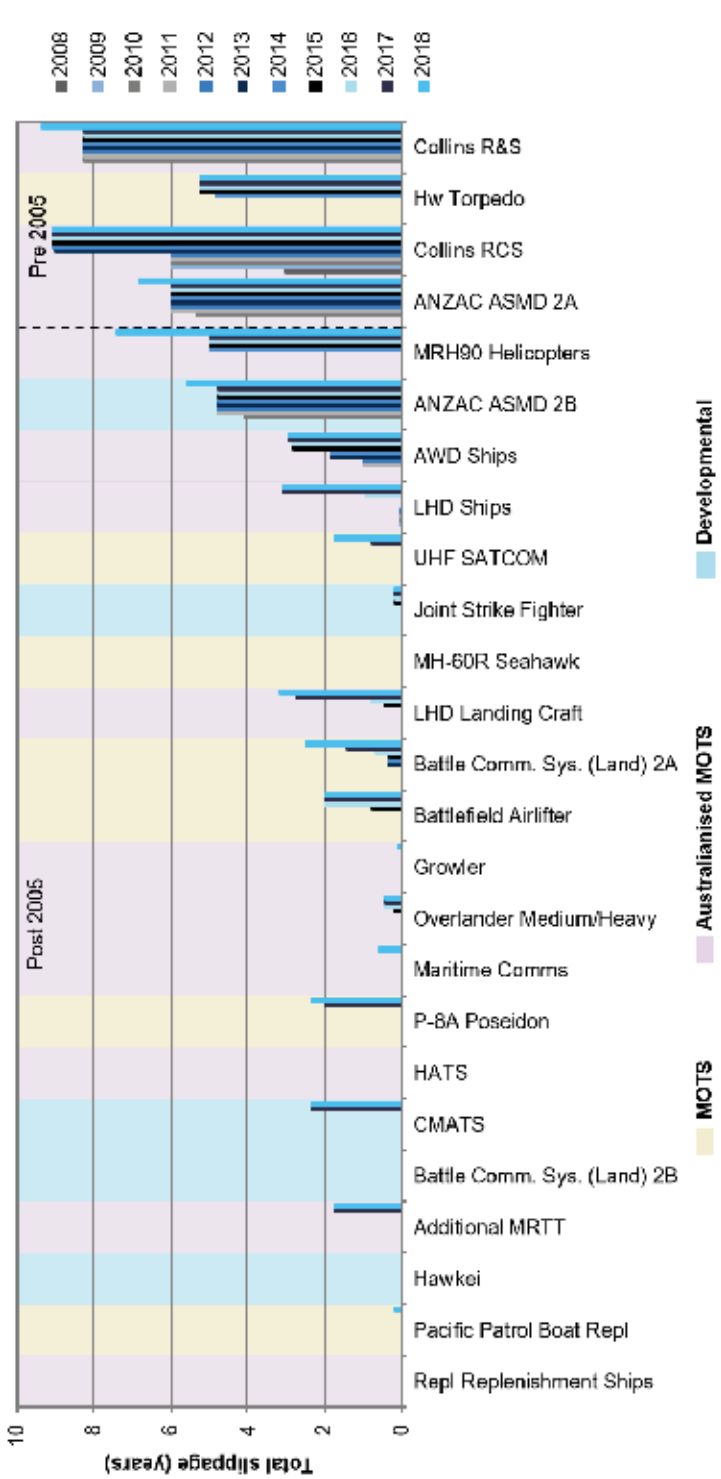
99 Refer to footnote 23.

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

101 Of the five projects added to the MPR in the last two years, three have been developmental (Hawkei, CMATS, and Battle Comm. Sys. (Land) 2B). Of these projects, CMATS has experienced 28 months of schedule slippage, while Hawkei and Battle Comm. Sys. (Land) 2B are yet to experience slippage.

102 D Peever, *First Principles Review: Creating One Defence,* Department of Defence, Canberra, 2015, p. 34 and p. 92.

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



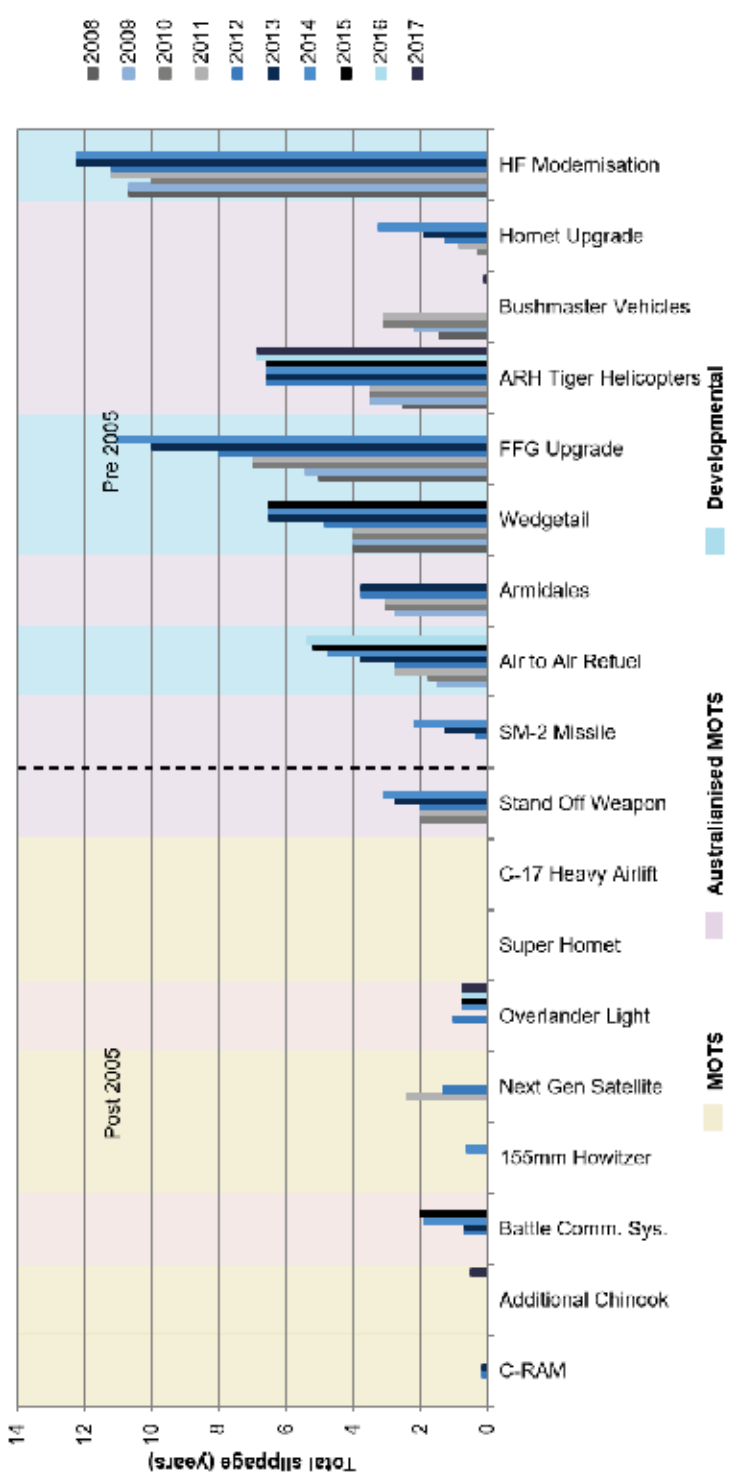
Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates.

Note 2: BMS does not have IOC or FOC milestones. These were to be linked to Work Packages B-D which received government approval in September 2017 under LAND 200. Work Package A achieved FMR in December 2017. MAA closure did not occur in October 2018 as forecast.

Note 3: The following projects have had additional scope approved following Second Pass Approval, which has caused slippage: P-8A Poseidon (24 months), Additional MRTT (21 months), and Collins R&S (13 months). The PDSSs indicate that the additional scope for these projects explains 58 months of the slippage reported here.

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.

Note 2: This does not include AIR 5376 Phase 3.2 Hornet Refurb, which exited in 2012, as this project did not introduce a new capability and did not have an FOC date.

Note 3: 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.

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

Schedule performance

2.34 The figures and tables that follow illustrate:

- the original and 30 June 2018 forecasts for achieving FOC;
- in-year schedule changes to achieving FOC;
- total schedule slippage across the Major Projects; and
- total slippage according to a project's Second Pass Approval date.

Original and 30 June 2018 Final Operational Capability forecasts

2.35 Figure 9, below, presents information on the selected projects' original and 30 June 2018 forecasts for achieving FOC. The total schedule slippage for the 26 Major Projects to date is 801 months compared to the initial prediction when approved by government. This represents a 32 per cent increase on the approved schedule. Of the 26 projects in the 2017–18 report, 20 have experienced schedule slippage.

2.36 Total schedule slippage across the Major Projects was 801 months in 2017–18. This is 8 months higher than the figure of 793 months reported in the 2016–17 report. The difference is mainly due to significant in-year slippage in MRH90 Helicopters (continuing technical issues requiring remediation prior to FOC), Battle Comm. Sys. (Land) 2A (administrative issues requiring resolution prior to FOC), UHF SATCOM (further delays in software development), ANZAC ASMD 2A and 2B (minor technical issues requiring resolution prior to FOC), and Collins R&S (introduction of additional project scope).[103] These projects, combined, added 87 months of the 104 months schedule slippage in 2017–18. Additionally, Pacific Patrol Boat Repl added two months of slippage to the total of 801 months; the slippage occurred in 2016–17 but the project was reported in the MPR for the first time in 2017–18. This slippage was offset by the exit of Bushmaster Vehicles, ARH Tiger Helicopters, Overlander Light and Additional Chinook, which reduced the accumulated slippage by 98 months.

2.37 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, the two Collins submarine projects and Hw Torpedo).[104]

2.38 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.[105] One project, MRH90 Helicopters[106], was originally misclassified as MOTS. The project was reclassified by Defence to Australianised MOTS (i.e. more developmental) subsequent to Second Pass Approval. This project has experienced extended schedule slippage.

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103 Refer to footnote 23.

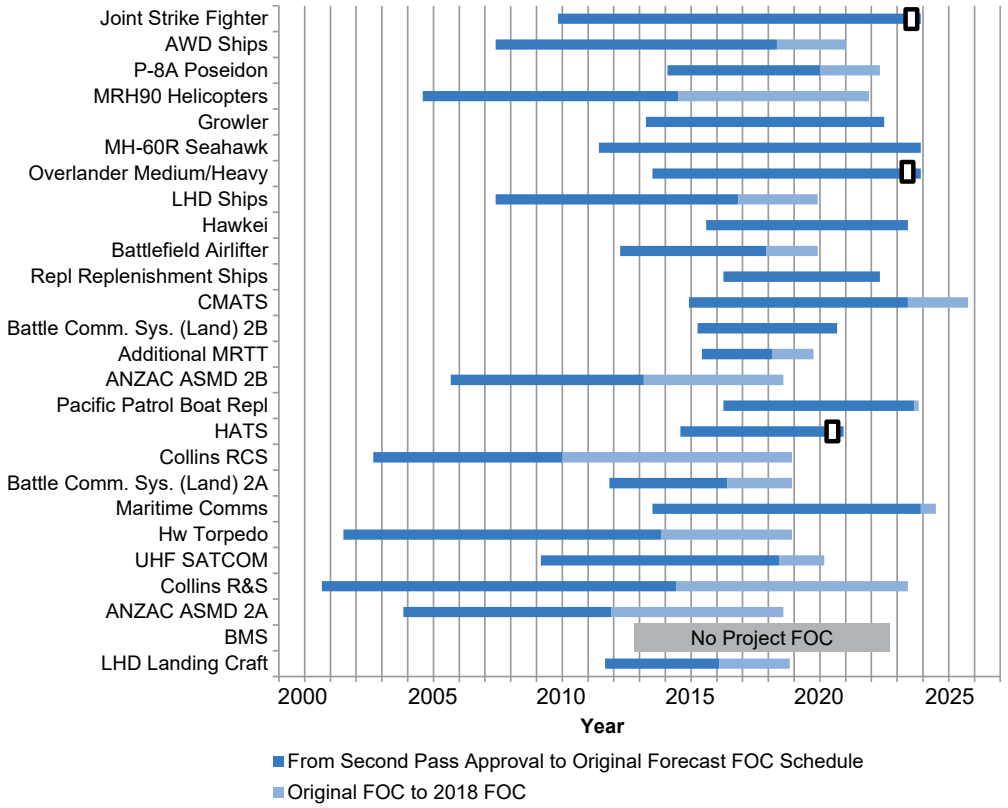
104 See the Collins RCS, Hw Torpedo and Collins R&S PDSSs in **Part 3** of this report.

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

106 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*.

2.39 Figure 9 further indicates that three projects (Joint Strike Fighter, Overlander Medium/Heavy, and HATS) are currently forecasting an FOC date ahead of that originally approved. However, Joint Strike Fighter and Overlander Medium/Heavy have previously forecast earlier dates than their 30 June 2018 forecasts, and have experienced slippage from those previous forecasts, partially offsetting their schedule recovery. Other projects with schedule recovery offset by slippage are AWD Ships, Growler, Additional MRTT, ANZAC ASMD 2A and 2B, Collins RCS, Hw Torpedo, Collins R&S, and LHD Landing Craft. In total, these projects have contributed 38 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 2018 FOC forecasts



Note 1: ▯ indicates that the forecast FOC date for the project at 30 June 2018 is earlier than the original FOC date.

Note 2: BMS does not have IOC or FOC milestones. These were to be linked to Work Packages B-D which received government approval in September 2017 under LAND 200. Work Package A achieved FMR in December 2017. MAA closure did not occur in October 2018 as forecast.

Source: ANAO analysis of the 2017–18 PDSSs.

In-year schedule performance

2.40 In 2017–18, there was schedule slippage of 104 months in the forecast achievement of FOC across the 26 Major Projects. In-year project performance, measured by slippage over the last 12 months, may not reflect the project trend. However, Figure 10 below, shows recovery of previously reported slippage for one project:

- Additional MRTT — the project currently expects to achieve FOC two months ahead of the 2017 forecast schedule, in October 2019.

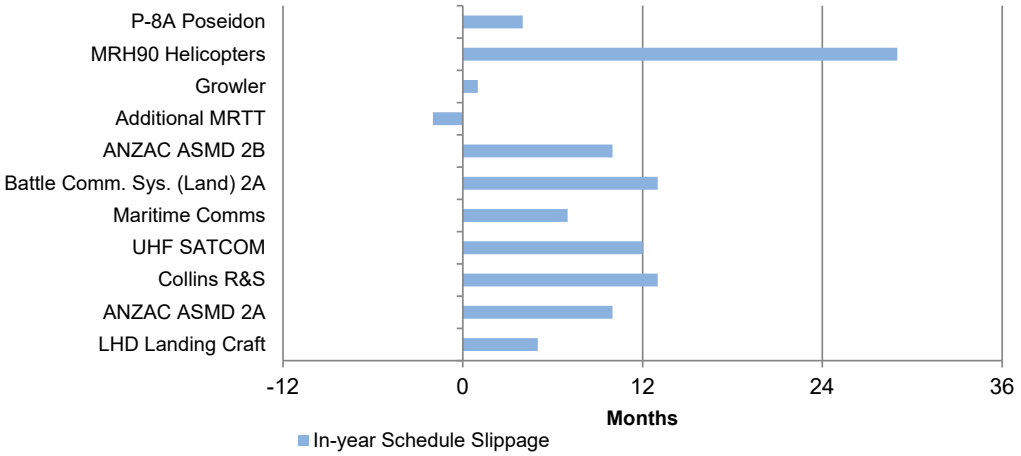
2.41 In-year schedule slippage occurred for the following ten projects[107] (the explanation provided, drawn from the 2017–18 PDSSs, may also include the reasons for prior slippage):

- P-8A Poseidon — the variance reflects minor rescheduling of the FOC milestone to accommodate the additional four aircraft;
- MRH90 Helicopters — the project has been affected by continuing technical and supportability issues;
- Growler — the variance reflects minor rescheduling of the FOC milestone;
- ANZAC ASMD 2B — delays have been caused by remediation of navigation radar support deficiencies;
- Battle Comm. Sys. (Land) 2A — administrative processes are still required to declare FOC;
- Maritime Comms — the project's schedule is dependent on the Royal Australian Navy's schedule of ship dockings;
- UHF SATCOM — the project has experienced further delay in software development;
- Collins R&S — additional scope has been introduced by the amalgamation of two related Collins projects;
- ANZAC ASMD 2A — FOC is dependent on implementation of the support equipment contract for the Infrared Search and Track capability; and
- LHD Landing Craft — final operational test and evaluation trials had not occurred at 30 June 2018.[108]

107 In the *Statement by the Secretary of Defence* in **Part 3** of this report, the Secretary also makes reference to additional information on achieved milestone dates for AWD Ships, P-8A Poseidon, Repl Replenishment Ships, ANZAC ASMD 2A and 2B, and Pacific Patrol Boat Repl.

108 See paragraphs 2.47 to 2.48 below, and the *Statement by the Secretary of Defence* and the LHD Landing Craft PDSS in **Part 3** of this report for more information on this project. The Secretary notes that 'the sea trials have been re-scheduled to occur during the second/third quarter 2019, during the annual amphibious exercise period where the necessary assets can be made available. Final Operational Capability declaration will occur after the sea trials later in 2019.'

Figure 10: In-year (2017–18) schedule changes to achieving FOC



Note: Defence's PDSSs indicate that 14 of the 26 Major Projects Report projects did not record changes to their Final Operational Capability dates this year.

Source: ANAO analysis of the 2017–18 PDSSs.

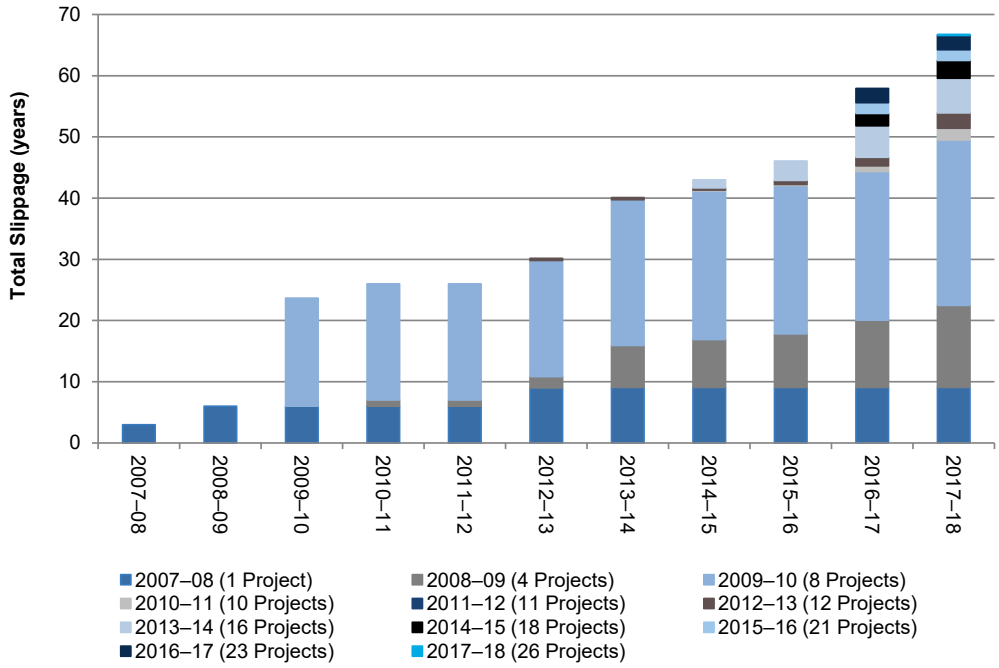
Longitudinal schedule performance

2.42 Figure 11, below, shows the accumulated schedule slippage over time of the Major Projects included in the MPR reports from 2007–08 to 2017–18.[109] Table 10 provides the details of the specific projects included in the analysis. The figure shows that 13.6 per cent (9.1 years or 109 months) of the total schedule slippage across the Major Projects covered in the 2017–18 report (66.8 years or 801 months) is made up of the slippage from the one remaining project (Collins RCS) reported in the 2007–08 Major Projects Report.

2.43 Further disaggregation according to a project's Second Pass Approval date in Table 11, on page 59, shows that 46 per cent (2016–17: 54 per cent) of the total schedule slippage across the 2017–18 Major Projects is made up of projects approved prior to July 2005.

109 Tables 4 and 5, on pages 14 and 15 respectively, report on the slippage for each project that has been in the MPR since 2007–08.

Figure 11: Longitudinal schedule slippage across years for projects in the 2017–18 MPR (in years)



Note: The total schedule slippage in 2017–18 across the 26 projects is 801 months. BMS does not have IOC or FOC milestones. These were to be linked to Work Packages B-D which received government approval in September 2017 under LAND 200. Work Package A achieved FMR in December 2017. MAA closure did not occur in October 2018 as forecast.

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

Table 10: Projects included in Figure 11 analysis by Major Projects Report

Project	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18
Joint Strike Fighter				✓	✓	✓	✓	✓	✓	✓	✓
AWD Ships		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
P-8A Poseidon								✓	✓	✓	✓
MRH90 Helicopters		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Growler							✓	✓	✓	✓	✓
MH-60R Seahawk					✓	✓	✓	✓	✓	✓	✓
Overlander Medium/Heavy							✓	✓	✓	✓	✓
LHD Ships		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hawkei										✓	✓
Battlefield Airlifter							✓	✓	✓	✓	✓
Repl Replenishment Ships											✓
CMATS										✓	✓
Battle Comm. Sys. (Land) 2B											✓
Additional MRTT									✓	✓	✓
ANZAC ASMD 2B			✓	✓	✓	✓	✓	✓	✓	✓	✓
Pacific Patrol Boat Repl											✓
HATS									✓	✓	✓
Collins RCS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Battle Comm. Sys. (Land) 2A						✓	✓	✓	✓	✓	✓
Maritime Comms								✓	✓	✓	✓
Hw Torpedo			✓	✓	✓	✓	✓	✓	✓	✓	✓
UHF SATCOM				✓	✓	✓	✓	✓	✓	✓	✓
Collins R&S			✓	✓	✓	✓	✓	✓	✓	✓	✓
ANZAC ASMD 2A			✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS									✓	✓	✓
LHD Landing Craft							✓	✓	✓	✓	✓

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

Table 11: Project slippage by project approval

Project	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/18 FOC date	No. of months slippage between Original FOC and 30/6/18 FOC date
Projects Approved pre July 2005			
Collins RCS	88	195	109 [1]
Hw Torpedo	148	209	63 [1]
Collins R&S	165	273	112 [1]
ANZAC ASMD 2A	97	177	82 [1]
Sub Total – Projects Approved pre July 2005	**498**	**854**	**366**
Percentage of Total – Projects Approved pre July 2005	**20%**	**26%**	**46%**
Projects Approved post July 2005			
Joint Strike Fighter	169	167	2 [1]
AWD Ships	131	163	35 [1]
P-8A Poseidon	71	99	28
MRH90 Helicopters	119	208	89
Growler	111	111	1 [1]
MH-60R Seahawk	150	150	0
Overlander Medium/Heavy	125	119	5 [1]
LHD Ships	113	150	37
Hawkei	94	94	0
Battlefield Airlifter	68	92	24
Repl Replenishment Ships	73	73	0
CMATS	102	130	28
Battle Comm. Sys. (Land) 2B	65	65	0
Additional MRTT	33	52	21 [1]
ANZAC ASMD 2B	90	155	67 [1]
Pacific Patrol Boat Repl	89	91	2
HATS	76	73	0 [1]
Battle Comm. Sys. (Land) 2A	55	85	30
Maritime Comms	125	132	7
UHF SATCOM	111	132	21
BMS [2]	N/A	N/A	N/A
LHD Landing Craft	53	86	38 [1]
Sub Total – Projects Approved post July 2005	**2023**	**2427**	**435** [1]
Percentage of Total – Projects Approved post July 2005	**80%**	**74%**	**54%**
Total – All Projects With Slippage	**2521**	**3281**	**801**

Note 1: These figures do not add horizontally due to the exclusion of schedule reductions over the life of the project. Refer to footnote 23.

Note 2: BMS does not have IOC or FOC milestones. These were to be linked to Work Packages B-D which received government approval in September 2017 under LAND 200. Work Package A achieved FMR in December 2017. MAA closure did not occur in October 2018 as forecast.

Source: ANAO analysis of the 2017–18 PDSSs.

Capability performance analysis

2.44 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.[110] 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 industry[111] — and undertaking designated operations.

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

2.46 Since the 2009–10 MPR, capability reporting[112] 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). As the ANAO has previously noted, this data involves 'making certain assumptions in forecasting achievements and is therefore subjective in approach …'.[113]

2.47 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 still requiring trials prior to declaration of capability achievement; this capability was assessed as 'under threat, considered manageable'.

2.48 However, these trials have been delayed on multiple occasions since 30 June 2016, as reported to the JCPAA by Defence at public hearings.[114] The 2017–18 PDSS continues to report a 1 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. To achieve 100 per cent of capability, the heavy load transportation trials must be successfully completed, or heavy load transport must be removed from the scope of the project's requirements.

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110 Department of Defence, '*Interim Capability Life Cycle Manual*', 2017, p. 85.

111 Department of Defence, *'Interim Capability Life Cycle Manual*', 2017, p. 13.

112 As per the 2017–18 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 2017–18 MPR Guidelines also note that the MPR may report on associated sustainment activities (where applicable).

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

114 Source 1: 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.

Source 2: 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.

Source 3: Commonwealth, *Public Hearing*, Joint Committee of Public Accounts and Audit, 23 March 2018, CDRE S Hughes, Deputy General, Littoral, Department of Defence, p. 13.

2.49 Over time, the JCPAA has sought the use of a more robust measure of capability performance.[115]

2.50 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.'[116]

2.51 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
> - 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.[117]

2.52 Defence advised the ANAO in November 2018 that partial progress has been made on the schedule baseline validation activity to support the proposal for a new approach to measuring capability delivery. The ANAO notes that a measurement of schedule milestones will not necessarily reflect a measurement of capability delivered.

2.53 In September 2018, the JCPAA noted that 'Materiel Capability Delivery Performance charts continue to be ambiguous in displaying actual current capability levels.'[118]

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115 Source 1: 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.
Source 2: 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.

116 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.

117 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.

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

Modified method of capability reporting

2.54 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.

2.55 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.

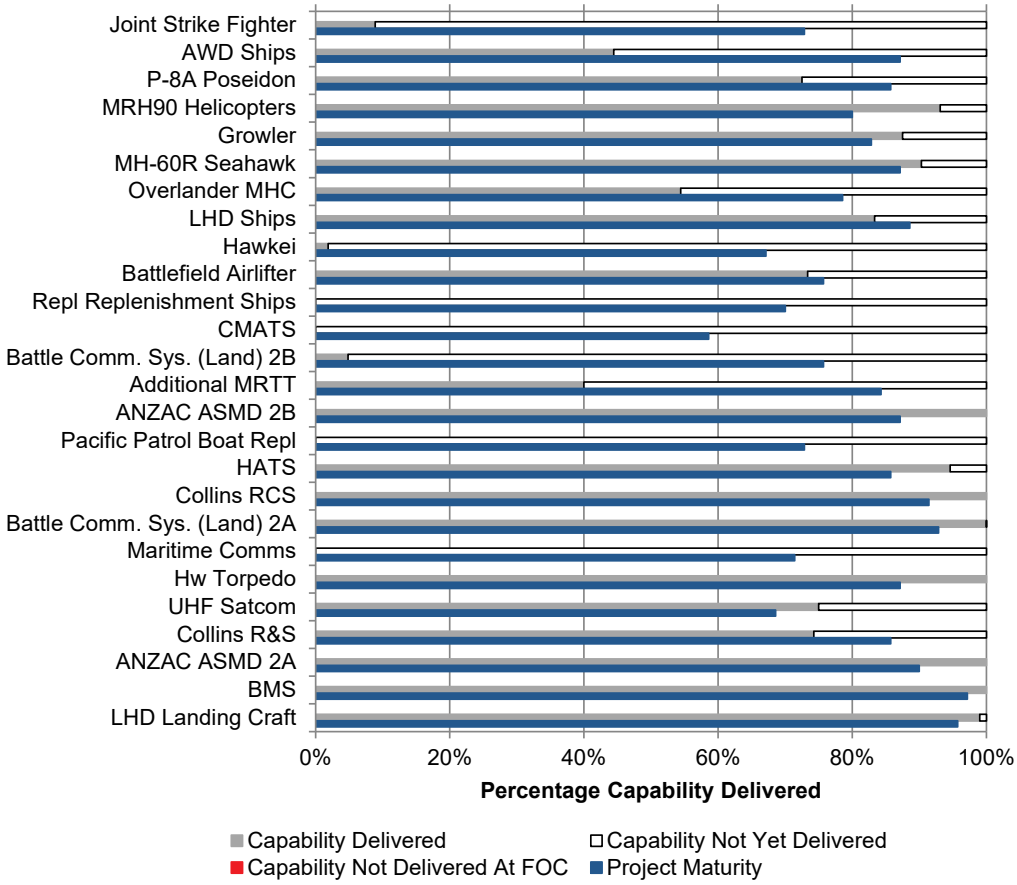
Capability Delivery Progress and Project Maturity

2.56 Figure 12, below, sets out each project's Capability Delivery Progress against Project Maturity.[119] It shows that Capability Delivery Progress lags Project Maturity for the majority of projects (15 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.

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

119 Refer to footnote 87 for more detail.

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



Source: ANAO analysis of the 2017–18 PDSSs.

2.58 As noted in paragraph 2.10, Defence's project maturity framework attributes approximately 50 per cent of total project maturity at Second Pass Approval.[120] These differences further indicate that 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.

2.59 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 indicates that it would be worthwhile for Defence to undertake additional work to track project

120 Refer to footnote 88 for more detail.

progress. In respect of the four projects that show no capability delivery at 30 June 2018, progress is as follows:

- Repl Replenishment Ships — this project had commenced construction of both ships, with 35 per cent of blocks erected for the first ship;
- CMATS — this project was in early stages of procurement, and was progressing through early design processes following signing of the primary acquisition contract;
- Pacific Patrol Boat Repl — this project had commenced construction of four vessels, with the first vessel launched but not yet accepted into service;
- Maritime Comms — this project was progressing through design reviews prior to commencing ship installations.

2.60 Further, Figure 12 indicates that:

- 14 projects are still to deliver part of their capability;
- seven projects, HATS, ANZAC ASMD 2A and 2B, Collins RCS, Battle Comm. Sys. (Land) 2A, Hw Torpedo, 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 FMR/FOC; and
- one project, BMS, has delivered all of the required capability.

Part 2. Defence Major Projects Report

Secretary's Foreword

I am pleased to present the 2017-18 Major Projects Report, which provides an update on 26 major Defence capability acquisition projects.

The 11th annual Major Projects Report provides transparency on the progress of some of Defence's most expensive and complex acquisition projects. It is a valuable tool to inform the Parliament and Australian public on Defence capability and related expenditure.

Throughout the 2017-18 financial year, Defence has made further progress on our reform agenda. Reform takes time, commitment and hard work. As a testament to this commitment and hard work, Defence has now implemented the majority of the recommendations from the First Principles Review. The Defence senior leadership is committed to One Defence — a more unified and integrated organisation that can deliver and sustain capability, and maintain the Australian Defence Force's capability edge.

Defence has achieved an increased number of project approvals under a tailored, risk-based approach to capability development. Our organisation's ability to continue to deliver capability and embrace reform is an indication of the improved culture of collaboration – within Defence, with central agency partners and with industry.

At 30 June 2018, Capability and Acquisition Sustainment Group was managing 198 major and minor capital equipment acquisition projects, with a total value of $103.5 billion. The major capability projects within the 2017-18 Major Projects Report have a combined total approved budget of $59.4 billion, and a total in-year budget of $4.6 billion.

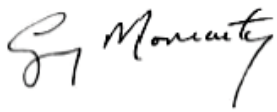
These are some of the most complex projects being undertaken, both in Australia and across the world. While most of these projects are performing well, this report identifies that a small number of specific projects have required an increased level of management and support through the Projects of Interest and Projects of Concern frameworks. These frameworks provide an escalation mechanism for increased management of capabilities under development for the Australian Defence Force. A project may be identified as a Project of Interest when scope, schedule or cost variances warrant heightened senior management attention.

The following significant project achievements, which supported the delivery of important capability for the Australian Government, the Australian Defence Force and regional partners, are particularly noteworthy:

- Joint Strike Fighter – Australia has now accepted all eight Lot 10 aircraft planned for delivery in 2018. The first two Joint Strike Fighter aircraft arrived at RAAF Base Williamtown on 10 December 2018.
- Air Warfare Destroyer (AWD) - The second AWD was commissioned as HMAS *Brisbane* on 27 October 2018, and the third AWD, NUSHIP *Sydney*, was launched in May 2018.
- Pacific Patrol Boat Replacement – the first of Austal's 21 Guardian Class Patrol Boat was handed over to Papua New Guinea on 30 November 2018.
- Three EA-18G Growlers and the C-27J Spartan successfully participated in Exercise *Pitch Black* between 27 July and 17 August 2018 in Darwin.

The Vice Chief of the Defence Force, Chiefs of the Navy, Army and Air Force, Chief of Joint Capabilities, Chief Finance Officer, Chief Information Officer, and the 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 report.



Greg Moriarty

Secretary

Department of Defence

11 December 2018

Overview

Defence has continued to deliver the Integrated Investment Program through 2017–18, with the Government approving a total of $21 billion of capital investment across major equipment, facilities, infrastructure, information and communications technology, and science and technology.

The Capability Life Cycle including Smart Buyer processes is maturing and there is greater integration of the interdependencies across the Integrated Investment Program. Permanent participation in the Investment Committee by the Department of the Prime Minister and Cabinet and the Department of Finance has strengthened Defence's capability submissions to Government.

In 2017-18 Defence managed 198 active major and minor capital equipment projects worth $103.5 billion with a 2017–18 budget of $6.9 billion. During this period Defence also managed 111 active Materiel Sustainment Agreement Product Schedules with an annual budget of $5.6 billion. Twenty-five Major Acquisition Projects were closed in this period, with a total budget of 0.9 per cent less than that approved by the Government.

In this context, the Major Projects Report outlines 26 projects with a total budget of $59.4 billion and a total in-year budget of $4.6 billion. This accounts for 57.3 percent of the projects by total value.

Key achievements

In 2017-18 the 26 reported major projects and their contractors have worked together to progress delivery of important capability to the Australian Defence Force. There have been a number of key achievements for many projects including:

- The first additional KC-30A Multi-Role Tanker Transport aircraft, and initial spares and support equipment were delivered achieving Initial Operational Capability in April 2018.

- The Maritime Patrol and Response aircraft system including four P-8A aircraft, trained crews, Mobile Tactical Operational Centre, Mission Support System team, spares, and Ground Support Equipment achieved Initial Operational Capability one month ahead of schedule in January 2018.
- The Helicopter Aircrew Training System commenced Pilot and Aircrewman Trial Courses on schedule in January 2018, and the Aviation Warfare Officer Trial Course commenced on schedule in February 2018.
- Airservices Australia, under arrangements with Defence, signed both acquisition and support contracts with Thales in February 2018 for the Civil Military Air Management System.
- The submarine legacy projects have been combined into Collins Class Submarine Reliability and Sustainability project to create administrative efficiencies.

Entry and exit to the 2017-18 Major Projects Report

Of the 26 projects included in this report, 23 projects have carried over from last year's report.

Three projects are new inclusions:

- JP 2072 Phase 2B Battlespace Communications System
- SEA 3036 Phase 1 Pacific Patrol Boat Replacement
- SEA 1654 Phase 3 Maritime Operational Support Capability

Three projects were removed from the report having achieved Final Operating Capability:

- LAND 116 Phase 3 Bushmaster Protected Mobility Vehicle
- LAND 121 Phase 3A Overlander Vehicles (Light)
- AIR 9000 Phase 5C Additional Medium Lift Helicopters (Additional Chinooks)

AIR 87 Phase 2 Armed Reconnaissance Helicopter was also removed from the 2017-18 Major Projects Report, as it achieved Final Operating Capability with caveats. All caveats have now closed, and details of the status of each caveat can be found in the Secretary's Statement on pp. 135–137.

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 2018.

For each project that has been removed from the report, the lessons learned 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. Further, based on project manager assurance sign-off processes, Defence has ongoing confidence on whether individual projects will deliver the remaining intended scope within their approved project budgets.

When considering and approving budgets, the Government takes 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 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 across reports, Defence has reported its 2017-18 capital projects on a cash basis in the Major Projects Report. Defence manages all of its major projects as part of its Integrated Investment Program which represents a portfolio of projects across all of Defence's acquisition and sustainment activities. Adopting this approach allows for funding pressures and savings to be better managed across the entire IIP.

The total in-year budget (2017-18) for all the projects listed is $4.6 billion and the total approved budget is $59.4 billion. Table 1 lists the 26 projects by total approved budget from highest to lowest.

These projects represent 13.1 per cent by number, of the projects in the Defence capital investment program and 57.4 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 Column B) includes activities such as follow-on Second Pass approvals, tranched or rolling approval processes that has been agreed by Government, or where projects have merged or transferred cost or scope to realise more efficient project management practices.

In some instances budget variation is due to unplanned cost and/or scope variation. Historically, Real Cost Increases to the project budgets are few.

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.

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 2017-18 MPR Projects by Total Approved Budget*

Project Number	Project Name	Project Name Abbreviation	2017-18 In-Year Budget $m	Total Approved Project Budget $m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter	1128.1	15504.0
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships	522.8	9089.3
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System (Boeing P-8A Poseidon)	P-8A Poseidon	546.0	5212.0
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	108.4	3771.0
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	206.1	3430.4
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk	243.6	3430.3
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	697.3	3428.9
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships	38.3	3091.7
LAND 121 Phase 4	Protected Mobility Vehicle - Light (PMV-L)	Hawkei	198.8	1952.0
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	69.2	1433.3
SEA 1654 Phase 3	Maritime Operational Support Capability	MOSC	277.0	1066.8
AIR 5431 Phase 3	Civil Military Air Management System	CMATS	94.4	974.2
LAND 2072 Phase 2B	Battlespace Communications System	Battle Comms Sys Ph2B	145.6	920.1
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	149.4	887.8
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	Anzac ASMD 2B	5.5	678.7
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	PPB-R	27.7	501.2
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS	93.4	481.5
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land)	9.0	438.0
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	17.5	437.7
SEA 1439 Phase 4A	Collins Replacement Combat System	Collins RCS	1.0	450.5
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo	8.8	427.6
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	17.4	419.9
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	6.9	411.7
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	Anzac ASMD 2A	4.7	386.8
LAND 75 Phase 4	Battle Management System	BMS	30.6	367.9
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	2.0	236.7
Total			**4648.6**	**59430.0**

Table 2A - Project Total Budget Status

Project Number	Project	(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	((g+h)/a)) Net Variation %	(a+b+c+d+e+f+g+h) Current Budget $m
AIR 6000 Phase 2A/2B	Joint Strike Fighter	2751.6	10515.4	351.0	1897.3	0.0	-8.4	-2.9	0.0	-0.1%	15504.0
SEA 4000 Phase 3	AWD Ships	7207.4	0.0	1173.2	-380.9	1199.5	-109.9	0.0	0.0	0.0%	9089.3
AIR 7000 Phase 2B	P-8A Poseidon	3577.7	1296.4	20.5	317.3	0.0	0.0	0.0	0.0	0.0%	5212.0
AIR 9000 Phase 2/4/6	MRH90 Helicopters	957.2	2565.6	679.8	-136.6	31.5	-239.0	-87.4	0.0	-9.1%	3771.1
AIR 5349 Phase 3	Growler	1155.3	1789.4	0.0	880.6	0.0	0.0	-394.9	0.0	-34.2%	3430.4
AIR 9000 Phase 8	MH-60R Seahawk	3029.6	0.0	0.1	439.8	0.0	0.0	-39.2	0.0	-1.3%	3430.3
LAND 121 Phase 3B	Overlander Medium/Heavy	2549.2	735.5	0.0	144.2	0.0	0.0	0.0	0.0	0.0%	3428.9
JP 2048 Phase 4A/4B	LHD Ships	2958.3	0.0	428.4	-304.3	0.0	9.3	0.0	0.0	0.0%	3091.7
LAND 121 Phase 4	Hawkei	1945.0	0.0	0.4	6.6	0.0	0.0	0.0	0.0	0.0%	1952.0
AIR 8000 Phase 2	Battlefield Airlifter	1156.5	0.0	0.0	276.8	0.0	0.0	0.0	0.0	0.0%	1433.3
SEA 1654 Phase 3	MOSC	1004.6	0.0	0.0	-6.9	0.0	69.1	0.0	0.0	0.0%	1066.8
AIR 5431 Phase 3	CMATS	731.4	0.0	0.0	2.1	247.5	0.0	-6.8	0.0	-0.9%	974.2
LAND 2072 Phase 2B	Battle Comms Sys Ph2B	915.7	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0%	920.1
AIR 7403 Phase 3	Additional MRTT	681.9	187.7	0.0	23.0	0.0	0.0	-4.8	0.0	-0.7%	887.8
SEA 1448 Phase 2B	Anzac ASMD 2B	248.8	155.4	76.1	-9.6	214.7	-6.7	0.0	0.0	0.0%	678.7
SEA 3036 Phase 1	PPB-R	504.5	0.0	0.0	-3.3	0.0	0.0	0.0	0.0	0.0%	501.2
JP 9000 Phase 7	HATS	483.8	0.0	2.4	-4.7	0.0	0.0	0.0	0.0	0.0%	481.5
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	436.4	0.0	0.0	27.2	0.0	-25.6	0.0	0.0	0.0%	438.0
SEA 1442 Phase 4	Maritime Comms	385.7	0.0	0.0	52.0	0.0	0.0	0.0	0.0	0.0%	437.7
SEA 1439 Phase 4A	Collins RCS	455.3	0.0	56.5	-59.6	0.0	-0.9	-0.8	0.0	-0.2%	450.5
SEA 1429 Phase 2	Hw Torpedo	238.1	213.3	99.4	-124.0	0.0	1.0	-0.2	0.0	-0.1%	427.6
JP 2008 Phase 5A	UHF SATCOM	460.9	0.0	18.0	-41.0	0.0	0.0	0.0	-18.0	-3.9%	419.9
SEA 1439 Phase 3	Collins R&S	72.0	271.2	74.4	-6.0	0.0	0.0	-0.8	0.0	-1.1%	411.7
SEA 1448 Phase 2A	Anzac ASMD 2A	449.0	0.0	101.3	-3.6	0.0	-159.8	-0.1	0.0	0.0%	386.8
LAND 75 Phase 4	BMS	319.0	8.5	0.0	40.4	0.0	0.0	0.0	0.0	0.0%	367.9
JP 2048 Phase 3	LHD Landing Craft	235.7	0.0	0.1	8.6	0.0	-7.7	0.0	0.0	0.0%	236.7
	Total	**34910.6**	**17739.2**	**3081.6**	**3039.8**	**1693.2**	**-478.6**	**-537.9**	**-18**	**-51.6%**	**59430.0**

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	1296.4	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).
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.
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 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 1429 Phase 2	Hw Torpedo	213.3	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.
SEA 1439 Phase 3	Collins R&S	271.2	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.
LAND 75 Phase 4	BMS	8.5	This was a programmatic decision to fund the M113AS4 design effort, previously under LAND 75 Phase 3.4.
Total		**17739.2**	

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

Overall, there was a total in-year budget underspend of $670.0 million against the 2017-18 Portfolio Budget Statement and $64.3 million underspend against the 2017-18 Final Plan.

Of the 26 projects, six overspent against the final plan, 17 projects had underspends, and three delivered to their budget. 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 variation explanations for each project can be found within Section 2.2A – In-year Budget Estimate Variance of the project data summary sheets.

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	1148.2	1,113.3	1,128.1	1,069.9	-78.3	-58.2	-5.2%
SEA 4000 Phase 3	AWD Ships	682.6	520.2	522.8	466.3	-216.3	-56.5	-10.8%
AIR 7000 Phase 2B	P-8A Poseidon	852.6	704.3	546.0	705.1	-147.4	159.1	29.1%
AIR 9000 Phase 2/4/6	MRH90 Helicopters	119.2	102.4	108.4	101.7	-17.5	-6.7	-6.2%
AIR 5349 Phase 3	Growler	225.3	213.7	206.1	205.2	-20.1	-0.9	-0.4%
AIR 9000 Phase 8	MH-60R Seahawk	294.3	241.8	243.6	255.4	-38.9	11.8	4.8%
LAND 121 Phase 3B	Overlander Medium/Heavy	709.9	687.6	697.3	659.7	-50.2	-37.6	-5.4%
JP 2048 Phase 4A/4B	LHD Ships	48.8	43.8	38.3	23.2	-25.6	-15.1	-39.4%
LAND 121 Phase 4	Hawkei	222.8	203.0	198.8	190.4	-32.4	-8.4	-4.2%
AIR 8000 Phase 2	Battlefield Airlifter	77.6	68.4	69.2	61.7	-16.3	-7.5	-10.8%
SEA 1654 Phase 3	Maritime Operational Support Capability	269.6	274.5	277.0	267.0	-2.6	-10.0	-3.6%
LAND 2072 Phase 2B	Battlespace Communications System	177.8	167.9	145.6	136.3	-41.5	-9.3	-6.4%
AIR 7403 Phase 3	Additional MRTT	132.2	149.9	149.4	143.5	11.3	-5.9	-3.9%
AIR 5431 Phase 3	CMATS	66.4	70.0	94.4	94.1	27.7	-0.3	-0.3%
SEA 1448 Phase 2B	Anzac ASMD 2B	5.7	6.3	5.5	5.5	-0.2	0.0	0.0%
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	28.9	31.4	27.7	28.7	-0.2	1.0	3.6%
JP 9000 Phase 7	HATS	89.8	93.2	93.4	93.0	3.2	-0.4	-0.4%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	5.2	12.5	9.0	6.2	1.0	-2.8	-31.1%
SEA 1442 Phase 4	Maritime Comms	24.6	19.9	17.5	9.3	-15.3	-8.2	-46.9%
SEA 1439 Phase 4A	Collins RCS	2.4	0.8	1.0	1.8	-0.6	0.8	80.0%
SEA 1429 Phase 2	Hw Torpedo	12.0	8.7	8.8	10.4	-1.6	1.6	18.2%
JP 2008 Phase 5A	UHF SATCOM	22.3	19.1	17.4	8.2	-14.1	-9.2	-52.9%
SEA 1439 Phase 3	Collins R&S	7.6	6.0	6.9	9.5	1.9	2.6	37.7%
SEA 1448 Phase 2A	Anzac ASMD 2A	4.5	4.7	4.7	4.7	0.2	0.0	0.0%
LAND 75 Phase 4	Battle Management System	24.6	30.0	30.6	28.6	4.0	-2.2	-6.5%
JP 2048 Phase 3	LHD Landing Craft	0.0	0.0	2.0	0.0	0.0	-2.0	0.0%
	Total	**5,254.9**	**4,793.4**	**4,649.5**	**4,585.4**	**-669.5**	**-64.3**	**-1.4%**

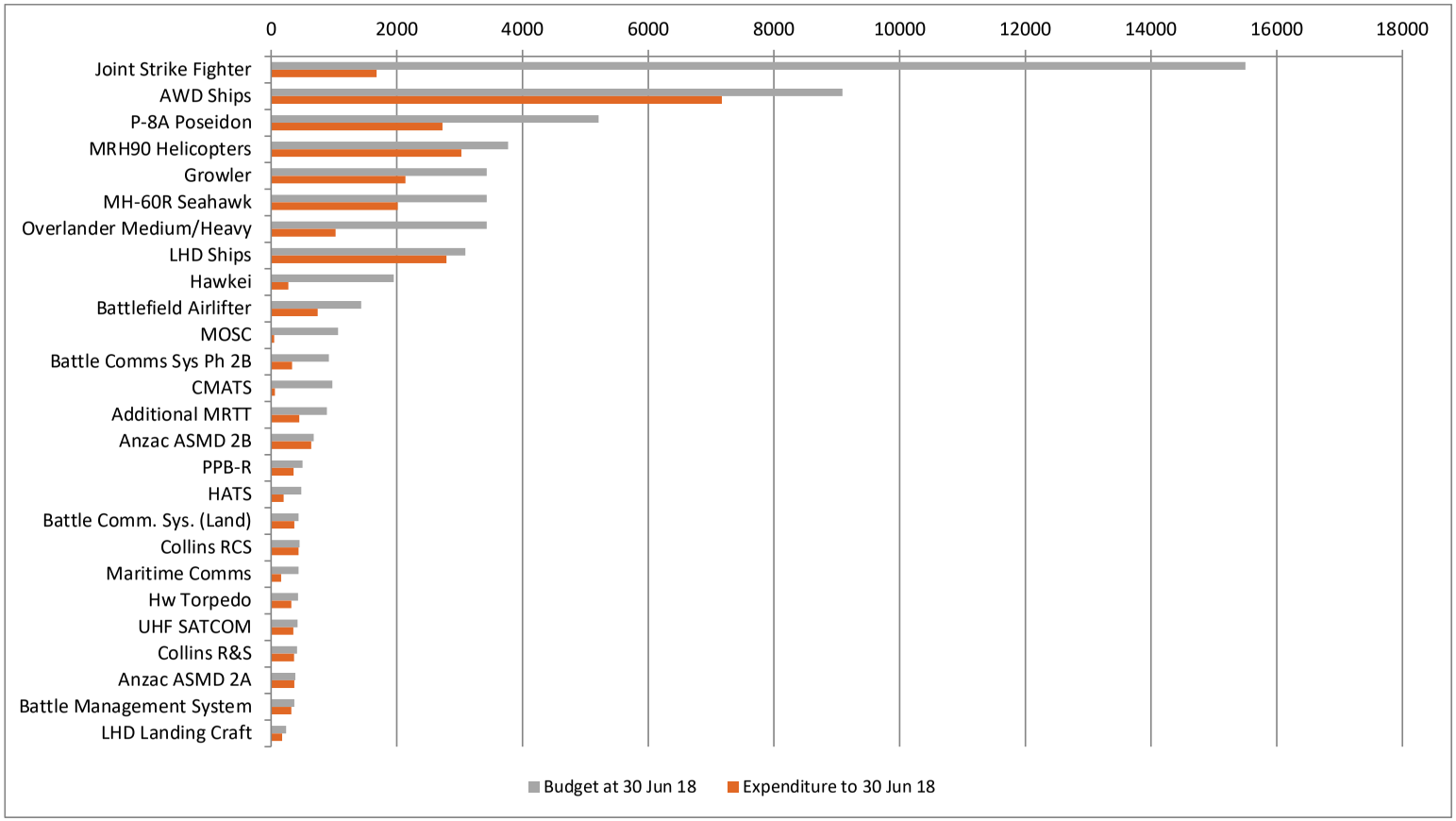
Project Progress

One indicator of project progress is comparison of the total project budget and expenditure as shown in Figure 1.

However 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.

This figure also shows that 18 projects have expended more than half their total budget, and a number are at the final stages of project delivery.

Figure 1: Comparison of total MPR project budget and expenditure as at June 2018 ($m)



Contingency Management

Budgets for major Defence capital projects are approved by Government with a contingency provision that varies between projects depending on the complexity and risk of the acquisition.

Contingency provides project managers with approval to financially manage against risks and unexpected events that may arise during the course of a project. Defence projects typically have greater inherent risk, longer acquisition timeframes and are generally more complex.

At the point of Government approval, contingency estimates are included in the amount approved by Government. However the contingency amount is not individually allocated, in cash budget terms, to each project but instead calls on contingency are managed as part of the broader IIP. As contingent events emerge requiring funding, contingency will be programmed in the relevant years up to the original levels approved by Government. The impacts of these contingency allocations are considered across the broader major capital program cash flow requirements. The contingency allocation and funding model was last reviewed at the 2016 White Paper.

Defence monitors the adequacy of its contingency management approaches noting the future capital program will be characterised by larger proportion of high-cost, more complex projects, such as the Joint Strike Fighter and Naval Shipbuilding programs. The ongoing effectiveness of contingency funding arrangements will continue to be monitored to ensure existing policies are appropriate and based on an assessment of project funding risks.

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 November 1998 to June 2018), the aggregate amount of ‘applied contingency’ is approximately $1.2 billion. The term ‘applied contingency’ is the amount of contingency that a project has allocated against identified risks, rather than actually spent. This represents 2.0 per cent of the 26 projects combined project approval value ($59.4 billion).

The areas where risks have been retired using contingency include:

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

Four projects have accessed contingency provisions in this financial year:

- AIR 9000 Phase 2,4 and 6 Multi-Role Helicopter
- JP 2008 Phase 5A Indian Ocean Region UHF SATCOM
- JP 2072 Phase 2B Battlespace Communications System
- LAND 75 Phase 4 Battlefield Command Systems

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 on capability.

Of the 26 projects in this report, there was a total of 11 projects that reassessed their Final Operational Capability forecast date within 2017-18, with ten pushing it out and one forecasting earlier achievement.

The average Final Operational Capability variance of projects reviewed in 2017-18 at 30 June 2018 is 29.7 per cent, which is similar to the 29 per cent in 2016-17. It should be noted that this excludes both LAND 75 Battle Management System and JP 2048 Phase 3 LHD Landing Craft Projects, as the current Final Operational Capability forecast date was unknown as at 30 June 2018. When the LHD Landing Craft is included with an estimated forecast date of June 2018, the average increases to an average of 35.0 per cent. 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 5 provides a list of additional schedule variance factors which can be attributed to the projects which have greater than ten per cent Final Operational Capability variance across the life of the project.

As outlined previously, the projects listed in the Major Projects Report represent 13.1 per cent by number, but 57.4 per cent by value. These projects are generally the larger acquisition projects that contain inherent risk, and as such, are more likely to encounter schedule delay. 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.

For example, submarine projects have contributed to high levels of schedule slippage outlined in this report. These three projects have been operating under the pre-Kinnaird through to the post-First Principles Review frameworks adapting to varying management processes and procedures. The 2012 Coles transformation program was instrumental in improving submarine availability as the key priority. This involved re-baselining the submarine capability projects. By 2014 Coles noted that submarine availability improved 'significantly' and by 2016 the Collins sustainment should be considered as an 'exemplar project'. Submarine project schedule variation should be considered in this broader context, where the department and industry were able to focus on delivering the priorities for the Australian Defence Force that could not have been achieved without schedule re-baselining.

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

Table 4 – Project Schedule Status

Project Number	Project	(a) 2nd Pass Approval	(b) Originally Estimated FMR	Forecast FMR at 30 June 17	(c) Forecast FMR at 30 June 18	(c-a)/(b-a) Variation Percentage FMR	(d) Originally estimated FOC	Forecast FOC at 30 Jun 17	(e) Forecast FOC at 30 Jun 18	(e-a)/(d-a) Variation Percentage FOC
AIR 6000 Phase 2A/2B	Joint Strike Fighter	Nov 09	Dec 23	Oct 23	Sep 23	-1.8%	Dec 23	Oct 23	Oct 23	-1.2%
SEA 4000 Phase 3	AWD Ships	Jun 07	Dec 17	Dec 19	Jan 20	19.8%	May 18	Jan 21	Jan 21	24.5%
AIR 7000 Phase 2B	P-8A Poseidon	Feb 14	Oct 19	Jun 22	May 22	45.6%	Jan 20	Jan 22	May 22	39.4%
AIR 9000 Phase 2/4/6	MRH90 Helicopters	Aug 04	Oct 14	Oct 18	Jun 20	55.8%	Jul 14	Jul 19	Dec 21	74.8%
AIR 5349 Phase 3	Growler	Apr 13	Jul 22	Jun 22	Jul 22	0.0%	Jul 22	Jun 22	Jul 22	0.0%
AIR 9000 Phase 8	MH-60R Seahawk	Jun 11	Dec 23	Dec 23	Dec 23	0.0%	Dec 23	Dec 23	Dec 23	0.0%
LAND 121 Phase 3B	Overlander Medium/Heavy	Jul 13	Dec 22	Dec 22	Dec 22	0.0%	Dec 23	Jun 23	Jun 23	-4.8%
JP 2048 Phase 4A/4B	LHD Ships	Jun 07	Aug 15	Sep 18	Dec 18	40.8%	Nov 16	Dec 19	Dec 19	32.7%
LAND 121 Phase 4	Hawkei	Aug 15	Dec 21	Dec 21	Dec 21	0.0%	Jun 23	Jun 23	Jun 23	0.0%
AIR 8000 Phase 2	Battlefield Airlifter	Apr 12	Oct 17	Oct 19	Oct 19	36.3%	Dec 17	Dec 19	Dec 19	35.3%
SEA 1654 Phase 3	MOSC	Apr 16	Mar 21	-	Mar 21	0.0%	Dec 22	-	May 22	-8.8%
AIR 5431 Phase 3	CMATS	Dec 14	TBA	TBA	TBA	-100.0%	Jun 23	Oct 25	Oct 25	27.5%
LAND 2072 Phase 2B	Battle Comms Sys Ph2B	Apr 15	Nov 20	-	Dec 20	1.5%	Sep 20	-	Sep 20	0.0%
AIR 7403 Phase 3	Additional MRTT	Jun 15	Mar 18	Oct 19	Oct 19	-100.0%	Mar 18	Dec 19	Oct 19	57.7%
SEA 1448 Phase 2B	Anzac ASMD 2B	Sep 05	Jul 17	Oct 17	Jul 18	8.4%	Mar 13	Oct 17	Aug 18	72.3%
SEA 3036 Phase 1	PPB-R	Apr 16	Nov 23	-	Nov 23	0.0%	Sep 23	-	Nov 23	2.3%
JP 9000 Phase 7	HATS	Aug 14	Dec 18	Dec 18	Mar 19	5.7%	Dec 20	Sep 20	Sep 20	-3.9%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	Nov 11	Sep 16	Oct 17	Nov 18	44.8%	Jun 16	Nov 17	Dec 18	54.5%
SEA 1442 Phase 4	Maritime Comms	Jul 13	May 23	Oct 23	Jun 24	11.1%	Dec 23	Dec 23	Jul 24	5.6%
SEA 1439 Phase 4A	Collins RCS	Sep 02	Jan 16	Oct 18	Oct 18	20.6%	Dec 10	Dec 18	Dec 18	97.0%
SEA 1429 Phase 2	Hw Torpedo	Jul 01	Nov 13	Oct 18	Oct 18	39.8%	Nov 13	Dec 18	Dec 18	40.3%
JP 2008 Phase 5A	UHF SATCOM	Mar 09	Mar 14	Jan 19	Dec 19	115.1%	Jun 18	Mar 19	Mar 20	18.9%
SEA 1439 Phase 3	Collins R&S	Sep 00	Oct 22	Aug 22	Dec 22	0.8%	Jun 14	May 22	Jun 23	65.5%
SEA 1448 Phase 2A	Anzac ASMD 2A	Nov 03	Jul 17	Oct 17	Jul 18	7.3%	Dec 11	Oct 17	Aug 18	82.5%
LAND 75 Phase 4	BMS	Aug 13	Jun 17	Oct 17	Dec 17	13.1%	N/A	N/A	N/A	N/A
JP 2048 Phase 3	LHD Landing Craft	Sep 11	Feb 16	Dec 16	Dec 16	18.8%	Feb 16	Jun 18	TBA	N/A

Note: In the 2013 Government Approval of LAND 75 Phase 4 there is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 WP-A. IOC and FOC are linked to WP¬-B-D, which is the element of LAND 75 approved under LAND 200 Tranche 2. Given this approach, there is no IOC/FOC for this project.

Table 5 – Additional Attribution of Schedule Variance Factors

Driver of Schedule Variance	Project
Platform availability	HW Torpedo
	Collins RCS
	Collins R&S
Industry Capability/Budget Adjustments	AWD Ships
Technical complexity - underestimation by industry and/or Defence of the complexity of developmental and/or large scale integration projects	LHD Ships
	Battlefield Airlifter
	LHD Landing Craft
	MRH90 Helicopter
	CMATS
Technical complexity and Scope Change	Anzac ASMD 2A
	Anzac ASMD 2B
	Additional MRTT
	P-8A Poseidon
	UHF SATSOM
Capability Manager Decisions	Battle Comm. Sys (Land)

Note: only projects with a variation of 10% or greater 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.

Materiel capability 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 2018. 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 scope.

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.

Performance in recent years has been strong and remains steady. Within 2017-18 Defence has seen a reduction in the number of performance measures across the projects with 200 in 2016-17 to 173 in 2017-18. In response to JCPAA Report 468 into the 2015-16 Major Projects Report, Defence committed to correct discrepancies between the approved project schedule and the project Materiel Acquisition Agreement. This work found and corrected 22 Major Projects Report projects with discrepancies.

Of the 173 measures across the 26 projects in this year's report:

- 98.7 per cent of measures are likely to be met (green); and
- 1.3 per cent of measures are under threat (amber).

For further detail on the Capability 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.

A summary of the key characteristics of each project is presented in Table 6 and illustrates the variety, complexity and scale of the acquisitions.

Table 6- Project Characteristics

Project Number	Project	First reported in MPR	Customer	Purpose of Capability[1]	Level of Development[2]	Acquisition Category[3]	Pre-/Post-Kinnaird[4]	Current Project Stage	Prime Systems Integrator
AIR 6000 Phase 2A/2B	Joint Strike Fighter	2010-11	Air Force	Replacement	Developmental	I	Post	Integration and Test	US Government
SEA 4000 Phase 3	AWD Ships	2008-09	Navy	New	AMOTS	I	Post	Initial Materiel Release	AWD Alliance
AIR 7000 Phase 2B	P-8A Poseidon	2014-15	Air Force	Replacement	MOTS	II	Post	Initial Materiel Release	US Government
AIR 9000 Phase 2/4/6	MRH90 Helicopters	2008-09	Army/Navy	Replacement	AMOTS	I	Post	Initial Materiel Release	Airbus Group Australia Pacific
AIR 5349 Phase 3	Growler	2013-14	Air Force	New	AMOTS	II	Post	Initial Materiel Release	US Government
AIR 9000 Phase 8	MH-60R Seahawk	2011-12	Navy	Replacement	MOTS	II	Post	Initial Materiel Release	US Government
LAND 121 Phase 3B	Overlander Medium/Heavy	2013-14	Army	Replacement	AMOTS	I	Post	Integration and Test	Defence
JP 2048 Phase 4A/4B	LHD Ships	2008-09	Navy	New	AMOTS	I	Post	Initial Materiel Release	BAE Systems Australia
LAND 121 Phase 4	Hawkei	2016-17	Army	Replacement	Developmental	I	Post	Detailed Design Review	Thales Australia
AIR 8000 Phase 2	Battlefield Airlifter	2013-14	Air Force	Replacement	MOTS	II	Post	Initial Materiel Release	US Government
SEA 1654 Phase 3	MOSC	2017-18	Navy	Replacement	AMOTS	II	Post	Detailed Design Review	Navantia
AIR 5431 Phase 3	CMATS	2016-17	Air Force	Replacement	Developmental	I	Post	Contract Signature	Air Services Australia
LAND 2072 Phase 2B	Battle Comms Sys Ph2B	2017-18	Army	Replacement	Developmental	I	Post	Initial Materiel Release	Boeing Defence Australia
AIR 7403 Phase 3	Additional MRTT	2015-16	Air Force	New	AMOTS	III	Post	Initial Materiel Release	Airbus Defence and Space
SEA 1448 Phase 2B	Anzac ASMD 2B	2009-10	Navy	Upgrade	Developmental	I	Post	Final Materiel Release	ANZAC Alliance
SEA 3036 Phase 1	PPB-R	2017-18	Navy	Replacement	COTS	II	Post	Detailed Design Review	Austal Ships
JP 9000 Phase 7	HATS	2015-16	Navy	Replacement	AMOTS	II	Post	Initial Materiel Release	Boeing Defence Australia
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	2012-13	Army	Replacement	MOTS	III	Post	Acceptance Into Service	Defence
SEA 1442 Phase 4	Maritime Comms	2014-15	Navy	Upgrade	AMOTS	II	Post	Detailed Design Review	Leonardo MW
SEA 1439 Phase 4A	Collins RCS	2007-08	Navy	Upgrade	AMOTS	IV	Pre	Initial Materiel Release	Defence
SEA 1429 Phase 2	Hw Torpedo	2009-10	Navy	Replacement	MOTS	III	Pre	Initial Materiel Release	US Government
JP 2008 Phase 5A	UHF SATCOM	2010-11	Joint	Upgrade	MOTS	II	Post	Detailed Design Review	Intelsat
SEA 1439 Phase 3	Collins R&S	2009-10	Navy	Upgrade	AMOTS	III	Pre	Initial Materiel Release	ASC
SEA 1448 Phase 2A	Anzac ASMD 2A	2009-10	Navy	Upgrade	AMOTS	II	Pre	Final Materiel Release	ANZAC Alliance
LAND 75 Phase 4	BMS	2015-16	Army	New	AMOTS	II	Post	Final Contract Acceptance	Defence
JP 2048 Phase 3	LHD Landing Craft	2013-14	Navy	Replacement	AMOTS	III	Post	Final Contract Acceptance	Navantia

[1] 'New' - a capability that has not previously existed in the ADF; 'Replacement' – a current capability that is being replaced by more up to date technology or to respond to a changing threat; 'Upgrade' – an upgrade to existing capabilities.

[2] Appendix 2 has full definition of levels of development.

[3] The CASG categorisation of projects that represent the complexity of the project on a sliding scale of I to IV with ACAT I representing the most complex projects.

[4] Provides an indication of whether the projects were initially developed under pre- or post-Kinnaird reforms.

Acquisition Governance

Smart Buyer

As part of the Capability Life Cycle framework, projects undergo a Smart Buyer assessment. This enables Capability Managers and project teams to work together, identify and analyse key project risks and drivers, and use that analysis to develop tailored Project Execution Strategies. The Smart Buyer risk-based methodology has also been applied to a selection of:

- Sustainment products to maximise the opportunities a sustainment re-tender offers Defence and Industry;
- other large procurements, such as the Next Generation Health Services and the Fleet Maritime Support Contract;
- the aggregation of similar projects into Sub-Programs for the purposes of increased efficiency and flexibility in their management; and
- Information Communications Technology and Estate projects.

In 2017-18 the Capability Acquisition and Sustainment Group held 118 Smart Buyer assessments for projects and products. Chief Information Officer Group held seven assessments, and the Defence Estate and Infrastructure Group held a further 51 assessments for their projects. The Capability Acquisition and Sustainment Group Smart Buyer assessments are detailed by stage in the Capability Life Cycle in the Table 7 below.

Table 7 – Capability Acquisition and Sustainment Group Smart Buyer Assessments in 2017-18

Smart Buyer Assessments	No. held
Gate Zero	50
Gate One	35
Gate Two	13
Other activities	14
Sustainment	6

Defence Independent Assurance Reviews

Similarly, there were 154 Independent Assurance Reviews held supporting capability development, acquisition and sustainment by conducting independent assurance on the respective activities. The Defence Independent Assurance Review framework has also been applied to other activities including:

- the Next Generation Health services;
- Enterprise Information Management;
- the Enterprise Resource Planning Program; and
- a range of projects delivered by the Australian Signals Directorate and the Australian Geospatial Organisation.

The Defence Independent Assurance Reviews are broken down by stage in the Capability Life Cycle in Table 8 below.

Table 8 – Defence Independent Assurance Reviews

Defence Independent Assurance Reviews	No. held
Gate Zero	23
Gate One	14
Gate Two	26
Performance (during delivery)	67
Sustainment	23

Of these, 17 projects listed in the Major Projects Report had an Independent Assurance Review conducted in 2017-18.

The Independent Assurance Review board make recommendations on many aspects relating to project or product management and commercial strategies. This may include a recommendation to refer a project or product for further assessment as either a Project of Interest or Project of Concern by senior executives.

Performance Management

Overall, the performance of the Department's major capital equipment program in the 2017-18 financial year is strong. Of the 120 post Second Pass approved major capital equipment projects, three projects (or 2.5 per cent) had issues with capability, schedule or cost which were significant enough to be included in the Projects of Concern report. A further nine projects (or 7.5 per cent) were identified as Projects of Interest, with risks associated with capability, schedule or cost that warrant further attention from senior executives.

Quarterly Performance Report

The Quarterly Performance Report provides the Department and the Ministers with useful information relating to the performance of Defence's major capital equipment acquisition and sustainment program. The report 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 Quarterly Performance Report is a summary of performance at the end of each quarter on the key acquisition projects and sustainment products[1].

Senior Defence stakeholders and the Defence Ministers are provided with information about emerging risks and issues. It is one of the tools that support decision-making on 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.

[1] These are comprised of the Top 30 projects and sustainment products listed in the Defence Portfolio Budget Statements and all of the Major Projects Report.

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

Recommendation 1 from the July 2017 ANAO Performance audit "Defence's Management of Material Sustainment" has been implemented[2].

Projects of Interest

Projects (and products) showing heightened risks in the areas of cost, scope, schedule and capability, or commercial strategy and other issues are monitored through the Independent Assurance Review and Quarterly Performance Report processes.

Information is gathered from a variety of sources and consultation with senior stakeholders occurs before determining a Project of Interest. Once listed, a more detailed one-page summary of issues, along with proposed remediation strategies to get the project/product back on track is provided in the Quarterly Performance Report. This list is used for internal departmental and Ministerial reporting and management purposes. The broad goal is to provide senior management oversight and prevent projects from becoming Projects of Concern.

Projects of Concern

Projects (or sustainment activities) identified as a Project of Concern have very significant technical, cost or schedule challenges that benefit from additional support from Senior Executives. 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 increased reporting to Government.

[2] Recommendation 1: Defence institutes a risk-based quality assurance process for the information included in the Defence Quarterly Performance Report.

As at 30 June 2018, AIR 9000 Phase 2, 4 & 6 Multi-Role Helicopter 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 2018, the three active Projects of Concern had a total value of $4.0 billion.

Table 9 provides a list of Projects of Concern as at 30 June 2018. Significant changes in the 2017-18 reporting period were the addition of AIR 5431 Phase 3 Civil Military Air Traffic Management System and AIR 5431 Phase 1 Deployable Defence Air Traffic Management and Control System to the list. After a successful remediation, CN10 Collins Class Submarines Sustainment and SEA 4000 Phase 3 Air Warfare Destroyer were removed from the list. Additionally, AIR 5431 Phase 3 Civil Military Air Traffic Management System was removed from the list after the acquisition and support contracts were signed with the prime contractor.

Further, since 30 June 2018, Joint Project 2008 Phase 3F Australian Defence Satellite Communications Terrestrial Enhancement was removed as a Project of Concern.

Table 9: Projects of Concern at 30 June 2018

Project Name	Project Number	Date Added
Multi-Role Helicopter	AIR 9000 Phases 2, 4 & 6	Nov 2011
Australian Defence Satellite Communications Terrestrial Enhancement	JP 2008 Phase 3F	Sep 2014
Deployable Defence Air Traffic Management and Control System	AIR 5431 Phase 1	Aug 2017

The ANAO is conducting a Performance Audit into Defence's Management of Projects of Concern. The objective of the audit is to assess whether Defence's Projects of Concern regime is effective in managing the recovery of underperforming projects. ANAO is currently conducting fieldwork, with the report expected to be presented for tabling in the Summer session of the Parliament in 2019.

Response to the JCPAA review

The JCPAA's Report 473: *Defence Major Projects Report (2016-17)* outlined progress against the JCPAA's previous Recommendations and provided a further three Recommendations for Defence. As the formal response is due to the Committee by 18 December 2018, the publication timings prevent the inclusion of the response in this report.

Defence acknowledges the Committee's disappointment that there had been little progress in updating the Project Maturity Score methodology, whilst the department assesses its application in the contemporary environment.

A key challenge in implementing changes to the policy relates to the extant project reporting systems. Implementing even minor change on the aging project Monthly Reporting System needs to be balanced against the requirement to address technical obsolescence and still achieve value for money. In the interim, Defence has made the following improvements:

- Defence has undertaken to reinvigorate the discipline within projects to meet the requirements of the extant guidance through our Project Management Centre of Expertise.
- The Defence Independent Assurance Review procedures are continuously improved. This includes testing the accuracy of the Project Maturity Scores for individual projects as each project goes through their performance review.
- Further, Project Maturity Scores have been included in the "Project Dashboard" in the CASG Quarterly Performance Report with effect from the December 2017 report to lift their profile and improve their validity within the organisation.
- Defence has also begun to strengthen the way risks are communicated through the extant Defence reporting systems.

Better Industry Engagement

Defence is also improving the way it engages with industry to build capability. To help build a stronger and more competitive Australian Defence industry base, Defence has established the Centre for Defence Industry Capability (CDIC), the Defence Innovation Hub and the Next Generation Technologies Fund. These initiatives enable industry to more easily engage with Defence, propose innovative ideas and get the support, funding and advice they need. This in turn secures an innovative and competitive industrial base major projects require.

The 2017-2018 financial year also saw the roll out of our strengthened Australian Industrial Capability Plan, aimed at driving greater Australian industry participation in major capital equipment projects of $20 million and above, including all major shipbuilding projects.

The Joint Strike Fighter Program has a history of good engagement with Industry through the predecessor program, the Defence Industry Innovation Centre. New Defence Industry policy initiatives have also partnered with the JSF program through the CDIC. The 2017 Defence Industry and Innovation Programs Update Report noted the work done by the CDIC to understand the Australian industry capability and provide grants to 34 Australian businesses to help them win contracts on the global F-35 Program.

Defence Materials Technology Centre (DTMC)

DMTC has led collaborative technology development activities that have contributed, over the life of the projects as well as in the 2017-18 reporting period to the goal of enhancing Defence capability through innovation. The Innovation Hub's investment through DMTC (set at $3m per year in the 2016 Defence Industry Policy Statement) has attracted an additional $20m in co-investment from industrial and research sector partners and Defence program offices in 2017-18. In a number of areas across the DMTC's portfolio of programs, the Innovation Hub's support for DMTC has enabled platform technologies to be expanded and deployed on a range of different land and maritime platforms. For example, breakthroughs in welding and fabrication technologies and techniques that have already proven to be applicable to land vehicle production are now being applied to programs in the Naval Shipbuilding Enterprise.

There are eight projects in the 2017-18 Major Projects Report benefitting from this collaboration in Table 10 below.

Table 10: Eight Projects with DMTC Involvement in 2017-18

Project Number	Project Name	DMTC involvement
AIR 6000 Phase 2A/B	New Air Combat Capability (Joint Strike Fighter)	Support to industrial base – Vertical tail manufacture (BAES and supply chain), corrosion prognostics (BAES, Defence Science & Technology Group), and manufacturing and sustainment technologies. Current proposal with Defence for consideration on a suite of technology development projects
SEA 4000 Phase 3	Air Warfare Destroyer Build	Welding & production automation technology – removal of module distortion mismatch
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability (Growler)	Corrosion sensors, prognostics, non-destructive testing
LAND 121 Phase 4	Protected Mobility Vehicle – Light (Hawkei)	Manufacturing and production efficiency, weight optimisation, automated manufacture & design optimisation, blast modelling, supply-chain development (Thales & Supply chain partners)
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	General support - supply chain & sovereign industrial capability development relevant to the shipbuilding enterprise
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers (Overlander Medium/Heavy)	Materials model development support provided to Land Platform Development Program for M113 upgrade
JP 2048 Phase 4A/4B	Amphibious Ships (Land Helicopter Dock)	Corrosion mitigation
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Corrosion management

Risk Reform

Defence is currently updating the Enterprise Risk Framework and has recently refreshed the Enterprise Risk themes for the organisation. Individual Group and Service performance and risk reporting contributes to the Enterprise Risk view for Defence.

The Capability Acquisition and Sustainment Group is reforming its management of risk to align risk management practices and standardise the methods.

Defence has signed a new contract with Aerosafe to enable completion of the Risk Reform Program by November 2019. The purpose of the reform program is to implement a Group Risk Management Model that aligns enterprise-level and specialist risk management practice within the One Defence Enterprise Risk Management Framework.

The key focus of this contract is to align risk management practices across all aspects of capability delivery including Specialist Risk Areas.

The current priorities are:

- Completion and release of practice guidance in project management risk across the Capability Life Cycle, corporate risk, safety risk and commercial risk.
- Planning for transition of projects/products to the remodelled approach, prioritising planning for the Top 30 projects, Project Performance Review projects, and Projects of Concern first.
- Confirming the Capability Acquisition and Sustainment Group standard baseline version controls and ensure they have been activated for all projects/products risk information.

Project transition planning will be structured to consider Defence risks as well as capability life cycle dependencies. It is expected that the remodelled risk management practices in projects will take a number of annual cycles to reach maturity.

Doing Better

The Department is progressing significant reform under the First Principles Review to allow Defence to deliver the ambitious Defence White Paper outcomes in the most efficient and effective way possible. This includes:

- changing the capability development processes to move towards a risk-based approach;
- engaging and partnering with industry to deliver the White Paper outcomes;
- providing flexibility within our workforce and utilising skills to achieve the best possible outcomes; and
- improving our information systems to improve our ability to make informed decisions, measure performance, provide timely, credible, traceable and relevant management information, and support enterprise-wide business processes.

Appendices

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

Project Number	Project	First Reported in MPR	Last Reported in MPR	Level of Development	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	AMOTS	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	MOTS	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	MOTS	3,661.4	3,045.9	651.5	Dec-12	Dec-12	FOC achieved
SEA 1444 Phase 1	Armidale Class Patrol Boat	2007-08	2012-13	AMOTS	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	MOTS	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	AMOTS	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	AMOTS	319.0	287.1	31.9	Sept 13	Jan-14	FOC achieved
JP 2008 Phase 4	Next Generation SATCOM Capability	2009-10	2013-14	MOTS	869.5	569.1	300.4	Jun-14	Jul-15	FMR achieved
JP 2043 Phase 3A	High Frequency Modernisation	2007-08	2013-14	Developmental	580.2	498.1	82.1	Dec-17	Dec-17	JCPAA Approval[2]
LAND 17 Phase 1A	Artillery Replacement	2010-11	2013-14	MOTS	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	Developmental	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	AMOTS	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	Developmental	3,885.3	3,559.6	285.7	Feb-15	May-15	FOC achieved

LAND 75 Phase 3.4	Battlefield Command Support System	2010-11	2014-15	AMOTS	315.7	271.9	43.8	Mar-15	Apr-15	FOC achieved
AIR 5402	Air to Air Refuelling	2008-09	2015-16	Developmental	1,818.7	1,764.3	54.4	May-16	Jul-16	FOC achieved
AIR 87	Armed Reconnaissance Helicopter	2007-08	2016-17	Australianised MOTS	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	MOTS	643.9	459.5	175.4	Jul-17	Jul-17	FOC achieved
LAND 116	Bushmaster Protected Mobility Vehicle	2007-08	2016-17	Australianised MOTS	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	Australianised MOTS	900.3	900.3	0.0	Oct-16	Oct-16	FOC achieved

1 Approval granted after project scope and budget were approved for transition to the in-service sustainment support system in 2010-11.

2 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.

3 ibid.

4 ibid.

Appendix 2: Lessons learned

The Joint Committee of Public Accounts and Audit recommended in *Report 422: Review of the 2009-10 Defence Materiel Organisation Major Projects Report*, that a lessons learned section for both the project level and the whole of organisation be included in the MPR for projects that have met the exit criteria.

The lessons learned at the project level, against a whole of organisation level category are listed below in a table format. These have been extracted directly from previous Major Project Reports, dating back to 2008-09.

Lessons learned at the project level

Categories of systemic lessons	Project lesson	Project learned from
Contract management	An acquisition strategy combining the acquisition and support of the fleet in one single contract rather than the traditional acquisition model followed by a separate support contract can lead to significant disputation and complications in closing out latent defects where the prime contractor is not also the builder. Invariably, once the capability is delivered and being operated and the contract is into the sustainment phase, there is a greater reluctance on the part of the prime contractor to progress rectification of build-related defects that may result in a cost to the contractor and disputation with the builder.	SEA 1444 Phase 1 – Armidale Class Patrol Boat
Contract management	The Armidale Class Patrol Boat In Service Support (ISS) contract is principally a 15 year fixed price contract with the option for a five year extension. Existing contract provisions provide no incentive to	SEA 1444 Phase 1 – Armidale Class Patrol Boat

	the contractor to improve or implement changes in the delivery of support activities that would deliver benefits/savings to both the contractor and the Commonwealth. In particular, there is no incentive to make savings over the life of the contract that would generate a reduction in the ISS fee. Incentives need to be built into contracts beyond the acquisition phase.	
Contract management	Proactive Contract Management: Due to the incremental contracting nature of the project, joint and proactive contract management was essential. Regular commercial integrated product teams provided an effective vehicle to manage the prime integration contract with Boeing and FMS cases with the US Government.	AIR 5376 Phase 2 – F/A-18 Hornet Upgrade
Contract management	Participation in face to face financial working groups bi-annually resulted in significant financial savings under the WGS MOU. The cost associated with overseas travel was far outweighed by the financial savings and clarity of financial projections.	JP 2008 Phase 4 – Next Generation SATCOM Capability
Contract management	Best practice would suggest that for a capability acquisition that includes significant software development, a contract that allows for both fixed price elements as well as alternative cost structures which include appropriate controls, incentive and penalty models that can be applied to the highly developmental elements involving significant risk, may be appropriate. Milestone payments could be selected for those deliverables that have well defined objectives and the alternative payment method with incremental work packages could be	JP2043 Phase 3A – High Frequency Modernisation

	applied to the software aspect of the project. This approach would require strict controls and metrics to limit the risk to the Commonwealth.	
Contract Management	A proper balance needs to be kept between proper engineering processes and contractor-perceived commercial imperatives to minimise risk that unrealistic technical programs will actually result in delays to the overall schedule.	JP2043 Phase 3A – High Frequency Modernisation
Contract management	The contract schedule must be accepted by all parties as realistic and achievable from the outset. Each party must be committed to achievement of the schedule and aware of the consequences of non-achievement, plus any provisions for delay outside the contractor's control. The contract should contain: • milestones which enable the Commonwealth to unambiguously assess Contractor performance from the outset of the Contract; • with the exception of non-recurring engineering effort, payment of all or a substantial part of the contract price should be subject to achievement of clear project milestones; • milestones should reflect delivery of contracted requirements to the Commonwealth, not just reaching intermediate points on the timeline; • milestones which enable use of the equipment and supplies (such as Integrated Logistic System (ILS) and training) should be given similar weight as delivery of the equipment itself;	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

	• payment on achievement of milestones should be conditional on achievement of previously scheduled milestones; • payment of milestones should also be tied to remedies under the contract to allow the Commonwealth to seek redress; and • clear entitlements of the Commonwealth to access all contractor project data (including internal workforce planning data) so as to be able to make informed assessments if a milestone is not achieved.	
Contract management	Implement a progressive acceptance methodology from the outset for all project data / documentation supplies and requirements acceptance objective quality evidence in order to progressively increase confidence of all stakeholders involved with regard to project outcomes.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Contract management	The establishment of commercial contracts were based entirely on deliverable items and artefacts (software build states and/or documentation in electronic format) and progress against agreed milestones. Payments were made on delivery acceptance and milestones achieved in accordance with the contract. Reliance on Contract Earned Value Management requires considerable effort and expertise on the part of the Project authority to adequately assess contractor performance, and was not utilised or necessary to achieve 'value for money' project objectives.	SEA 1390 Phase 4B – SM-1 Missile Replacement

Contract management	Significant efficiencies were achieved for ease of handling, delivery, traceability and tracking of documents through electronic document delivery which was encouraged in all commercial contracts and the primary FMS case.	SEA 1390 Phase 4B – SM-1 Missile Replacement
Contract management	Better appreciating the challenges involved in contractor management in a complex developmental project.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Contract management	Early recognition of the need for proactive stakeholder engagement throughout the project.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Contract management	The project has a well defined contract with clear conditions of contract that provide flexibility where it is needed. In particular, parties to the contract can agree to changes to the GFM by accession rather than via a formal contract change proposal, which allows far greater agility in the management of GFM and GFE requirements.	LAND 75 Phase 3.4 – Battlefield Command Support System
Contract management	The project has formed a variety of contracts and sub-contracts with the Commercial Design Authorities for Army's platforms. There is a wide variety of Intellectual Property (IP) arrangements amongst the separate platform contracts. In the cases where the CoA has stronger IP rights these contracts have worked more effectively and at a lower overall cost. It is recommended for future platform projects that rights to the IP consistent with ownership are sought.	LAND 75 Phase 3.4 – Battlefield Command Support System

Contract management Schedule management	Improving governance to support a more disciplined consideration of strategic trade-offs between performance, cost and schedule post contract signature	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Contract management Schedule management	Accessibility requirements should be agreed, specified and documented early in the contracting process to minimise risk of incurring excusable delays when access to the system to be upgraded is constrained due to operational reasons.	JP2043 Phase 3A – High Frequency Modernisation
Contract management Schedule management	Foreign Military Sales (FMS) Schedule planning – When factoring FMS related schedules, there is an inclination to schedule the acceptance of the case without allowing sufficient schedule float to accommodate potential delays. Often, there will be a delay post case acceptance whilst the US Government supporting office seeks to contract their suppliers - this delay could be some six to nine months in some instances. When negotiating lead times, it is essential to gain an understanding of the contracting and procurement processes of the source country.	LAND 19 Phase 7A – Counter-Rocket Artillery & Mortar

Contract management Schedule management First of Type Equipment	A fundamental issue to consider at the time of capability and project definition is how the capability should be acquired. If the project is developmental, then consideration should be given to methods other than a fixed price contract for achieving the capability. Contracts should include appropriate clauses that recognise the complexities of verifying and validating a software development project. Multi-platform upgrades should allow for implementation and testing/acceptance of the first platform without committing to a full class upgrade of all platforms. Conducting an upgrade of an existing capability concurrent with scheduled maintenance availability requires very detailed planning and careful consideration of the supporting contract clauses.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Contract management Requirements management	For very large developmental contracts, project managers must ensure that the contractor maintains sufficient focus and resourcing on documenting what is being delivered and how to use it (through ILS, configuration management and training). Milestones must be structured so that the contractor is not tempted to focus on equipment deliverables only. Payment for equipment milestones should be conditional on achievement of related ILS milestones. The contract should be clear on configuration management requirements of ILS products in an	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

	incremental delivery software development project. This should align to milestones and remedies in the contract.	
Contract management Requirements management	Objective acceptance criteria are required to ensure there is no scope for dispute as to whether the criteria have been met. Criteria for determining contractual achievement should support those criteria used by Defence for determining achievement by DMO of the measure of effectiveness in the MAA	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
First of Type Equipment	Stability of interfaces on ageing platforms may not be reliable, leading to an underestimation of integration complexity.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
First of type equipment	Host platform upgrades not required in the past may now be required, due to the minimum technical performance requirements of new systems to be integrated.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
First of type equipment	FMS is a good procurement vehicle when a US program is mature. However, FMS provides little ability for DMO to manage capability and associated risk when US program is less mature and the Commonwealth is the integrator of project outcomes.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
First of type equipment	For a new or significantly modified design there will be a number of design changes emanating from initial sea trials. The aggressive delivery schedule for the Armidale Class Patrol Boat did not allow time for changes from initial sea trials to be built into the follow-on build boats prior to their construction. This resulted in an evolving design baseline throughout the production phase that was not stabilised until	SEA 1444 Phase 1 – Armidale Class Patrol Boat

	after delivery of the last boat. Consequently the redesign, build, test and acceptance aspects of boats built after the first of class became unnecessarily complicated, expensive and inefficient. Time should be allowed after the first (or second depending on the size of the class) boat build to conduct sea trials and modify and stabilise the design as appropriate prior to the main production run.	
First of type equipment	Procurements that include significant change to software-intensive systems and complex system integration have many inherently high-risk activities, which must be analysed and appropriate risk mitigation processes applied. Such risks are often under-estimated in the planning phase.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
First of type equipment	In the context of pre-project planning, the need to better appreciate the effort involved in being a customer of a first-of type program.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Recognising the need for proactive risk management and the use of high-end risk management tools.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Appropriate investment in pre-contract work (such as an IDA phase) to better understand the technical risks, clarify Defence's appetite for it and adjust requirements, acquisition strategy and expectations.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Tempering the biases towards overoptimism and underestimation of risk by both industry and Defence, and making allowances for the biases and risks in the commitments made to government and the Capability	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft

	Manager.	
First of type equipment	Accepting and accommodating the likelihood of incremental delivery of capability in developmental projects.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of Type Equipment	The development and introduction into service of a first-of-type military (aircraft) mission and support system is always harder than it first appears. At contract signature the project appeared a reasonably low risk venture. However, over the course of the project, it became apparent to both Defence and the contractor that the integration of the fuel delivery systems and military systems on a commercial aircraft introduced many challenges including: software integration issues, underestimation of developmental and certification testing schedule. As a result, a higher effort for a greater period of time was required by Defence to support the program.	AIR 5402 – Air to Air Refuelling Capability
First of type equipment and off-the-shelf equipment	Weapons acquired under the scope of the project proved to be cost effective for the Commonwealth as the weapons were US Navy (USN) common and this also assisted in providing common integration and technical input from the USN.	AIR 5349 Phase 2 – Bridging Air Combat Capability
First of type equipment and off-the-shelf equipment	FMS is a good procurement vehicle when a US Program is truly MOTS. However, FMS provides little ability for DMO to manage capability and associated risk when the US program is less mature.	AIR 5349 Phase 2 – Bridging Air Combat Capability

First of type equipment Off-The-Shelf Equipment	Substantial development in the information technology field over the extended term of the project means that some elements of the system could now be delivered via off-the-shelf solutions or by other contemporary production, rather than attracting extended software development, thereby reducing risk, schedule and possibly cost. The proposed approach for capability development involving substantial software or software systems development over an extended period needs to be considered carefully to enable best use of emerging developments within appropriate risk, schedule and cost constraints.	JP2043 Phase 3A – High Frequency Modernisation
First of type equipment Requirements management	Major maritime software development should be incremental and delivery does not have to be aligned with the platform modification program.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
First of Type Equipment Schedule Management	Technical (design) maturity assessment: a tender definition activity was undertaken following selection of the preferred supplier and prior to contract negotiations. However, due to time constraints and the breadth of review activities, it was not possible to conduct a comprehensive technical review and maturity assessment. As a consequence, an aggressive system design schedule was agreed that subsequently proved difficult to achieve due to lower design maturity - and hence higher development effort - on some systems. The additional development effort was accommodated under the change to a two-phased conversion and test	AIR 5402 – Air to Air Refuelling Capability

	process. In hindsight, once it became apparent that Australia was the lead customer for the A330 MRTT, a more robust design maturity assessment should have been undertaken under a funded design development process prior to contract award.	
Governance	Considerable acceleration of the acquisition cycle for the WGS program necessitated a strengthening of the governance process to ensure lines of authority and responsibility were clear in the definition of business need and option analysis.	JP2008 Phase 4 – Next Generation SATCOM Capability
Governance	During the course of the program, it was found to be essential to continue with an expanded Integrated Project Team which had senior stakeholder representation of all groups involved, including projects delivering the platforms, technical regulatory agencies and the Capability Managers.	LAND 75 Phase 3.4 – Battlefield Command Support System
Governance	Considering the many stakeholder interfaces involved in the NCW programs (which this project is but one), the traditional PMSG forum was found to be insufficient and requiring a broader NCW program focus. As a result, higher level program management oversight, which involves all key stakeholder groups, including the Capability Manager, Capability Development Group and the DMO, has proven to be an essential management forum for the project.	LAND 75 Phase 3.4 – Battlefield Command Support System
Governance Resourcing	Integrated Product Teams: Integrated product teams for all project disciplines (engineering, logistics, commercial, test and evaluation, and display development) were established with members from all	AIR 5376 Phase 2.1 – F/A-18 Hornet Upgrade

	major stakeholders (Commonwealth, prime and sub contractors, US and Canadian Government representatives). These teams met formally on a regular basis and with significant issues being raised with the overarching management integrated product team. As well as ensuring progress towards a common goal, the teams enabled the implementation of many other project initiatives that relied on quick and honest communication between all parties.	
Governance Schedule management	Joint Risk and Schedule Management – through the integrated product teams a common risk and schedule management methodology was implemented for the entire project. Boeing, as the prime integrator, provided a vehicle to manage both risk and schedule in a common framework. Pro-active management of risks was encouraged and many mitigation strategies, particularly in respect to display development, were implemented to avoid schedule delays.	AIR 5376 Phase 2 – F/A-18 Hornet Upgrade
Military off-the-shelf equipment	Considerable acceleration of the standard acquisition cycle is possible when the major supplies being procured are off-the-shelf production items. However, acceleration of establishment of support systems may be more difficult and should attract early management focus.	AIR 8000 Phase 3 – C17 Globemaster III Heavy Airlifter

Off-the-shelf equipment Requirements management Resourcing	Support arrangements – Accelerated Acquisitions. Whilst they deliver equipment quickly, Integrated Logistics Support considerations (e.g. Net Personnel and Operating Cost) can take considerable time when implemented retrospectively. Limitations to resources and costs need to be considered at the early stages of the project to enable robust planning.	LAND 19 Phase 7A – Counter-Rocket Artillery & Mortar
Off-the-shelf equipment Requirements management	Sole source relationships: In a sole source relationship, projects might consider the Commonwealth of Australia would lack leverage over suppliers when negotiating contractual outcomes due to the absence of supplier competition. In this case, early and strong face-to-face engagement between the project office and FMS staff in the US and Saab staff in Sweden assured professional and outcome focused relationships. Using other Defence establishments for training, using partner nations to leverage open source commercial information to gain a sense of value for money in Australia's circumstance, and holding the supplier's reputation for further business opportunities at risk from poor performance in the current project are options available to the Commonwealth when negotiating sole source contracts.	LAND 19 Phase 7A – Counter-Rocket Artillery & Mortar
Requirements management	Risks associated with requirements instability, software development and systems engineering were known at the time of contract signature but in the light of subsequent events were clearly not adequately addressed in pre-contract	JP2043 Phase 3A – High Frequency Modernisation

	negotiations. The experience underlines the importance of having well-defined and stable requirements at contract award, and of contractors having sound systems engineering and software development processes.	
Requirements management	The accelerated procurement of major materiel is possible with off-the-shelf items currently in production, but the establishment of a sustainment solution is a challenge and requires early management oversight.	AIR 5349 Phase 1 – Bridging Air Combat Capability
Requirements management	Interface Control Documents are not always correct or may not have been interpreted correctly during host platform design.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
Requirements management	Failure at project inception to articulate, tailor and agree naval standards to be applied to a ship designed and built to commercial 'Classification Society' standards has resulted in considerable debate and potential cost increase.	SEA 1444 Phase 1 – Armidale Class Patrol Boat
Requirements management	The data generated by Defence Science Technological Organisation as part of the centre barrel test-to-destruction programme will result in a considerable cost saving to the project (due to a reduction in the number of aircraft requiring structural refurbishment programs 2) and an increased flexibility in aircraft modification induction dates.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment
Requirements management	Modifying an ageing weapon system such as the Hornet aircraft can present emergent work such as corrosion and cracking in the aircraft structure which must be rectified while the aircraft is disassembled. Adequate project contingency budget and schedule must be programmed	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment

	to accommodate such uncertainties.	
Requirements management Resourcing	Increased need for collaboration due to diverse systems integration. As DMO projects become heavily integrated and dependent on one another, such as interoperable battle management systems, the technical challenges to success become frequent. Close collaboration with the customer, supplier and related DMO projects, early in the process, is essential to understanding the interoperability requirements and developing suitable test plans and schedules that achieve the outcomes of the customer. Regular joint working groups are an excellent way to achieve this.	Land 17 Phase 1A – Artillery Replacement
Requirements management Resourcing	Close stakeholder engagement – whilst delivering a novel and technically complex system to Army, the project experienced a constantly changing environment in terms of customer requirements. In order to ensure the customer's needs are met through timely and accurate representation of requirements to suppliers, continuous face to face stakeholder engagement is essential. Regular working groups with both the customer and supplier are an excellent way to achieve this.	Land 17 Phase 1A – Artillery Replacement
Requirements management	Requirements and specifications must be well defined and agreed before contract signature. Where detailed specifications cannot be defined fully prior to contract signature, such as when systems definition and new design work must be undertaken within a	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

	developmental project phase, then the end capability requirements and priorities must be well defined and agreed.	
Requirements management	Close liaison and communication with Navy stakeholders is required throughout the project life. Navy regulator engagement must be open and transparent from the project commencement to FOC so that the Navy Acceptance Certificate (T1338) residual issues/risks are well understood and easily accepted. Where capability delivered falls short of Navy customer initial expectations as agreed in the MAA, the process of securing concessions/agreement is needed to allow efficient and prompt project closure to avoid/limit inefficient use of resources.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Requirements management	For Network Centric Warfare (NCW) projects that have many interfaces and stakeholders, it is essential to have the requirements not only well understood, but to have these very well defined in the suite of Second Pass project approval documentation. This provided a solid foundation to build an executable contract, and helps guide stakeholder projects who are seeking interoperability with the BGC3.	LAND 75 Phase 3.4 – Battlefield Command Support System
Requirements Management	Whilst this project preceded improvements in the capability definition documents (Operational Concept Document, Function and Performance Specification and Test Concept Description), the intent of these documents was included in tender documentation and refined during contract negotiation for inclusion in the Acquisition Contract. The Contractor's internal	AIR 5402 – Air to Air Refuelling Capability

	requirements management process did not adequately support a robust process for customer clarification of the operational intent leading to protracted development and rework. There is a need to ensure that a robust process exists to achieve a common understanding of derived requirements and operational intent, and that it is agreed in the early stages of the project life-cycle.	
Requirements management Contract management	Two stage contracting – Contract Development Agreements facilitate early positive engagement with the contractor, joint development of the resultant fixed price contract and establishes an effective and cooperative work environment	SEA 1390 Phase 4B – SM-1 Missile Replacement
Requirements management Contract management	For significant and high technological upgrades to major systems the acquirer (Commonwealth) acting as the Procurement Coordinator managing separate contracts directly with OEMs allows for better risk management, schedule control and influence on the quality of the contracted supplies.	SEA 1390 Phase 4B – SM-1 Missile Replacement
Resourcing	A reasonable presence of Australian Super Hornet Project Staff in the US is required to enable the Commonwealth adequate insight, influence and progress reporting of the USN and Boeing activities.	AIR5349 Phase 1 – Bridging Air Combat Capability
Resourcing	Personnel resourcing, especially continuity in Business and Finance staff, requires careful management in project wind-down leading to FOC as project reporting and accurate financial accounting remains obligatory and at the same magnitude. Australian Super Hornet Project Office suffered when the business and finance responsibilities	AIR5349 Phase 1 – Bridging Air Combat Capability

	were reassigned from the Project Office in Canberra to Tactical Fighter Systems Program Office 12 months before FOC without an associated transfer of personnel. Furthermore, the level of work to account for assets and inventory procured by the project and the finance resource that would be required following FMR was underestimated causing the processing of Assets Under Construction to be adversely affected. This was further exacerbated by increased governance required through the utilisation of Quality Assurance Rollout Assist. To overcome these deficiencies, finance and logistics resources are being shared within Tactical Fighter Systems Program Office.	
Resourcing	The level of experience gained as a result of the Joint Standoff Weapon C-1 operational test and evaluation program has provided the DMO with the ability to streamline raise train sustain weapons test programs.	AIR 5349 Phase 2 – Bridging Air Combat Capability
Resourcing	Sufficient resident project staff is important to ensure US Government and contractors understand our requirements and expectations.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
Resourcing	The DMO needs to work closely with Australian Small to Medium Enterprise (SME) companies to ensure the SME resourcing effort and engineering demands in executing Defence contracts is not underestimated.	JP 2008 Phase 4 – Next Generation SATCOM Capability
Resourcing	The need for industry to pay greater attention to adequately resourcing complex and highly developmental projects.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft

Resourcing Contract management	The need to provide adequate resources with sufficient lead-time to develop and execute the evaluation and negotiating phases for the in-service support component of a first of type capability.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Resourcing Governance	Applying greater workforce, management focus and governance to the definition, planning and execution of the Integrated Logistics Support and sustainment components of the project in keeping with their significant share of total system life-cycle costs.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Schedule management	Closely monitor the return of repairable parts for the production installation phase to ensure no delays are experienced during the rebuild of each aircraft being modified. The more severe action that could be taken is to direct that repairable parts are not removed during the aircraft modification. Close monitoring of modification kit holdings and subsequent timely procurement is required to ensure kit deficiencies do not arise impacting on production schedule.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment
Schedule management	Underestimating the length of time required and effort involved in undertaking these phases when applied to a complex, highly developmental system.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Schedule management Resourcing Governance	International Traffic in Arms Regulations (ITAR) – as the number of ITAR controlled items being acquired by Defence increases, the need for close engagement with the Defence Export and Controls office and a detailed data management plan early in the project becomes essential. The movement and transfer of ITAR	Land 17 Phase 1A – Artillery Replacement

	controlled items between countries and parties is governed by Technical Assistance Agreements and Third Party Retransfers, these documents are time consuming to develop with the US government and must be commenced early in the project.	
Schedule Management	The evaluation and scheduling of a gap between Low Rate Initial Production and Full Rate Production is a critical driver for effective and efficient Full Rate Production. This schedule gap must provide suitable time for; evaluation of the Low Rate Initial Production deliverables, planning to overcome any production and performance quality issues, and implementation of improved production procedures.	LAND 121 Ph3A – Overlander Vehicles

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
- 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.

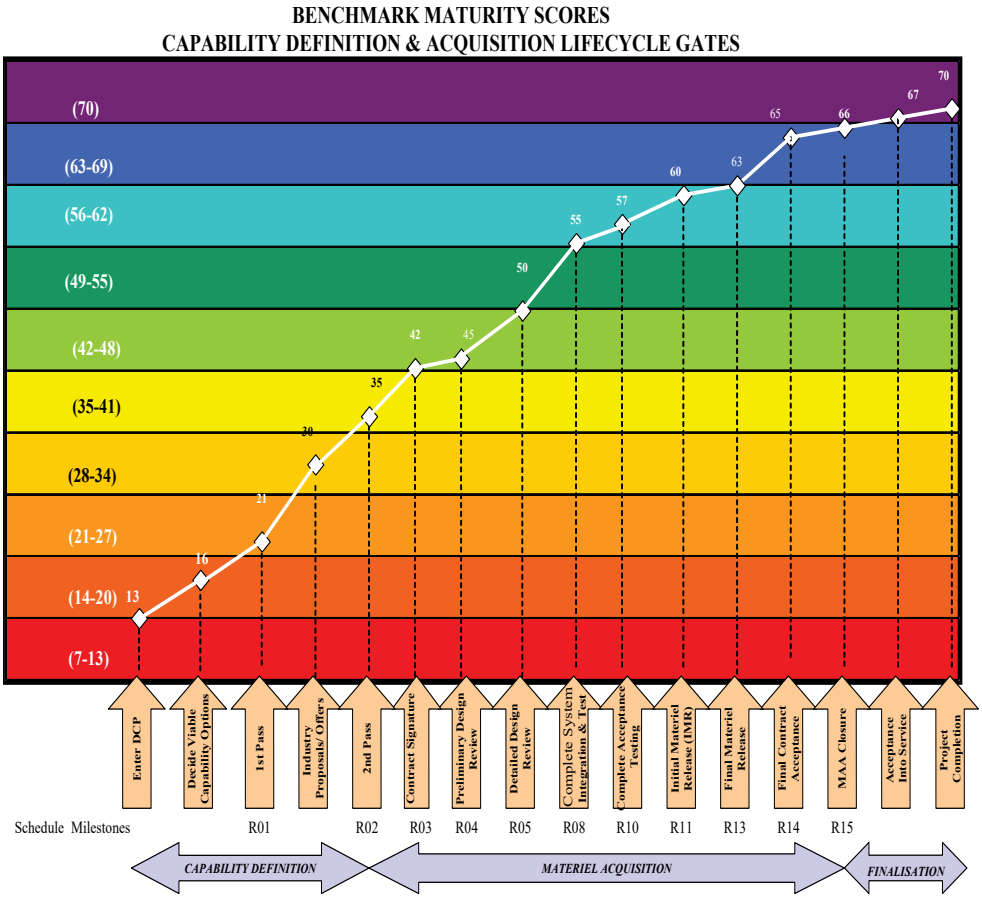
The ACAT level of a project is assessed against six project attributes:

- 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
- 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 1.

Figure 1 - Benchmark maturity scores



The project maturity score comprises a matrix of seven attributes:

- schedule
- cost
- requirement
- technical understanding
- technical difficulty
- commercial
- 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.

Project maturity score matrix

Attributes	Schedule	Cost	Requirements	Technical understanding	Technical difficulty	Commercial	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 is industry performing?	How well prepared is the project to transition from Acquisition to Sustainment?
10	Achieved	Proven	Demonstrated	Fully understood	Proven	All delivered	Operational
9	Confident	Contingency remains	Tested	Transferred	Tested	Delivered	Transitioning
8	Acceptable	Confident	Designed	Arranged	Integrated	Delivering	Integrated
7	In tolerance	Within contingency	Acceptable	Needs understood	Designed	Manages risk	Being procured
6	Manageable	Negotiated	Contracted	Provided for	Planned	As Contracted	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?	Can industry deliver the solution?	Is the impact on the existing operating and support environment understood?
5	Confirmed	Pre- endorsed capability	Endorsed	Understood	Manageable	Offered	Planned
4	Understood	Industry tested	Documented	Feasible	Feasible	Industry proposals	Known
3	Feasible	Reasonable	Solution classes	Coalescing	Building blocks	Strategy developed	Issues understood
2	Drivers known	Plausible	Scenarios identified	Minimal	Conceptual	Possible	Conceivable
1	Speculative	Speculative	Deficiency	Not at all	Not defined	Not yet	Not identified

Project life cycle gates[1]	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 1st Pass options that will be put to Government are decided by Chief CDG	16
1st pass approval	The stage at which 1st 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
2nd pass approval	The stage in the capability definition/development process when 2nd 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[2]	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

[1] 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.

[2] 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: 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	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. Capability is generated by the Fundamental Inputs to Capability.
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	An agreement between Defence and CASG which states in concise terms what services and products

Agreement	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.
Public Governance, Performance and Accountability Act 2013	*The Public Governance, Performance and Accountability Act 2013* came into effect on 1 July 2014 and superseded the *Financial Management and Accountability Act 1997*. 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

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 *2017–18 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 2018. 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
12 December 2018

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 (ANAO) and endorsed by the Joint Committee of Public Accounts and Audit (JCPAA).

Project Status as at 30 June 2018

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 2018.

AIR 87 Phase 2 – ARH Tiger Helicopters

The Armed Reconnaissance Helicopter (ARH Tiger Helicopters) Project has achieved Final Operational Capability (with Caveats) and is no longer reporting in the MPR. In accordance with the 2017-18 MPR Guidelines, projects that have been removed from the MPR but 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. The information below addresses this requirement.

In April 2016, Chief of Army declared Final Operational Capability with nine caveats. The 2016-17 MPR reported two of these caveats had closed. Of the remaining caveats, five more were closed in February 2018 and the final two were closed in September 2018. The table below provides further detail on the caveats.

Description of Caveat	Status
Electronic Warfare Self Protection System. The system exhibited some deficiencies.	**Caveat was closed in July 2017**, as reported in the 2016-17 MPR. The deficiencies were rectified by industry at the end of 2016 at no cost to the Commonwealth.
Identification Friend or Foe System. The system was experiencing technical issues.	**Caveat was closed in July 2017**, as reported in the 2016-17 MPR. These issues have been rectified.

Description of Caveat	Status
Availability and Rate of Effort. A minimum of six from eight aircraft available in each of Army's 161 and 162 squadrons was envisaged. Tiger availability has proven to be closer to four from eight aircraft. A mature Rate of Effort of 7147 hours per year was initially expected. A mature Rate of Effort of 5300 hours is now planned. Tiger workforce issues also contributed to the caveat.	**Caveat was closed in September 2018**. In hindsight, the initial Rate of Effort expectations were unrealistic for both Industry and Defence. Sufficient availability can be generated to meet Defence's directed level of capability, along with Raise, Train, Sustain requirements. While some challenges remain, the system is being actively managed through sustainment mechanisms, and there is no advantage in keeping the caveat open.
Communications and mission planning. Limitations existed with the voice and data communications systems and the Ground Mission Equipment mission planning suite.	**Caveat was closed in September 2018.** Project LAND 9000 ARH Capability Assurance Program will fund the remediation of the radio issues. AIR 9000 Ph2/4/6 Multi-Role Helicopter (Taipan) Project will provide the funding source for the remediation of the mission planning issue, as this will be a common system to support both the Tiger and Taipan platforms.
Missiles. AGM-114M Hellfire missiles are no longer being manufactured. Sufficient stocks were available in the short term, until the replacement missile entered service.	**Caveat was closed in February 2018**. The issue is being actively managed through existing sustainment tracking and reporting mechanisms, and is funded within the existing approved sustainment budget. All integration testing of the replacement missiles – the AGM-114R – has been completed, with authorisation for in-service use granted in August 2018.
Ammunition. Limited stocks were available at Final Operational Capability.	**Caveat was closed in February 2018.** Additional stocks have been procured and delivered. The issue is being actively managed through existing sustainment tracking and reporting mechanisms.
Spare parts and consumables. This caveat related to supply constraints on breakdown spares and consumables.	**Caveat was closed in February 2018**. The issue is being actively managed through existing sustainment tracking and reporting mechanisms, and is funded within the approved sustainment budget.

Description of Caveat	Status
Class IX Fly Away Kits. This caveat related to the spares kits designed to support a troop-level deployment in a field environment for 14 days.	**Caveat was closed in February 2018**. The original spares to support the Fly Away Kits required by Army have been delivered. Additional kits may need to be procured if more than one squadron was to be deployed, and this will be managed through existing sustainment budget and reporting mechanisms.
Support. This caveat related to the constrained Defence and industry engineering capacity, which had the potential to affect capability.	**Caveat was closed in February 2018**. Defence and industry continue to closely manage Tiger engineering priorities. The issue is now being actively managed through existing sustainment tracking and reporting mechanisms.

The Tiger aircraft has reached a level of maturity where it is now meeting and maintaining directed levels of capability.

Significant Events Occurring Post 30 June 2018

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 2018:

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

In third quarter 2018 Government agreed to a Defence proposal to transfer specific scope elements to other F-35A sub-program elements.

The failure of a fuel tube on a United States Marine Corps aircraft in September 2018 led to the first F-35 crash in more than ten years of flying. This resulted in a temporary pause to Australian flight operations and the replacement of the fuel tubes on the two Australian aircraft which utilise the same part.

SEA 4000 Phase 3 - Air Warfare Destroyer Build

The second Air Warfare Destroyer achieved Provisional Acceptance in July 2018 and was commissioned as HMAS *Brisbane* on 27 October 2018.

AIR 7000 Phase 2B – P-8A Poseidon

The P-8A Poseidon completed its Operational Test and Evaluation (OT&E) during the *Rim of the Pacific* Exercise (RIMPAC 2018). As part of this Exercise, the first deployment of weapons by an Australian P-8 Poseidon occurred. The

Project will now complete the OT&E Report, expected to be finalised by the end of 2018.

The Poseidon Training System was also delivered in the first half of 2018, enabling the commencement of Australian-based training of operators and maintainers from the 2nd of July 2018.

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

Initial Operational Capability was expected to be achieved in July 2018. Defence has met the intent for Initial Operational Capability, however, minor deficiencies in some supporting elements prevented the declaration in mid-2018. These included elements of training, facilities and Information and Communication Technology systems. Air Force is currently developing a case for Initial Operational Capability declaration in the near term.

LAND 121 Phase 3B – Overlander Medium/Heavy

Contract Change Proposals were signed for the LAND 121 Phase 3B acquisition contract with Rheinmetall MAN Military Vehicles Australia. These Contract Change Proposals were for the provision of an additional 1,044 vehicles and 872 modules, and Haulmark Trailers Australia for 812 trailers on behalf of the LAND 121 Phase 5B project, and signed on 04 September 2018 and 29 August 2018 respectively.

JP 2048 Phase 4A/4B – LHD Ships

Final Materiel Release has been delayed from December 2018 to October 2019.

LAND 121 Phase 4 - Protected Mobility Vehicle – Light

Two Protected Mobility Vehicle-Light (Hawkei) were successfully deployed to Afghanistan and Iraq, with the eight month deployment concluding on 10 August 2018.

The Reliability Demonstration Test was completed on 19 November 2018, with reliability issues outstanding. The Operator component of the Support System Detailed Design Review was completed in August 2018.

Defence senior management is intensively managing the program to address the outstanding reliability issues. Defence has requested that Thales provides a formal plan to resolve the outstanding reliability issues to inform the decision to commence the Production Reliability Acceptance Test. The achievement of key project milestones is reliant on the resolution of these reliability issues.

SEA 1654 Phase 3 – Replacement Replenishment Ships

The first Auxiliary Oiler Replenishment (AOR) Ship, *Supply*, was launched in Ferrol Spain on 23 November 2018.

The keel laying for the second AOR Ship, *Stalwart*, was achieved on 24 November 2018.

JP 2072 Phase 2B – Battle Comm. Sys. (Land) 2B

Preliminary Design Review for the Release 2, which builds on Release 1 delivered for Initial Operating Capability, was conducted and successfully exited in July 2018. Final Materiel Release and Final Operational Capability will be delayed due to the Commonwealth not providing items of Government Furnished Materiel required by the contractor for integration and testing. The Government Furnished Materiel to be provided is the Enhanced Deployable Local Area Network (eDLAN). The eDLAN program is negotiating potential contract changes.

SEA 1448 Phase 2A & 2B - ANZAC Anti-Ship Missile Defence

Final Materiel Release was achieved in November 2018, and Final Operational Capability is scheduled for achievement in March 2019.

SEA 3036 Phase 1 – Pacific Patrol Boat Replacement

The contract for delivery of infrastructure upgrades in Papua New Guinea was signed on 7 September 2018. The contract is for $5 million with PNG Contractor Fletcher Morobe Constructions Limited

The first Pacific Patrol Boat (HMPNGS *Rabaul*) arrived in Australia on 21 October 2018 for environmentally responsible disposal. The crew is now undergoing conversion training at Austal prior to receiving their new Guardian Class Patrol Boat.

Harbour Acceptance Trials has been completed and the Acceptance Test Reports are being approved by the Project. Chief of Navy declared Initial Materiel Release and Initial Operating Capability with effect 30 November 2018, to coincide with Acceptance and Handover of the first Guardian Class Patrol Boat to Papua New Guinea on 30 November 2018.

JP 9000 Phase 7 - Helicopter Aircrew Training System

The ADF's new Joint Helicopter School has graduated its first course of Australian Navy and Army pilots, aviation warfare officers and helicopter aircrew on 31 August 2018. The second Pilot, Aviation Warfare Officer and Aircrew courses commenced in October 2018.

JP 2072 Phase 2A – Battlespace Communications System

The Final Operational Capability is forecast for December 2018, and is on track for achievement.

SEA 1442 Phase 4 - Maritime Communications Modernisation

The alignment of the SEA 1442 Phase 4 project to the Anzac Mid-life Capability Assurance Program was reflected in an approved update of the Materiel Acquisition Agreement in September 2018. Initial Operational Capability is planned to occur by the first quarter 2020, and Final Operational Capability by the first quarter 2025.

SEA 1439 Phase 4A – Collins Replacement Combat System and SEA 1429 Phase 2 – Replacement Heavyweight Torpedo

Final Materiel Release for the Collins Replacement Combat System and the Heavyweight Torpedo was scheduled for 31 October 2018, however, this did not occur. All technical work was complete in June 2018. This project is now in its closure phase and Final Materiel Release and Final Operating Capability are expected to occur by mid-2019 and the project to be closed by the end of 2019.

JP 2048 Phase 3 – LHD Landing Craft

The LHD Landing Craft sea trials involving carriage of the M1A1 Main Battle Tank were scheduled for the second quarter 2018, however did not proceed due to an ongoing technical assessment being undertaken by Defence.

The sea trials have been re-scheduled to occur during the second/third quarter 2019, during the annual amphibious exercise period where the necessary assets can be made available. Final Operational Capability declaration will occur after the sea trials later in 2019.

Greg Moriarty
Secretary
Department of Defence

11 December 2018

Project Data Summary Sheets

Project Data Summary Sheets

Project Data Summary Sheet[121]

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 2nd Pass Approval	**$13,264.1**
Total Approved Budget (Current)	**$15,504.0m**
2017-18 Budget	**$1,128.1m**
Project Stage	**Integration and Test**
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The AIR 6000 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 72 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. Also procuring the F-35A JSF through US Foreign Military Sales (FMS) agreements are Japan, Israel and the Republic of Korea.

1.2 Current Status

Cost Performance
In-year
30 June 2018 – Year end variance of $58.2m less than planned was as a result of various factors. Aircraft payment delays (due to later than expected invoicing from Prime Contractors, not delivery delay) and foreign exchange loss. Non-Aircraft contract variations including: replan, invoicing timing and value variations and slippage in contracts for Reprogramming Laboratory, Autonomic Logistics Information System, Support and Test Equipment, Maintenance Facilities, Training Equipment, Initial US Training and Information and Communication Technology (ICT) integration replan. Higher than planned expenditure was achieved against Weapons Foreign Military Sales due to increased disbursements and a higher than expected payment in June 2018.

Project Financial Assurance Statement
In consideration of risks disclosed at Section 5.1, as at 30 June 2018, Project AIR 6000 Phase 2A/2B has reviewed the approved scope and budget for those elements required to be delivered by the project. Defence considers, there is sufficient budget, including contingency, remaining for the project to deliver the agreed scope. **The project will address cost risks in the annual update to Government in October 2018.**

Contingency Statement
The project has not applied contingency in the financial year.

Schedule Performance
Australia's first two aircraft, **from production Lot 6**, were delivered in 2014, as part of Materiel Release 1 (MR1) commencement of Pilot training in the US. **In the first six months of 2018, four Lot 10 aircraft were delivered.**
Facilities construction at RAAF Base Williamtown is **on schedule despite some minor delays. The land acquisition process has delayed the ability for the full length of the runway extension to be operational. Deferred works at Williamtown and Forward Operating Bases are in the design phase. Initial Operating Capability (IOC) remains on track as planned for 2020.**

121 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.

Construction work at RAAF Base Tindal is well underway and tracking ahead of schedule. Mission Systems Block 2B software Fleet Release was achieved in July 15 (for US Marine Corps IOC Declaration).
Mission Systems Block 3i software development and test was completed in May 16, with the F-35 Joint Program Office (JPO) declaring the final increment of the Block 3i software suitable for United States Air Force (USAF) IOC requirements, after some stability issues experienced in the test phase had been resolved. The first two Australian aircraft delivered in November 14 received the initial increment of the Block 3i software (released in September 14) which was suitable for early pilot training. The two Australian aircraft received the latest (final) Block 3i software in September 16.
Mission Systems Block 3F software, the final software release under the System Development and Demonstration (SDD) phase of the program, delivered the final increment of warfighting capability and is the requirement for Australian IOC, which is planned by December 20. Block 3F development is now complete. Australia's Lot 10 aircraft are being delivered in the Block 3F configuration.
The Australian F-35 sustainment solution is still maturing. 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 16 the US Government assigned the regional maintenance and repair of 64 of 65 Tier 1 components to four Australian companies. Sovereign sustainment requirements have been defined and JSF Division is working closely with the JPO and industry on the planning and execution of these requirements.
The F-35 Partner Reprogramming Lab contract signature was awarded on 9 April 15, with risk to Mission Data File delivery in time for IOC being monitored.
The first eight Australian F-35A pilots have completed training to Instructor Qualification standard and four additional Australian pilots have commenced F-35A training, with one more pilot scheduled to commence from October 18. The first cadre of aircraft maintainers have completed theory training and are now undergoing On The Job Training with the Lockheed Martin workforce at Luke Air Force Base.
First aircraft arrival in Australia is on schedule, with the first two aircraft to be ferried to Australia in December 18 to support the start of Australian Verification and Validation (V&V) activities in early 2019. Aircraft 7-72 are scheduled to be delivered progressively between July 2018 and Final Operating Capability (FOC) in December 23.

Materiel Capability Delivery Performance
The capability of the F-35A JSF Air System is now reaching a level of maturity where the project is confident it will be able to meet the agreed threshold level of capability required for IOC in 2020. Risks to achieving IOC remain and are being managed closely. These risks are centred around the enabling systems and capabilities including: sustainment establishment, facilities, information systems, reprogramming, and training systems. V&V activities in 2019-20 will seek to retire or re-characterise these risks. Risks remain in project elements required to achieve FOC in 2023. While Defence has extant maritime strike capabilities, the project is investigating options to address the F-35A specific maritime strike capability.

Note

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

1.3 Project Context

Background
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 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:

- 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 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 Dec 06 to allow entry into the next stage of the JSF Program.
- AIR 6000 Phase 2A/2B Stage 1 Approval in November 2009 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 Apr 14 to acquire an additional 58 CTOL F-35A JSF aircraft and enabling elements. The combined acquisition of 72 aircraft will achieve FOC in 2023 comprising of three operational squadrons of fifth generation F-35A JSF to replace the F/A-18A/B Hornet aircraft.

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 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 JPO's 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 will require 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 Phase 2A/2B will initially be acquired under separate annual contracts until 2019

deliveries (LRIP 11). Subsequent procurements, subject to Government agreement, will leverage off a Block Buy initiative available to some nations spanning production Lots 12 to 14, and a Multi-Year Procurement strategy for subsequent production lots. For Lots 12 to 14, Australia's commitment to the single lots will continue 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.

Major Risks and Issues

The JSF is a large and complex program and many challenges remain. As a MoU Partner Australia does have a role overcoming technical challenges, however these are primarily a US responsibility to resolve.

The major risks facing the AIR 6000 Phase 2A/2B Project are:

- Shortfalls in integrating the F-35A capability into the Australian Defence Force (ADF) systems may result in poor interoperability.
- Late establishment and insufficient functionality of the required Information, Communications and Technology (ICT) infrastructure, systems and connectivity, including the Autonomic Logistics Information System (ALIS) could impact stand up of the F-35A capability.
- Delays in releasability of F-35 technology and information, driven by US policy, may impact the timely, efficient and effective integration of the F-35A Air System into the Australian Defence Force.
- F-35A capability states may be affected by requirements being deferred or cancelled, hardware or software deficiencies, or modifications and retrofits not being completed on schedule.
- Sustainment Performance, Cost & Schedule may be affected by the ongoing evolution of the Global Support Solution (GSS).
- Timeliness and scope of F-35 reprogramming enterprise may impact capability delivery.
- Procurement may be affected by acquisition funding issues due to cost increases and budget programming difficulties leading to an impact on IOC and FOC scope and schedule.
- Australian Industry participation in the global F-35 program may fail to yield expected economic benefits.
- **Workforce constraints, including the need for higher level security clearances, may impact project cost and schedule.**
- The RAAF capability declarations may be affected by an Australian F-35A Training System not established in time, and without the required capability to support RAAF training of personnel.

Air Force is considering options for maritime strike capability across multiple platforms and will advise Government in October 18.

The issues facing the AIR 6000 Phase 2A/2B Project are:

- **A delay in 'small group try outs' for some maintenance activities in Australia due to a delay in equipment installation.**
- **The F-35 ejection system promotes greater risk than other ejection systems.**
- **Continuous Capability Development and Delivery (C2D2) increases Australia's total development costs.**
- **Delays in software upgrades have impacted Verification and Validation events.**
- **The timeline for "Follow on Modernisation" has not met Air Force's expectation.**
- **Communications capability delivery schedule has not me Air Force's expectation.**
- **Delivery of F-35A Enterprise Architecture Management has been impeded by the primary software application.**
- **Delayed provision of contracted Training workforce has affected milestone delivery.**

Other Current Sub-Projects

AIR JSF SDD – Participation in the JSF System Development and Demonstration (SDD) Program: The contribution to the SDD Program is in two parts, a cash component of SDD funding of US$144m, and a non-financial component of US$6m with the Defence Science and Technology Group (DSTG) conducting a Pacific Rim Command, Control, Communication, Computing, Intelligence, Surveillance, and Reconnaissance study. All AIR JSF SDD financial milestones have been completed. Completion of the US SDD Phase is expected by mid-2018, although administrative close-out of SDD contracts will occur much later.

AIR 6000 Phase 5 - Air Combat Capability Air-to-Air Weapons: This project was approved by Government in Mar 16 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 18 and will acquire the reserve stocks of weapons for the F-35 Joint Strike Fighter (JSF), including new countermeasures and ammunition but excluding air-to-air missiles. AIR 6000 Phase 2A/2B will identify the weapons to be acquired based on the weapons integrated onto the F-35A platform.

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**
Jul 10	Price Indexation		351.0	**4**
Jun 18	Exchange Variation		**1,897.3**	
Jun 18	**Total Budget**		**15,504.0**	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – US Government – LRIP 10 Production	**(361.5)**		5
	Contract Expenditure – US Government – LRIP 6 Production	**(257.2)**		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 – Reprogramming Laboratory Phase 1	**(65.3)**		5
	Contract Expenditure – US Government – LRIP 10 Propulsion	**(55.9)**		5
	Contract Expenditure – US Government – LRIP 6 Propulsion	**(49.6)**		5
	Contract Expenditure – US Government – LRIP 8 – Production and Non-Annualised Sustainment	**(41.9)**		5
	Contract Expenditure – US Government – LRIP 11 – Production	**(37.7)**		5
	Contract Expenditure – US Government – FMS Case AT-D-YAF, **AT-P-AMN** (Weapons)	**(15.0)**		5
	Contract Expenditure – US Government - FY 17 Air Vehicle Initial Spare	**(3.0)**		5
	Contract Expenditure – US Government - LRIP 10 Non-Annualised Sustainment Contract	**(1.1)**		5
	Other Contract Payments / Internal Expenses	**(337.1)**		**7**
			(1,599.5)	
FY to Jun 18	Contract Expenditure – US Government – LRIP 10 Production	**(415.7)**		5
	Contract Expenditure – US Government – LRIP 11 – Production	**(218.6)**		5
	Contract Expenditure – LRIP 10 Propulsion	**(75.3)**		5

	Contract Expenditure – US Government - Block Buy Contract (BBC)	(60.1)		6
	Contract Expenditure – US Government – LRIP 8 – Production and Non-Annualised Sustainment	(29.7)		5
	Contract Expenditure – US Government – Reprogramming Laboratory Phase 1	(26.1)		5
	Contract Expenditure – US Government – FMS Cases AT-D-YAF, AT-P-AMN (Weapons)	(21.8)		5
	Contract Expenditure – US Government - FY 17 Air Vehicle Initial Spare	(19.8)		5
	Contract Expenditure – US Government - FY10 Non-Annualised Sustainment Contract	(19.3)		5
	Contract Expenditure – US Government – LRIP 11 – Propulsion	(16.5)		5
	Contract Expenditure – US Government – LRIP 6 Production	(0.9)		5
	Other Contract Payments / Internal Expenses	(166.1)		8
			(1,069.9)	
Jun 18	**Total Expenditure**		(2,669.4)	
Jun 18	**Remaining Budget**		(12,834.6)	

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 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 Lot 12 Long Lead and Economic Order Quantity (EOQ)
7	Other expenditure for the period prior to July 17 is associated with Support Systems ($184.6m) which comprises of software capability for the reprogramming lab, facilities, support & test equipment, information communications technology and ALIS; mission systems ($67.5m) comprising of FMS cases, weapons & aircraft; Project Office services ($48.8m) comprising of Project Office services (travel, contract support services) & contract administration in relation to the Joint Project Office; NACC Operating Expenditure ($35.0m) 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 17 to June 18 is associated with support systems ($97.4m) comprising of software capability for the reprogramming lab, facilities, support and test equipment, information communications technology and the ALIS; Project Office services ($22.4m) comprising of Project Office services (travel, contract support services) and contract administration in relation to the Joint Project Office; mission systems ($21.8m) comprising of FMS cases, weapons and aircraft; NACC operating expenditure ($20.5m) comprising of Project Office expenses, initial support and maintenance, US pilot training and the NACC ISP Grants Program ($4.1m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
1,148.2	1,113.3	1,128.1	PBS – PAES: The acquisition is as forecast in the Defence PBS 2017-18. The variance is due to the FOREX price basis adjustment down from PBS 2017-18. PAES – Final Plan: The acquisition is as now forecast in PBS 2018-19. The variation is due to the FOREX price basis adjustment from PAES to PBS 2018-19.
Variance $m	(34.9)	14.8	Total Variance ($m): (20.1)
Variance %	(3.0)	1.3	Total Variance (%): (1.7)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(11.8)	Australian Industry	Year-end variance of ($58.2m) was as a result of various factors: aircraft payment delays (not delivery delay) and FOREX loss. Non-aircraft contract variations including: replan, invoicing timing and value variations and slippage in contracts for Reprogramming Laboratory, ALIS, support and test equipment, maintenance facilities, training equipment, initial US training and ICT integration replan. Higher than planned expenditure against weapons FMS activity.
		(51.2)	Foreign Industry	
			Early Processes	
		(4.0)	Defence Processes	
		8.8	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
1,128.1	1,069.9	(58.2)	**Total Variance**	
		(5.2)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $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	575.3	Various	MoU	2, 12, 13
US Government (LRIP 6 Production)	May 11	22.0	272.6	Fixed Price Incentive	USG Contract	3, 12, 13
US Government (LRIP 6 Propulsion)	Aug 11	5.8	50.9	Fixed Price Incentive	USG Contract	4,12, 13
US Government (LRIP 10 Production)	Dec 14	79.2	890.8	Fixed Price Incentive	USG Contract	5, 12, 13
US Government (LRIP 10 Propulsion)	Mar 15	13.4	145.1	Fixed Price Incentive	USG Contract	6, 12, 13
US Government (Reprogramming Laboratory Phase 1)	Mar 15	119.0	128.0	Fixed Price Incentive	USG Contract	7, 12, 13
US Government (LRIP 8 Production and Non-Annualised Sustainment)	Jun 15	99.9	109.1	Fixed Price Incentive	USG Contract	8, 12, 13
US Government (LRIP 11 Production)	Dec 15	88.2	556.0	Fixed Price Incentive	USG Contract	9, 12, 13
US Government (AT-D-YAF)	Jun 16	111.9	102.5	Reimbursement	FMS	12, 13
US Government (LRIP 10 Non-Annualised Sustainment Contract)	Jun 16	31.8	165.3	Various	USG Contract	12, 13, 16
US Government (AT-P-AMN)	Jul 16	132.3	132.3	Reimbursement	FMS	12, 13
US Government (LRIP 11 Propulsion)	Jul 16	14.2	155.9	Fixed Price Incentive	USG Contract	12, 13, 15
US Government (Block Buy Contract)	Feb 17	236.3	459.7	Fixed Price Incentive	USG Contract	10, 12, 13

US Government (FY17 Air Vehicle Spares & ACURL Spares)	Mar 17	114.4	141.9	Fixed Price Incentive	USG Contract	11, 12, 13

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 sparing 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**,** form**ing** the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'**.** **This contract is near Full Funding award with the increase in contract value a result of the staged procurement and provision of funding for the F-35 production line to build the aircraft.**
10	**The Block Buy Contract encompasses** Long Lead items **and** Economic Order Quantity (EOQ) parts procurement for the planned Block Buy of aircraft spanning Lots 12**, 13 and** 14. **This contract was previously reported as Lot 12 Long Lead and EOQ. Australia will commit to aircraft purchases on an annual basis via this contract, subject to annual approvals by Government.**
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 18 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates. This includes adjustments for indexation (where applicable). **The initial contract for LRIP 11 was signed July 16 whereby materiel was procured under contract N00019-16-C-0001 as per the AAC S23 (Folder 12.03). Once the LRIP 11 contract was established, this contract number was updated to the new contract number of N00019-17-C-0020.**
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 Non-Annualised (NA) Sustainment contract consists of one-time tasks and infrastructure stand up activities. The contract undergoes discrete modifications for each individual good and/or service being procured which in turn dictates the 'type' of contract. For the LRIP 10NA Sustainment contract, the following contract types were included within the various modifications: Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF) and Fixed Price Incentive (FPI).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 18		
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	**N/A**	**N/A**	Procurement of long lead supply items **for Lots 12 and 13** and economic order quantity items **for Lots 12, 13 and 14. Leading** to Full Funding contract award in 2018 for procurement of 15 F-35A aircraft under Lot 12. **A further 15 aircraft are scheduled for Full Funding award for Lot 13 in 2019 and likewise for Lot 14 in 2020.**	**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 (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**	

Major equipment received and quantities to 30 June 18
Six F-35A aircraft delivered to support commencement of training in the USA.

Notes	
1	No equipment delivered as part of this contract.
2	**This contract was 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	Design refinements following PDR failed to achieve the weight savings initially expected and considerable additional design effort was required. The original planned CTOL Critical Design Review (CDR), planned for April 04, was re-scheduled to February 06 after the redesign effort was completed, which 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/Forecast	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
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	Apr 19	28	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	The 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) **currently forecast** to be accepted **in April** 19**. This will** achieve a revised Australian IOC by December 20.
8	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.

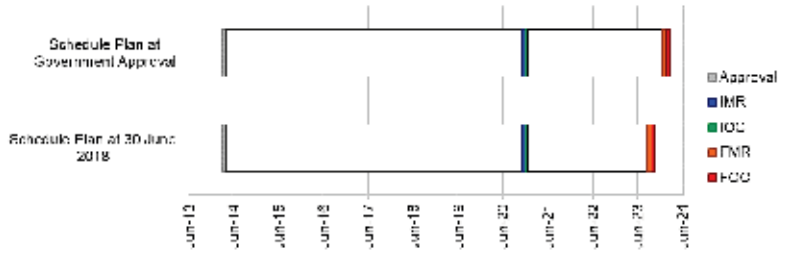
3.3 Progress Toward Materiel Release and Operational Capability Milestones

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 2018



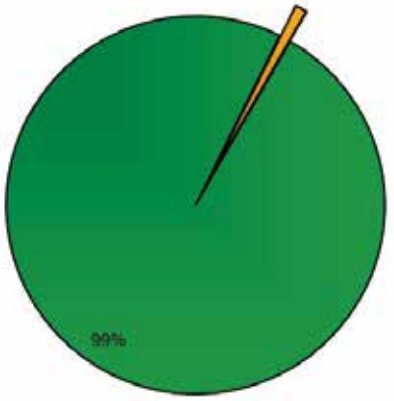
Note

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:
The Department is considering options to deliver the Maritime Strike Capability in a more holistic manner. This may mean the original Maritime Strike scope may be delivered under a different project.

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)	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; this includes the aircraft temporarily located at Luke Air Force Base in Arizona for initial pilot training in the US. 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 2020.	Not yet achieved

Final Materiel Release (FMR)	Delivery of final 39 aircraft between 2021 and 2023, resulting in all 72 F-35A aircraft in Australia. Block 4 software and hardware delivered to provide FOC capability. 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

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.
There is a chance that because 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 JPO and key stakeholders to ensure 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.
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 FIC will not be in place to create a battleworthy system due to a failure to integrate F-35A enterprise systems and existing 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 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. The Department is considering options to deliver the Maritime Strike Capability in a more holistic manner. This may mean the original Maritime Strike scope, may be delivered under a different project.
There is a chance that the Global Support Solution (GSS) does not meet Australia's sustainment needs, leading to degraded aircraft availability and capability.	The US has released strategies for Australia's involvement in aircraft and engine depots; these are being planned and executed. Continued close engagement is required with the JPO to understand the developing GSS). Australia has defined an Australian F-35 sustainment solution and focus is now on implementing this and adjusting as GSS evolves. The design of the Australian F-35 sustainment solution needs to be flexible and reflective of a progressive capability build up strategy.
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 ACURL Phase 1 is an interim and limited capability, ACURL Phase 2 requirements are being developed to meet full capability needs at FOC, including the need to support multiple aircraft configurations (ie with Follow On Modernisation (FOM) in mind).

There is a chance that the establishment support and operation of the capability will be affected by unaffordability or budget programming leading to an impact on capability, scope and schedule.	Conduct on-going engagement of the JPO and major project suppliers to have them provide better cost data to allow the F-35 project to meet budgeting and programming expectations. To identify cost pressures and engage with the Capability Manager (CM) to prioritise requirements to deliver project capability within the approved project budget. Where necessary, develop options for CM consideration to achieve project affordability by aligning project expenditure with the Defence integrated investment program capacity in any specific year.
There is a chance that Australian Industry participation in the global F-35 Program will fail to yield expected economic benefits.	Coordinated activity with Defence Industry Division including close working relationship with the Centre for Defence Industry Capability, utilisation of the NACC grant program that provides financial support for industry capacity and capability growth, and JSF Division advocacy on behalf of Australian Industry (with JPO, US Prime Contractors and Original Equipment Manufacturers).
There is a chance that the F-35A capability realisation will be affected by the inability to establish and maintain the required workforce with appropriate competencies, security clearances and Australian industry participation leading to an impact on acceptable cost, schedule and capacity.	Provision of supplemental resources to develop and fully support JSF project management activities. Consideration of workforce needs in the development and delivery of the Sovereign Sustainment Requirements. Maintain an effective integrated Workforce Plan that considers the evolving F-35A workforce requirements, and engage regularly with military and APS workforce planning organisations to ensure the Workforce Plan priorities are enacted.
There is a chance that enterprise delivered aircrew training devices are inadequate for the full range of individual aircrew training in the medium term, and that the long term the enterprise delivered devices will never meet the need of integrated training for a technically evolving, networked Air Force.	The JSF Training System is still being developed. Work continues with stakeholders to understand the Training System to ensure expectations are clearly understood. Additional people resources have been engaged to deliver the Australian Training System and associated support contracts. Defence representation at critical and essential JPO meetings, including Periodic Technical Interchange Meetings with Lockheed Martin and JPO.
There is a chance that delays in releasability of F-35 technology and information, driven by US policy, may impact the timely, efficient and effective integration of the F-35A Air System into the Australian Defence Force.	Ongoing engagement with the US Government and industry, the Joint Program Office and JSF Stakeholders including at Ministerial level where necessary, to identify and obtain the necessary F-35 technology and information needed to enable effective integration of the F-35A Air System into the Australian Defence Force.
Emergent Risks (risk not previously identified but has emerged during 2017-2018)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
The Maintenance Weapon Loading Small Group Try Outs (MX SGTO) have been delayed as a result of schedule slip of the Weapons Load Trainer (WLT) installation.	Pursuance of contractor contractual installation date. Joint Program Office will determine way forward in consultation with Australia and resolve accordingly.
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 is expected towards the end of 2018.
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.	The Follow On Modernisation Sub-Project monitors cost estimate information out of the JPO to stay abreast of any potential cost increases, identifying any cost pressures and keeping Air Force abreast of the impact so they can make an informed decision of the way forward if required.
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 JPO, Lockheed Martin and their stakeholders is being conducted, combined with consistent communication with Air Force to manage expectations, obtain guidance and assess impacts.
The timeframe for the Follow On Modernisation upgrades have not delivered an F-35A capability that satisfies Air Force's FOC requirements/timeframe.	Joint Strike Fighter Division is working with Air Force to determine a variety of alternative options to deliver the required FOC capabilities.
The delivery schedule for the BLOS communications capability does not satisfy Air Force's FOC requirements/timeframe.	Joint Strike Fighter Division is working with Air Force to determine an alternative option to deliver the required FOC capability.

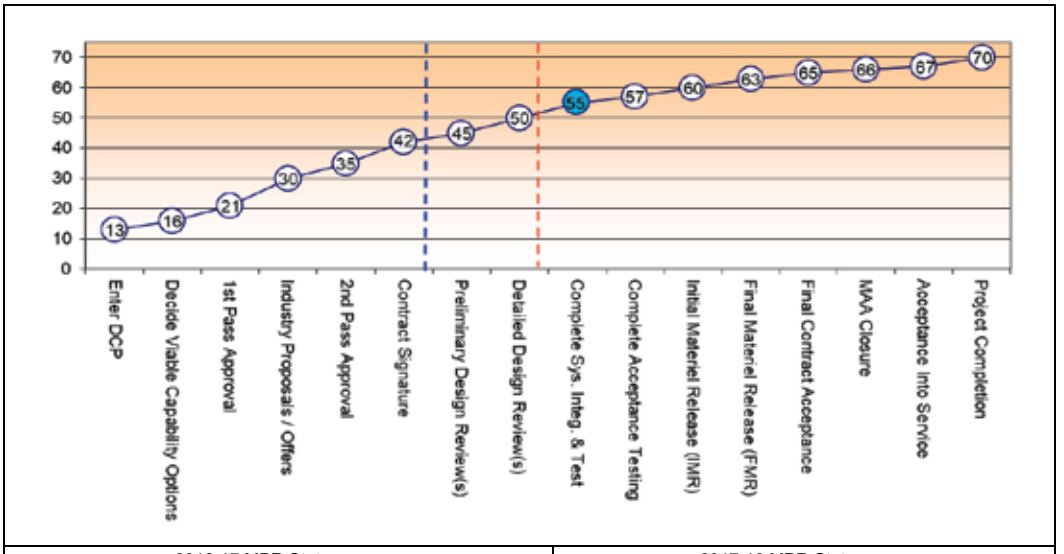
Delivery of the F-35A Enterprise Architecture Management has been affected by the level of support available by for the primary software application.	**JSF Division has prioritised engagement and resolution of this issue with Directorate Technical Regulatory Architecture Group and Commonwealth Information Officer Group.**
Delayed provision of Interim Contractor Support Training Workforce has affected capability milestone delivery	**Joint Strike Fighter Division is actively working with Lockheed Martin and the JPO to identify alternative delivery solutions for the stand-up of the Integrated Training Centre, first aircraft arrival and Verification and Validation preparation.**

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							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Integration and Testing	Project Status	7	7	7	7	8	8	7	51
	Explanation	• **Schedule**: Recent Project Management Baseline initiatives have provided improved Milestone Definitions (primary and secondary milestones) and a more robust Integrated Master Schedule, where critical paths can be better analysed and managed. The project now has a reliable suite of tools that provide improved confidence in schedule forecasts that aids in better decision making. • **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 Block 4 capabilities are in early development.** • **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 Block 4 capabilities are in early 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 is still being developed, 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 to better understand operating and support costs as the capability matures.						



2016-17 MPR Status - - - -	2017-18 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	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

Section 8 – Project Line Management

8.1 Project Line Management in 2017-2018

Position	Name
Division Head	AVM Leigh Gordon
Branch Head	AIRCDRE Terry Saunder **(to Dec 17)** **AIRCDRE Damien Keddie (Dec 17–current)**
Project Director	GPCAPT Guy Adams
Project Director	Mr Stephen McDonald
Project Director	GPCAPT Neil Pearson **(to Nov 17)** **GPCAPT Steve Green (Nov 17–current)**

Project Data Summary Sheet[122]

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 2nd Pass Approval	**$7,207.4m**
Total Approved Budget (Current)	**$9,089.3m**
2017-18 Budget	**$522.8m**
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

This project was removed from the Projects of Concern list on 1 February 2018.

Cost Performance

In-year

The AWD Program was underspent by $56.5m against the approved budget in FY 2017-18. The main variation of $35.4m is reduced Foreign Military Sales (FMS) disbursements against the AEGIS case. Overall costs associated with the Alliance Based Target Incentive Agreement (ABTIA) were above budget by $18m predominantly due to the deferral of scheduled repayment of the ABTIA advance accounts equalling $22.5m and remaining variance of $4.5m due to Raytheon savings in the management of the support functions.

The Platform Systems Design Contract (PSD) budget was underspent by $13.2m due to the achievement of milestones being delayed to the latter half of 2018.

The Program Management Office (PMO) budget was underspent by $25.9m of which $12.9m was attributed to various contract and procurement delays (insurance premiums, support for DDG SPO, warehousing, outfit allowance and spares)and a number of risks with funds allocated that did not materialise, totalling $13m.

Project Financial Assurance Statement

Notwithstanding the issues disclosed at Section 5.2, as at 30 June 2018, 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

[122] 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.

- 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. The post-Reform contracted delivery dates are:

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

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

Since July **2017** the following major events have occurred:

- **July 2017 – Ship 3 Hull Integration completed**
- **September 2017 – Initial Materiel Release achieved**
- **March 2018 – Ship 2 Category 5 Sea Acceptance Trials commenced**

IOC is forecast to be achieved in December 2018 (36 months behind schedule).

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**. Decisions made by the program in conjunction with the Capability Manager will **determine how this capability will be delivered in the future.**

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 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.

The Departments of Finance and Defence have 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.

The SMS contract was signed on 5 December 2015 and is a subcontract under ASC AWD Shipbuilder Pty Ltd.

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.

Ship 1 was Provisionally Accepted by the Department of Defence on 16 June 2017 **and Initial Materiel Release was achieved on 18 September 2017.**

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.

Uniqueness

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.

The AWDs are being delivered through an Alliance based contract arrangement involving ASC AWD Shipbuilder, Raytheon Australia, and the Commonwealth, represented by Defence.

Contractual Framework

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:

- 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 systems. 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.

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.

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.

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.

Major Risks and Issues

The major challenges the project faces are:

- **Completing delivery of FMS elements and integration of the Hobart Class Combat System; and**
- **Ensuring certification of equipment to allow acceptance of the capability.**

Other Current Sub-Projects

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.

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.

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 are planned to be done post-ship delivery, with no impact to SEA 4000 Phase 3 schedule.

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			
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 18	Exchange Variation		**(380.9)**	
Jun 18	**Total Budget**		**9,089.3**	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – AWD Alliance	**(5231.6)**		

	Contract Expenditure – US Government	(1,122.7)		
	Contract Expenditure – Navantia	(426.0)		
	Contract Expenditure – NATO Consortium	(72.4)		
	Other Contract Payments / Internal Expenses	(267.5)		4
			(7,120.2)	
FY to Jun 18	Contract Expenditure – AWD Alliance	(371.9)		
	Contract Expenditure – US Government	(49.6)		
	Contract Expenditure – Navantia	(11.3)		
	Other Contract Payments / Internal Expenses	(33.4)		4
			(466.2)	
Jun 18	**Total Expenditure**		(7,586.4)	
Jun 18	**Remaining Budget**		1,502.9	

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 expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts. **Figures are reported in cash terms.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
682.6	520.2	522.8	PBS-PAES: **The variation is due to cost savings against the Alliance Based Target Incentive Agreement (ABTIA) as a result of Navantia being inserted into the Shipyard. This is followed by closure of unrealised formal risks and issues after the delivery of Ship 1 and further savings against the ABTIA indexation estimate budget, which has been reduced to better reflect expected movements in ABS indices.** PAES-Final Plan: Variance is due to **2017-18** MYEFO, **2018-19** Pre-ERC **& 2018-19 PBS** Forex Updates.
Variance $m	(162.4)	2.6	Total Variance ($m): (159.8)
Variance %	(23.8)	0.5	Total Variance (%): (23.4)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		18.4	Australian Industry	**The AWD underspend for Financial Year 2017-18 is $56.5m. See section 1.2 for details.**
		(13.2)	Foreign Industry	
			Early Processes	
		(26.2)	Defence Processes	
		(35.5)	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
522.8	466.2	(56.5)	**Total Variance**	
		(10.8)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
US Government	Oct 05	842.7	1,094.7	FMS	FMS	1, 2
AWD Alliance	Oct 07	4,323.1	6,938.3	Variable with Pain/Gain Share	Alliance	3
Navantia	Oct 07	373.6	584.4	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. There will be further amendments to the FMS Case to cover additional equipment and services for the project. The Price at Signature excludes $167.5m spent in previous phases of the project. The Price at **30 June 2018** 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 2018** is based on actual expenditure to **30 June 2018** 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 2018**) 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 18		
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 18

Ship 01, HMAS *Hobart*, was provisionally accepted by Defence in June 2017. 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
	Ship 3 – Start Combat System Light Off	Jun 16	Sep 18	Sep 18	27	3, 4
Acceptance	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
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Jun 19	Jul 19	29	3, 4
	Ship 3 – Provisional Acceptance (Materiel Release 3)	Jun 17	Dec 19	Dec 19	30	3, 4

Notes

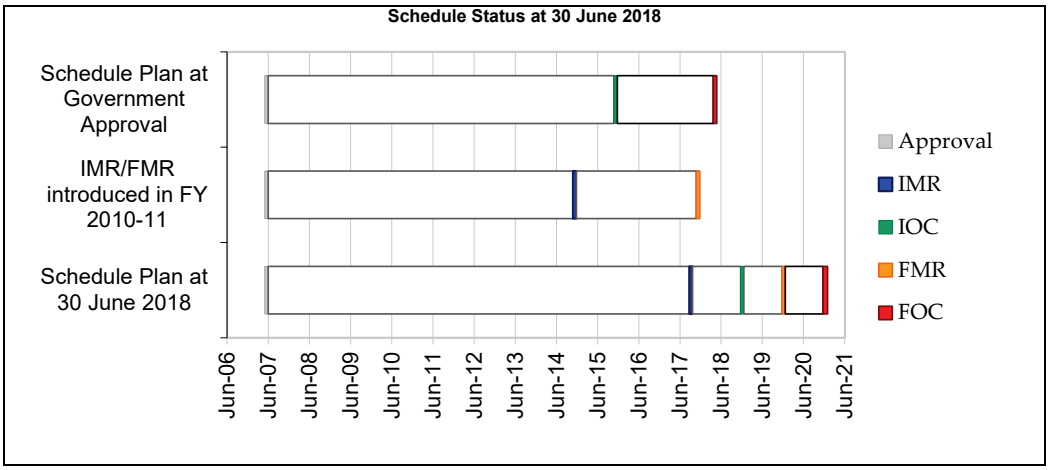
1	Complete Hull Integration was achieved when the last erection joint was completed and has been structurally inspected and accepted.
2	Start Combat System Light Off verified the readiness of the first set of installed combat system equipment for CAT 4 testing.
3	In 2010 difficulties were encountered 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	Provisional Acceptance was achieved on 16 June 2017, followed by Initial Materiel Release (IMR) in September 2017.

3.3 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	Jan 20	25	1
Final Operational Capability (FOC)	May 18	Jan 21	32	1, 2

Notes

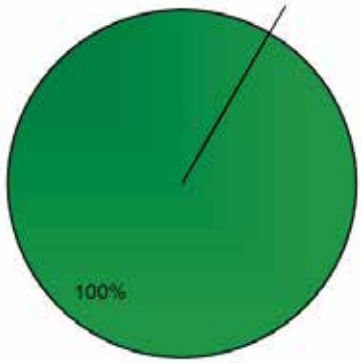
1	The IMR, FMR and FOC dates have been reviewed and have been approved with the release of a revised Materiel Acquisition Agreement 2.0 in March 2018. Variances are directly attributable to the revised AWD delivery dates that were agreed as a result of the AWD reform strategy.
2	FOC is scheduled 12 months after FMR.



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 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:** 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)	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.**
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 **January 2020.**	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. Integration of the *Hobart* Class Combat System. Key Risks: • Sonar – the software development and integration.	**Integrated Sonar testing was conducted in conjunction with DSTG during Ship 2 CAT 5 sea trials in early 2018. The comparison of the trial output data with modelling and analysis data will establish whether the integrated sonar requirements have been met. A way ahead is expected to be available by Q1 2019.**
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. **As Ship 1 has successfully achieved Provisional Acceptance, the risk of missing objective quality evidence has not eventuated, and has been retired.** All Safety certification required under FMS has been delivered to Alliance, no outstanding data. **The small number of remaining risks should be retired when Ship 2 achieves IOR, scheduled for October 2018.**
3. Subcontractor Performance: Subcontractor performance may result in poor quality product, delays or changed requirements.	**This risk is retired. Subcontractor performance has been managed and equipment testing has been successful.**
4. Support System: current data available to the Alliance and/or the Commonwealth may not be mature enough to achieve an optimised support system (maturity of Life Cycle Cost data, loss of project data that supports Through Life Support).	**This risk has been transferred to sustainment. All support system products have been delivered, and the transfer of data has improved and is being managed by the Alliance.**
5. Inadequate Configuration Management impact on Ship Acceptance.	**This risk has been retired. Configuration Management is now the responsibility of DDG SPO.**
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

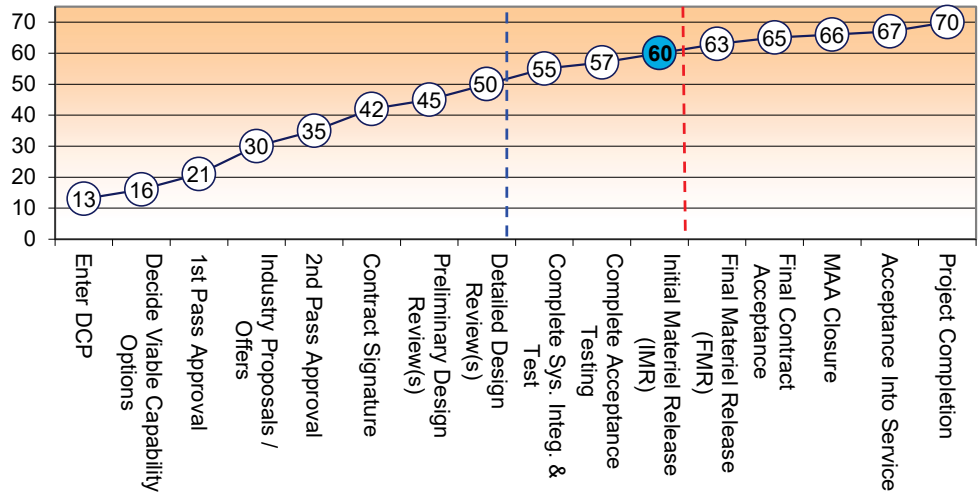
Description	Remedial Action
1. The delivery of FMS elements of the AWD supplies may not be possible, or may be delayed or compromised in integrity, due to the budget for FMS Engineering and Technical Assistance (ETA) not being sufficient.	**Addition of funds to the Foreign Military Sales case has reduced the cost issue, and the issue will be reviewed after Ship 1 CSSQTs in Q4 2018.**
2. Change Management: Change introduced to the existing platform design as a result of: • Legislative or regulatory requirements, • Safety requirements, • Equipment obsolescence, • Errors in the original design, and	A Design Chill was implemented in 2011 to reduce the level of change rolling into the production baseline. Robust mechanisms to control **obsolescence and** change **authorisation** have been established within the Alliance and Program Office. **Sustainment budgets now controlled by the DDG SPO.**

• Interrelated projects (e.g. AIR9000) 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.	AWD Reform long term arrangements embed the designer on-site in order to reduce the change management overhead. This issue has been partially mitigated as all known changes have been assessed and treated. **Legislative change is managed through approved contract changes and impact of the issue is reduced as the program nears completion.**
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	8	9	8	9	61
	Explanation	• **Schedule: Reflects that the project has achieved Initial Materiel Release and is confident of achieving Final Materiel Release on schedule.** • **Cost: Reflects that the project is on track to deliver within the approved budget with remaining contingency.** • **Requirement:** Reflects **that the first ship has been accepted by the Commonwealth and has commenced Naval Operational Test and Evaluation. The second ship has conducted Category 5 Sea Trials and is on track for Provisional Acceptance in July 2018.**							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	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**
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 in 2017-18

Position	Name
Division Head	Mr Patrick Fitzpatrick (Acting Feb 2017**– Aug 2017)** **RADM Anthony Dalton (Aug 2017 – current)**
Program Manager	CDRE Craig Bourke, RAN
Deputy Program Manager	Mr Greg McPherson

Project Data Summary Sheet[123]

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 2nd Pass Approval	**$3,577.7m**
Total Approved Budget (Current)	**$5,212.0m**
2017-18 Budget	**$546.0m**
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 overspend for this financial year, achieving** $**705.1**m at **30 June 18** against a planned in-year budget of $**546.0**m, a variance of **$159.1m** or **29.1** per cent. This variance is primarily due to **bringing forward Aircraft Payments from FY18/19, to a value of $150.0m and FOREX variations.**

Project Financial Assurance Statement

As at **30 June 18**, 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.** The USN have advised that all aircraft, currently on contract, are expected to be ready for delivery on time or earlier than required.

[123] 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

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.

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.

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.

Note

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

1.3 Project Context

Background

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.

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.

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.

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.

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.

On 4 September 2014, Defence signed a LOA authorising the USN to procure Australian P-8A initial aircraft spares.

In May 2015, the USN signed the contract for Australia's P-8A Aircrew Training Devices to be delivered in 2017-18.

Sustainment and in-service support will provide opportunities for Australian Industry involvement. Further opportunities exist for Australian Industry in facilities and infrastructure development.

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.

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.

Uniqueness

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.
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.

Major Risks and Issues

The Project is currently mitigating capability and cost risks associated with the Aircrew Training System, Mk 54 Torpedo, and High Altitude Anti-Submarine Weapon Capability (HAAWC), as well as issues including establishing a Structural Fatigue Testing program. Further, the project is also monitoring schedule risks associated with the ICT support systems, which are vital to pass support data to the USN to allow for the provision of support to the ADF P-8A fleet.

A number of risks have been treated through the alignment of US and Australian sustainment processes, allowing for the effective and efficient sustainment of the P-8A. Further, a number of risks were approved to be archived as a result of mitigation and retirement, namely risks attributed to delivery of P-8A training system devices and support and support aspects of the Directed Infrared Countermeasures System.

The project has also identified issues with the (objective) Search and Rescue Kit development, the Interactive Electronic Technical Manuals, training System simulation qualification, releasability of aircrew courseware, and ADF Integrated Logistics Support systems data. Close collaboration with the USN to quantify the impact of and to rectify the issues, is proving successful.

Other Current Sub-Projects

Project AIR 7000Ph1B 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 18	Exchange Variation		317.3	
Jun 18	**Total Budget**		5,212.0	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Aircraft Acquisition Payments – Lot 6	(733)		8
	Contract Expenditure –Aircraft Acquisition Payments – Lot 7	(514.4)		
	Contract Expenditure – Aircrew Training System	(251.2)		
	Contract Expenditure – Aircraft Acquisition Payments – Lot 8	(219.2)		8
	Contract Expenditure – Aircraft Government Furnished Equipment	(183.8)		
	Contract Expenditure – Aircraft Retail Spares	(109.5)		8
	Contract Expenditure – PSFD MoU Contributions	(104.1)		
	Contract Expenditure – Increment 1 Contribution	(66.0)		
	Other Contract Payments/Internal Expenses	(544.1)		8,9
	Other adjustments to cash reporting	2.4		
			(2,722.9)	
FY to Jun 18	Contract Expenditure – Aircraft Acquisition Payments – Lot 7	(38.5)		8
	Contract Expenditure – Aircraft Acquisition Payments –Lot 8	(327.1)		
	Contract Expenditure – Aircraft Acquisition Payments – Lot 6	(42.3)		
	Contract Expenditure – Aircrew Training System	(17.6)		
	Contract Expenditure – Aircraft Government Furnished Equipment	(2.6)		
	Contract Expenditure – Aircraft Retail Spares	(2.0)		
	Contract Expenditure – PSFD MoU Contributions	(6.1)		
	Other Contract Payments/Internal Expenses	(268.7)		10
			(705.1)	

Jun 18	Total Expenditure		(3,428.0)
Jun 18	Remaining Budget		1, 784.0

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 DSTD 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	The amount for this line item differs from the prior year due to a revalidation of life to date expenditure.
9	Other expenditure to **30 June 2017** was comprised of Maintenance Training Device scoping and acquisition costs of $**73.6**m, Increment 3 contributions of $**60.8**m, Wholesale Spares Pool of $39.2m, **Operational Load Management $39m**, Aircrew Maintenance and Training costs of $**29.1**m, MK 54 acquisition costs of $**24.1**m, Sonobuoys acquisition cost of $**22.7**m, Commonwealth Project Personnel (CPP) expenses of $**22**m, Mission Support System (MSS) of $21.2m, DIRCM spares of $**20.3**m, Tactical Operational Centre/Mobile Tactical Operational Centre (MTOC) scoping and acquisition costs of $**19.5**m, **Engine Spares $16.8m,** Support and Test Equipment (S&TE) acquisition costs of $14.4m, **Search and Rescue (SAR) Kit $8.2m**, CIOG Single Integration Environment of $7.2m, ICT Co-operative Solution payment of $4.9m, Field Service Representative (FSR) payments of $4.6m, Training System Support Services/**Spares** of $**8.8**m and other operating expenditure not attributable to the listed major contracts of $**107.7**m.
10	Other expenditure to **30 June 18** was comprised of **Sustainment Transition $29.2m, Maintenance Training Devices $28.8m, SNS Reliability Retrofit 24.7m, Spare Engine $23.4m,** Increment 3 Development $**23.3m**, Strategic Support Partnership Contract (SSPC) $**15.7m**, Sonobuoys $**14.5m, Air to Air Refuelling $14m,** , MK54 acquisition cost of $**12.5**m, Training System Spares $**11.9**m, **Transportation of Training Systems $9.9m, Aircrew & Maintenance Training $7.5m, Support and Test Equipment (S&TE) $7.2m, CIO Group Single Integration Environment $6.4m, Training System Support Services $4.6m,** Search and Rescue (SAR) Kit Integration Services $**3.6m**, **Ordnance $2.9m**, and other operating expenditure not attributable to the listed major contracts of $ **29**m.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
852.5	**704.3**	**546.0**	PBS - PAES: The variance is due to **1) reprogramming to future financial years of retails spares ($75m) and engine spares ($57m) procurements; 2) reduction due to Contingency Training no longer required ($10m), with an increase to Training Systems ($19m) due to a deferred payment from 2016-17; 3) foreign currency exchange price basis adjustment down from PBS 2017-18 to MYEFO 2017-18.** PAES – Final Plan: The variance is due **re-programme payments for the Aircraft Prime Contract after successful renegotiation of flexible finance arrangement in the latest MoU Financial Management Procedures Document agreement and foreign currency exchange adjustments from MYEFO 2017-18 to PRE-ERC 2018-19.**
Variance $m	**(148.2)**	**(158.3)**	Total Variance ($m): **(306.5)**
Variance %	**(17.4)**	**(22.5)**	Total Variance (%): **(36)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**The over achievement of in year budget was primarily due to bringing forward Aircraft Payments from FY18/19, to a value of $150.0m as requested by CFO, aligning with early aircraft delivery.**
			Foreign Industry	
			Early Processes	
		9.1	Defence Processes	
		150	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	

			Additional Government Approvals
546.0	705.1	159.1	**Total Variance**
		29.1	**% Variance**

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
PSFD MoU - Contributions (US Government)	Mar 12	130.4	155.9	Cost Ceiling (Capped)	MoU	1, 8
Aircraft Government Furnished Equipment (GFE) (US Government)	Apr 14	142.9	229.4	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	111.9	Variable	MoU	4,7,8
Aircrew Training Systems (US Government)	Dec 14	275.4	321.3	Variable	MoU	5,7,8,10
AAC and Aircraft Production Lot 7 (US Government)	Jun 15	182.5	762.4	Variable	MoU	6,7,8
AAC and Aircraft Production Lot 8 (US Government)	May 16	139.0	756.9	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 2018 is based on actual expenditure to 30 June 2018 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 18		
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.	4

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 18
To date, **seven** aircraft and two 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. **To date, three aircraft have been 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.

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 – Oct 18	1	5, **7**
	Accept and deliver Lot 8 Aircraft (9-12)	Aug 19 – Feb 20	Aug 19 – Feb 20	Aug 19 – **Jan** 20	**(1)**	**6, 7**
	MSS and two Deployable MSS	Sep 16 – Aug 18	Nov 16 – Dec 18	Feb 17 – **Feb 19**	**9**	**8**
	Training System	Jan 18 – Mar 18	Mar 18 –Jun 18	**Mar** 18 – **Jul** 18	**4**	**9**

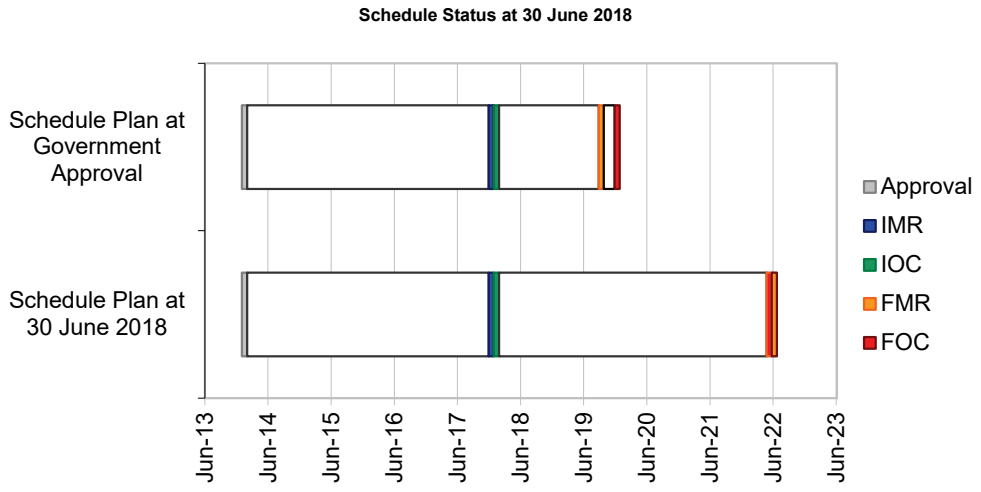
Notes	
1	Fleet Releases are the final configurations for the incremental builds of the P-8A Weapon System. Increment 2 is being delivered through a number of smaller Engineering Change Proposals. Variance from original planned dates are due to changes in the Boeing / USN schedule.

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 are scheduled for delivery in October 2016 (achieved), February 2017 (achieved), April 2017 (achieved), and July 2017 (achieved).
5	Australian Lot 7 aircraft are scheduled for delivery in October 2017 (achieved), January 2018 (achieved), May (achieved) 2018, and October 2018.
6	Australian Lot 8 aircraft are scheduled for delivery in August 2019, September 2019, October 2019, and January 2020.
7	Australia will adopt a model of Recognition of Prior Acceptance for Aircraft certification.
8	Variance from original planned date is due to incorrect capture of milestone in MAA v3.0. This has been corrected in MAA v4.0. Variance is due to the delivery of an additional Mobile Tactical Operations Centre (MTOC 32).
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	Nov 18	(1)	4
Operational Capability 2 (OC2)	Jan 19	Jan 19	0	
Materiel Release 3 (MR3)	Dec 19	Nov 19	(1)	5
Operational Capability 3 (OC3)	Jan 20	Nov 19	(2)	5
Final Materiel Release (FMR)	Oct 19	May 22	31	6
Final Operational Capability (FOC)	Jan 20	May 22	28	6

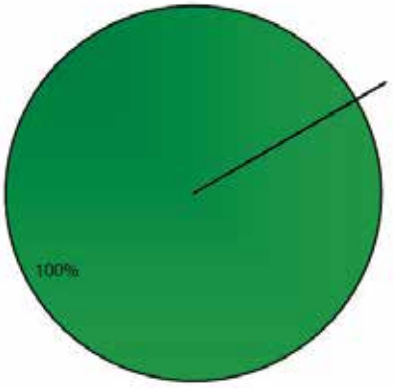
Notes	
1	Variance due to the delay in accepting the first MTOC actually occurring in February 2017.
2	When declaring MR1, CASG acknowledged the Threshold Search and Rescue Store capability would not be delivered until IMR. This was achieved, at the completion of OT&E activities late in November 2017.
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	Forecast to meeting Explosive Ordnance stock level requirements in accordance with the original plan.
5	Milestones MR3 and OC3 are new milestones associated with the approval of the third set of 4 aircraft.
6	FMR & FOC dates have moved to accommodate the purchase of an additional four aircraft.



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 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)	• 4 x P-8A aircraft delivered to RAAF Edinburgh (EDN). • 2 x MTOCs (previously delivered) in the following configurations: • 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. IMR **was** achieved in **November 2017**.	**Achieved**
Final Materiel Release (FMR)	• 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. • 3 x MTOC delivered and installed. • Three Media Fly Away Kits delivered and interfaced with SIE sufficiently to allow organic deployment to non-MTOC supported bases. • Delivery of HAAWC Wing Kits. FMR is expected to be achieved in **May** 2022.	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 has identified schedule risks associated with development of the Aircrew Training Devices (ATD) and Maintenance Training Devices (MTD), delivery of spares and establishment of Training System support services due to contract delays.	• Continued, regular, engagement with USN and Boeing regarding Aircrew and Maintenance Training Devices development and acceptance and prioritised delivery of spares. • A successfully executed strategy to establish training system support services through already established Australian contracted services, has seen this component of this risk retired.
The Project identified supportability risks associated with the importing of the Training System and range and depth of the retail spares to support P-8A Operations have been closed or reassessed to Low. No further reporting will occur.	Whilst these risks were realised in the current year, projects mitigation actions, reduced and positioned them all for retirement. The successful actions were: Training System Support Services: • Continued engagement with relevant USN agencies regarding the integration of USN-provided sustainment services. • Engagement of additional contractor resources to assist development of detailed plans/processes for the Sustainment System. • Contract Award of the Contractor Operational and Maintenance Service contract, provided at RAAF Base Edinburgh. Retail Spares: • Analysis of more mature spares modelling data, and a remodelling/adjustment of future spares purchases. • Agreement of access to USN wholesale spares pool.
The Project identified schedule risks associated with the Mk 54 torpedo.	• The Project is working collaboratively with the FMS case manger, 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.	• 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.
There is a chance that the HAAWC capability will be delivered post FMR leading to failure to achieve the MAA milestone.	• For the High Altitude Anti-submarine Warfare Weapon Capability for the MK54 torpedo the primary mitigation is to track development and acquisition under the extant PSFD MOU, to align RAAF capability delivery schedules with the USN. This mitigation also provides greater access to technical data than available under an FMS procurement, to assist in earlier AUS technical assessment and activity.
The Project identified schedule risks associated with development and timely installation of the Direct Infrared Counter Measures system.	• Risk was not realised as technical issues with the system were remedied by the manufacturer. Risk has been retired as a result. No further reporting will occur.
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
The project has identified a capability risk, in that the USN Interactive Electronic Technical Manuals may not be integrated with Defence systems by required date.	• The Project is working with all stakeholders to ensure the review requirements and schedule. • An interim stand alone system is being implemented as a risk treatment to ensure maintenance capability is unaffected.
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.	• Negotiations are ongoing to ensure appropriate data can be released to Boeing, and the activity remains on schedule.

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.	• **COA agencies are using an alternate solution to transfer data; using manual methods.** • **Project Manager is maintaining communications with all stakeholders to ensure schedule is communicated and maintained.**

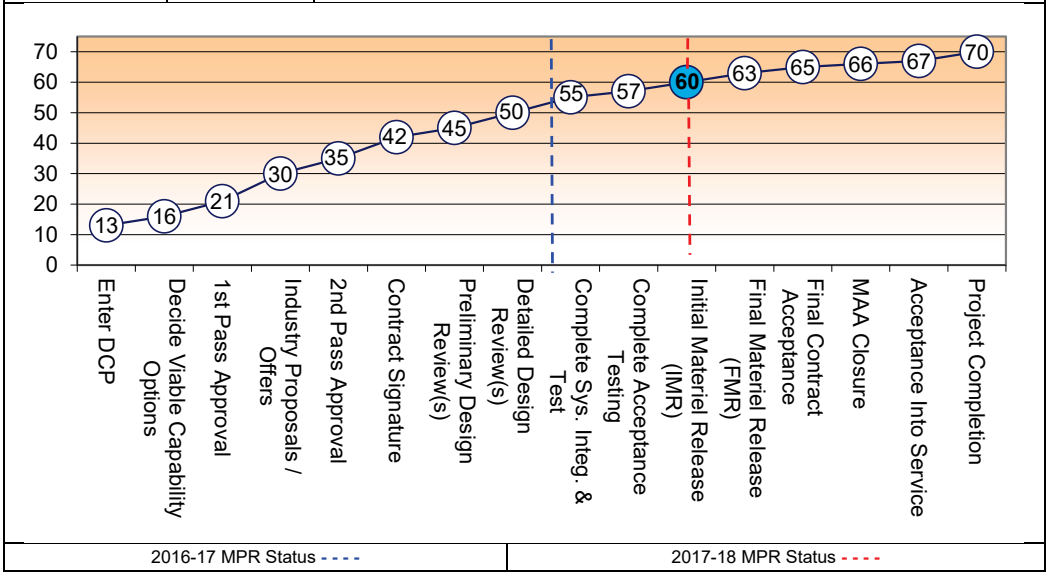
5.2 Major Project Issues

Description	Remedial Action
Cooperative Program process development. The Cooperative Program approach is less regulated than the more conventional FMS or DCS acquisition strategies. As a result, some additional effort is required to develop acquisition and sustainment processes in order to optimise the full benefits of the partnership. **This has been closed and will no longer be reported.**	**The projects actions as described below were effective and have allowed for the effective sustainment of the P-8A.** • Work closely with the USN to adapt existing FMS/DCS arrangements, where beneficial for the project. • Identify those areas where existing arrangements are not adaptable or beneficial to the project, and prepare/approve new arrangements as early as possible.
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.	• 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.**
Support & Test Equipment Support Solution for P-8A deficient **have been resolved and are now closed. No further reporting will occur.**	**The Project executed effective mitigation strategies which ensured sufficient Support & Test Equipment was available to the operating units. This required equipment being loaned or leased until the full complement of equipment was provided.**
An issue has arisen in which the Operational Flight Trainer (OFT) can not obtain the required Level D qualification.	• **A road map has been developed to achieve level D qualification of the OFT if still necessitated by the customer, noting the Simulator is currently undergoing testing as to its effectiveness as a Level C+ device.**
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.	• **Confirm USN understanding of the requirements of ADFs baseline courseware requirements to rectify the shortfalls in the initial courseware delivery.** • **Confirmation the through life support requirements of the Australian Courseware are defined, to design an efficient and sustainable work flow deliver process.**
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.	• **In depth USN business requirement reviews have been conducted, identifying stakeholder concerns and solutions to the reported issues. All stakeholders have considered current and future states to provide cost effective through life support solutions.**
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							
		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 (IMR)	Project Status	10	8	9	8	8	8	9	60
	Explanation	• Requirements: Integration and testing processes have verified achievement of endorsed requirements in accordance with the Operational Test and Evaluation Plan. • Technical Difficulty. The Project is conducting a gated approach to Operational Test and Evaluation. To date a number of operational roles have been satisfied with the project completing the first two of total four gates.							



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
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 Acq staff to the sustainment organisation as part of the SPO creation. This will ensure a better flow of knowledge transfer and ownership of the history of a particular requirement.	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 in 2017–18

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Leon Phillips
Program Director	GPCAPT Debbie Richardson **(to Dec 17)** **GPACPT Martin Nussio (Jan 18 – Current)**
Project Manager	WGCDR James Badgery

Project Data Summary Sheet[124]

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 2nd Pass Approval	**$3,522.8**
Total Approved Budget (Current)	**$3,771.1m**
2017-18 Budget	**$108.4m**
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 **$101.7m** against a budget of **$108.4m** to June 2018. The **$6.7m** underspend to June 2018 is primarily due to net adjustments to payment phasings across the Prime Acquisition and delays in finalising Contract Change Proposals. This is offset against a foreign currency **gain**.

Project Financial Assurance Statement

As at 30 June 2018, 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 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 radios and ancillary requirements), Cargo Hook,** Fast Roping, Rappelling and Extraction System**, Skilled Workforce, Gun Mount System, Aero-Medical Evacuation and Electronic Warfare Self Protection System characterisation. The application of Contingency is directly in support to the transition of the MRH90 into 6 Aviation Regiment.**

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 are currently under review and are expected to be clarified in Quarter **4 2018 to support** approval of a revised Materiel Acquisition Agreement.

124 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.

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.

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 6th Aviation Regiment 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 Aviation Regiment (6Avn 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 from January 2019.

Both Full Flight Mission Simulators have been accepted (the first in August 2013 and the second in October 2014).

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. **Although FMR is being reviewed, it is now forecast to be achieved in 2020 as the technical and supportability issues are resolved to meet the final operational capability.**

MRH achieved 96% of its planned 2017/2018 Financial Year ROE.

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 6 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.

Uniqueness

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.

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.

The MRH Program Office Design Acceptance Strategy is dependent upon the French Military Airworthiness Authority's (Direction Générale de l'Armament (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.

Major Risks and Issues

Aircraft system lack of maturity has affected the certification schedule of the MRH90 and subsequently the declaration of capability milestones. .

The project is managing issues affecting Final Materiel Release including the Mission Management System, Cargo Hook, Fast Roping, Rappelling and Extraction System**, Ground Mission Management System, Full Flight Missions System configuration,** Gun Mount System, and Aero-Medical Evacuation.

The remediation of these 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**.

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.

Other Current Sub-Projects

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.

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.

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 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**
			(294.9)	
Jul 10	Price Indexation		679.8	7
Jun 18	Exchange Variation		**(136.6)**	
Jun 18	**Total Budget**		**3,771.1**	
	Project Expenditure			
Prior to Jul 17	Contract expenditure – Airbus AP	**(2,604.8)**		
	Contract expenditure – CAE Australia	**(172.0)**		
	Other Contract Payments / Internal Expenses	**(232.7)**		**8**
			(3,009.5)	
FY to Jun 18	Contract expenditure – Airbus AP	**(83.3)**		
	Contract Expenditure – Agusta Westland Australia	**(3.9)**		
	Other Contract Payments / Internal Expenses	**(14.5)**		9
			(101.7)	
Jun 18	**Total Expenditure**		**(3,111.2)**	
Jun 18	**Remaining Budget**		**659.9**	

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: $232.7m for operating expenditure, contractors, consultants, and other capital expenditure not attributable to the aforementioned contracts.**
9	Other expenditure: **$14.5m which includes $1.0m** for operating expenditure, **$5.6m** for contractors and consultants, and **$7.9m** for other capital expenditure not attributable to the aforementioned contracts.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
119.2	102.4	108.4	The variance between PBS and PAES estimates **reflects the latest schedule of contract deliverables and a revised allocation of funding to address key risks associated with the stand-up of 6 Aviation Regiment, the remediation of technical risks, role equipment and supportability issues.** The variance between PAES and Final Plan estimates primarily reflects reprogramming of prime contract milestone and **foreign exchange funding increase.**
Variance $m	(16.8)	6.0	Total Variance ($m): (10.8)
Variance %	(14.1)	5.9	Total Variance (%): (9.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.2	Australian Industry	The **$6.7m** underspend reflects net adjustments to payment phasings across the Prime Acquisition Contract, and against **contracts for** other minor procurement requirements **and foreign exchange funding adjustments.**
			Foreign Industry	
			Early Processes	
		(6.0)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
		(0.8)	Effort in Support of Operations	
			Additional Government Approvals	
108.4	101.7	(6.7)	**Total Variance**	
		(6.2)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
Airbus AP	Jun 05	846.3	**2,916.4**	VARIABLE	ASDEFCON (Strategic)	1, 2, 3, 4
CAE Australia	Dec 07	180.5	**176.8**	VARIABLE	ASDEFCON (Complex)	4, 5
Agusta Westland Australia	**Apr 18**	**16.3**	**16.7**	**VARIABLE**	**Deed**	**4, 6**

Notes

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 **2017**, there have been key CCPs processed for a Fast Roping, Rappelling and Extraction System, **and Gun Mount System**.
4	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
5	The Commonwealth has conducted negotiations with the Contractor, to review and settle commercial and technical issues, in December 2015.
6	**The Commonwealth entered into contract with Agusta Westland Australia for the establishment of a helicopter transmission repair and overhaul facility.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
Airbus AP	12	47	MRH90 Aircraft	1

CAE Australia	2	2	Full Flight and Mission Simulator	

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	Sep 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	Sep 11	18	9
Aircraft Acceptance	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	
	MRH aircraft #46	Jul 14	Jun 17	Jun 17	35	10
	MRH aircraft #47 (Final Aircraft)	Jul 17	Jul 17	Jul 17	0	

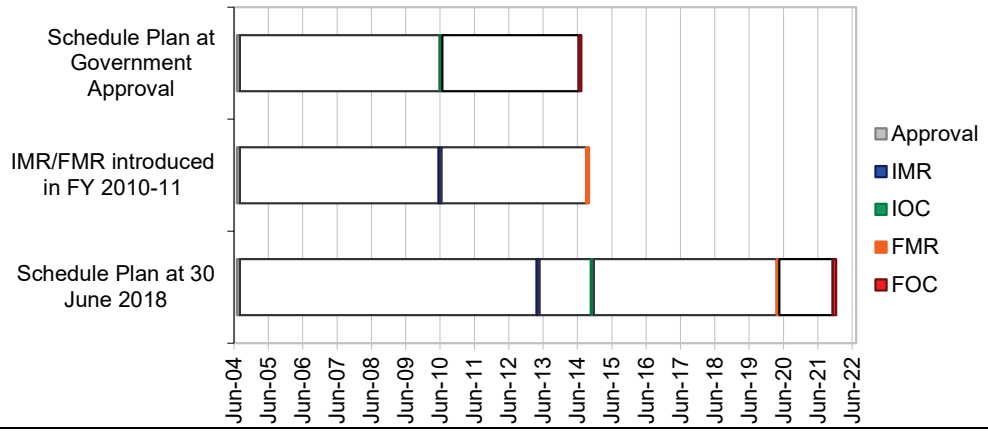
Notes	
1	Phases 4/6 were rolled into the MRH Program from aircraft 13 onwards, which increased the number of aircraft from 12 to 46.
2	The acceptance and test-readiness of the Ground Mission Management System (GMMS) was broken into six lots post contract signature. The lots compose of GMMS deliverables 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.
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)	Army/Navy	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 20**	**68**	4,5
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 are currently under review and are expected to be clarified **in Quarter 4 2018** with the approval of a revised Materiel Acquisition Agreement **as the technical and supportability issues are resolved to meet the FOC**.
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 2018

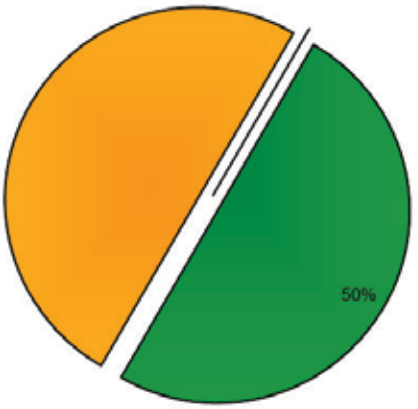


Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green:

A number of key capabilities have been delivered and service released and the aircraft retrofit program is now complete.

Amber:

MRHPO remains focused on the timely delivery of capabilities to support operational capabilities. There continues to be a number of capabilities that will need to be progressed and released including the redesign of Cargo Hook, the Common Mission Management System, **the Gun Mount System, the Mission (wider) Troop Seats** and the improved Fast Roping, Rappelling and Extraction System.

Red:

N/A

Note

This Pie Chart does not necessarily represent capability achieved. The capability assessments and forecasts by the project are not subject to the ANAO's assurance review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	1. Six Product Baseline 003 aircraft with associated role equipment to support Initial Operational Capability milestones; 2. Issue of Australian Military Type Certificate and Service Release; 3. Completion of all MRH90 facilities at Townsville, Oakey and Nowra; 4. Establishment of mature planned contractor support to maintenance and logistics; and 5. Provision and certification of Mission Management systems necessary for Initial Operational Capability milestones. Initial Material Release was achieved in May 2013.	Achieved
Final Materiel Release (FMR)	1. 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); 2. Role equipment delivered to support aircraft; 3. A mature sustainment organisation capable of discharging all in-service responsibilities; including logistic and training requirements; 4. Mature training system with all training devices accepted, supported by an effective, functioning training organisation; and 5. All facilities and support equipment, required to support the capabilities accepted. The project is focused on the timely delivery of capability to meet future operational milestones. This includes the delivery of crucial products such as the replacement Cargo Hook, the Fast Roping and Rappelling Device and a Common Ground Mission Management System. FMR is forecast to be achieved in **June 2020.**	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 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.	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.	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: a. Critical Item 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 2017-18)	
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.	**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.**

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. Evaluate options for consolidating Full Flight Mission Simulator technologies to a single manufacturer. 2. Establish an efficient process of obtaining aircraft documentation and associated software packages. 3. Integrate engineering change proposals between MRH90 aircraft and the Full Flight Mission Simulator.
The Electronic Warfare Self Protection system is not performing to specification during specific aircraft manoeuvres.	1. Conduct a technical assessment of the issues identified and provide recommendations for remediation. 2. Commonwealth to assess the validity of the recommendations with system specialists. 3. Verification and validation of the remediation activities by Industry. 4. Implement solution to meet capability requirements.
The Fast Roping and Rappelling is not suitable which has affected the achievement of operational capability leading to an impact on schedule and performance.	1. Interim Fast Roping and Rappelling Device solution 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 – Fast Roping, Rappelling and Extraction System.** **This issue has been downgraded as a result of contracting for the enduring solution.**
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 System.** **This issue has been downgraded as a result of contracting for the enduring solution.**
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.
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.

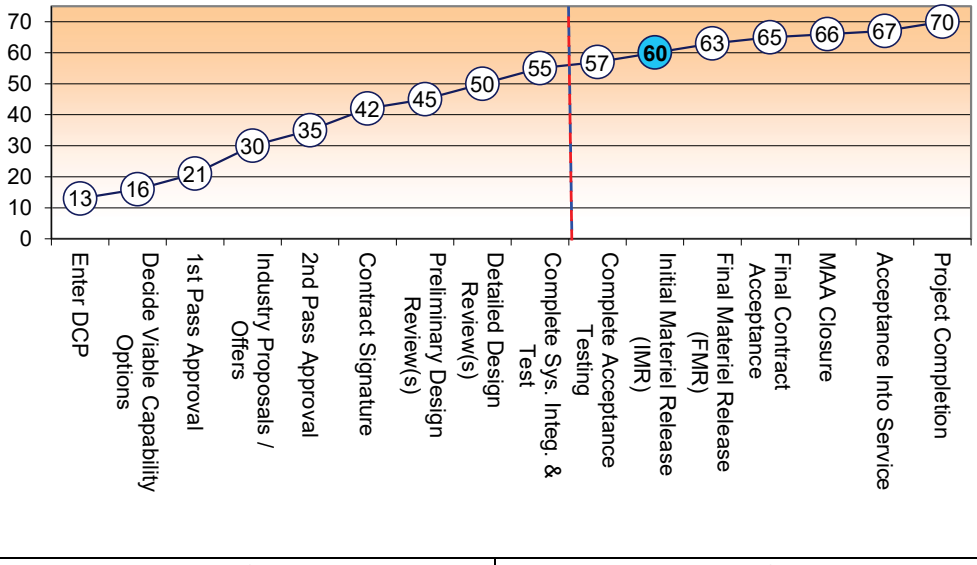
	2. Develop and agree on the functional requirements specification with Commonwealth stakeholders and Industry. 3. Implement agreed solution.
The current Cargo Hook design is incompatible with Australian Defence Equipment which will delay the final solution delivery.	1. Develop Statement of Requirement for new Cargo Hook. 2. Industry to provide proposal for new Cargo Hook. 3. Develop and agree on options enduring solution to meet capability requirements. 4. Implement agreed solution.
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. Accept incremental improvements where appropriate** **2. Identify design options for enduring solution for both Navy and Army as required** **3. Leverage NATO Helicopters 90 community solutions where appropriate** **4. Re-baseline FMR are date via Out of Session PMSG brief to allow update of MAA.** **5. Contract for enduring solution.** **6. Implement enduring solutions to achieve FMR**

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	9	9	8	7	9	56
	Explanation	• **Schedule:** The Final Materiel Release and Final Operational Capability dates are currently under review and are expected to be clarified in **quarter 4 2018** with the approval of a revised Materiel Acquisition Agreement. • **Cost:** Not all risks have been retired; however the estimate at completion to mitigate remains within contingency guidance. • **Requirement:** The MRH System design and acceptance testing phases are essentially complete, with activities on-going for outstanding elements such as cargo hook and mission troop seat. Additionally, the project office, with Navy and Army, is conducting validation trials to demonstrate that the system meets in-service requirements. • **Technical Understanding:** The knowledge necessary to operate and support the platform is being transferred to the in-service providers. • **Technical Difficulty:** Capability is still being tested fully due to the immaturity of elements of the capability. • **Commercial:** Deed 2 settled a number of long outstanding commercial issues and has implemented sound management arrangements to provide confidence that industry effort will be focused on capability realisation.							



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 in 2017-18

Position	Name
Division Head	MAJGEN Andrew Mathewson **(to Nov 17)** **Mr Shane Fairweather (Nov 17 - current)**
Branch Head	BRIG Jeremy King
Project Director	COL Brad Warren
Project Manager	Mr Hilton Hunter

Project Data Summary Sheet[125]

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 2nd Pass Approval	**$2,641.4m**
Total Approved Budget (Current)	**$3,430.4m**
2017-18 Budget	**$206.1m**
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 2018**, the project **had** spent **$205.2m** against a budget of **$206.1m**. The **underspend** of **$0.9m has been driven by reduced costs** for US based Initial Operational Test and Evaluation (IOT&E) activities **and countermeasures procurements.**

Project Financial Assurance Statement

As at **30 June 2018**, 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, with accepted 'caveats'.

The IMR caveat relates to in country aircrew currency training capability, specifically the Tactical Operational Flight Trainer (TOFT) upgrade. TOFT establishment was delayed until July 2017 as a deliberate risk mitigation activity with nil impact on overall capability during the period in which it has been delayed.

All 12 EA-18G Australian aircraft have been accepted and transferred to the RAAF, and have arrived in Australia. The Project met

125 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.

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.

The existing Integrated Visual Environment Maintenance Trainers (IVEMTs) have been successfully upgraded to support F/A-18F and EA-18G maintenance training.

Major Materiel Release (MR2) has been delayed from October 2017 to March 2019 due to a revised integration and certification strategy for the initial MTTES training capability in Queensland. In the interim, aircrew training outcomes have been achieved through the US Navy.

The project is due to achieve its next Major Materiel release (MR 3) milestone in **August** 2018. This milestone **principally relates to enabling capabilities and training devices for the delivered Growler aircraft.**

Materiel Capability Delivery Performance

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.

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.

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 four HARM CATMs and eight AARGM CATMs being procured. Further, HARM and AARGM tactical missiles were approved for acquisition in December 2014 for RTS activities.

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.

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.

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.

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-18G 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 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.

Note

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

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-18F 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-18F 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, 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 MTTES.

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 are ongoing and aircraft have since resumed flight operations. These investigations and any resultant actions will be carried out by the Defence Flight Safety Bureau.

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 MTTES hardware to meet schedule, as well as the timely establishment of MTTES 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 the development of ADF doctrine and command and control frameworks.

The Estate and Infrastructure Group Project to upgrade Northern Australian Range facilities for MTTES 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 is being developed.

Late delivery of MTTES systems is being mitigated through additional use of US training ranges.

Other Current Sub-Projects

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 MTTES)	102.7		6
Aug 17	**Real Variation – Financial Reduction**	**(27.0)**		**10**
			(91.6)	
Jun 18	Exchange Variation		**880.6**	
Jun 18	Total Budget		**3,430.4**	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – US Government (AT-P-SCI)	(1,253.7)		7
	Contract Expenditure – US Government (AT-P-LEN)	**(608.1)**		7,11
	Contract Expenditure – US Government (AT-D-YLB)	**(43.1)**		7,11
	Contract Expenditure – US Government (AT-P-AZN)	**(41.0)**		7,11
	Contract Expenditure – US Government (AT-P-GUW)	**(39.6)**		7,11
	Contract Expenditure – US Government (AT-P-GTM)	**(33.6)**		7,11
	Other Contract Payments / Internal Expenses	**(76.4)**		8,11
	Accrued FMS Payment FY16/17 included (Cash FY17/18)		**(2,095.5)**	
FY to 30 Jun 18	Contract Expenditure – US Government (AT-P-GUW)	**(40.5)**		7
	Contract Expenditure – CEA Technologies	**(31.9)**		7
	Contract Expenditure – US Government (AT-D-YLB)	**(26.2)**		7
	Contract Expenditure – US Government (AT-P-SCI)	**(24.3)**		7
	Contract Expenditure – US Government (AT-P-LEN)	**(22.5)**		7
	Contract Expenditure – US Government (AT-P-AZN)	**(22.4)**		7
	Contract Expenditure – US Government (AT-P-GTM)	**(12.5)**		7
	Other Contract Payments / Internal Expenses	**(24.9)**		9
			(205.2)	
FY to Jun 18	**Total Expenditure**		**2,300.7**	
Jun 18	**Remaining Budget**		**1,129.7**	

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 – MTTES 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 MTTES.
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: **Commercially Contracted resource support ($13.4m)** FMS Weapons procurement – Case AT-P-AYW **($2.9m; FMS services AT-P-GSF ($3.9m) Operational Test and Evaluation activities ($1.2m)**

	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. Will be formally recognised as real cost reduction with V4.1 MAA submission and approval mid-2018.**
11	**Adjustment to previously reported pre Jul 17 LTD spend to reflect directed change in reporting basis from accrual to cash (affected individual contracts: FMS cases - ATDYLB $18.428m, ATPAZN $7.244m, ATPGUW $5.927m, ATPLEN $4.448m, ATPGTM $2.107m, ATPAYW $1.580m and ATPGSF $1.317m; and Other expenditure $0.749m)**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
225.3	213.7	206.1	**PBS – PAES: The budget variation is due to:** **1) Cost savings and minor delays against a range of FMS and non-FMS procurement requirements which has resulted in some reprogramming to future financial years (net $4m); and** **2) The foreign currency exchange price basis adjustment down from PBS 2017-18 to MYEFO 2017-18 ($7m)** **PAES – Final Plan: Key driver to the variance is:** **1) FMS Weapons - missiles and AU commercial - countermeasures acquisition - forecasts still variable,** **2) Schedule slip to FY18/19 (CMN-4, DTU, AAE) and reduced transport and preservation charges, and** **3) MTTES Reduced and rephased Battle Management System costs, lower authentic costs, and some schedule movement to FY18/19.**
Variance $m	(11.6)	(7.6)	Total Variance ($m): (19.2)
Variance %	(5.1)	(3.6)	Total Variance (%): (8.5)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**The 2017-18 EOFY position reflects FMS payments processed in June, savings from Air Force Test and Evaluation activities, minimal funding for countermeasures requirements.**
			Foreign Industry	
			Early Processes	
		(0.1)	Defence Processes	
		0.0	Foreign Government Negotiations/Payments	
		(0.8)	Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
		(0.9)	**Total Variance**	
206.1	205.2	(0.44)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
US Government (AT-P-LEN)	Aug 12	944.2	711.3	Reimbursement	FMS	1, 2, 7
US Government (AT-P-AZN)	May 13	36.2	78.8	Reimbursement	FMS	1, 2
US Government (AT-P-SCI)	Jul 13	1,313.1	1,527.1	Reimbursement	FMS	1, 2
US Government (AT-P-GTM)	Sep 13	19.3	181.0	Reimbursement	FMS	1, 2, 3
US Government (AT-P-GUW)	Feb 15	88.6	149.6	Reimbursement	FMS	1, 2,5
US Government (AT-D-YLB)	Feb 15	84.6	129.6	Reimbursement	FMS	1, 2, 4
CEA Technologies Pty Ltd	Jun 17	87.3	85.3	Firm	Official Order	6

Notes	
1	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 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 MTTES capability.
6	This contract is for the acquisition of the Advanced MTTES 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.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
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)	12	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 MTTES – CEA Technologies Pty Ltd systems – various threat emulation systems, support equipment and services	

Major equipment received and quantities to 30 Jun 18

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.
Delivery of the H12(A) Software configuration set and associated flight clearance recommendation.

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
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	Jul 18	10	3
	Modified IVEMTs	Oct 16	N/A	Sep 16	(1)	
	MTTES–Queensland Ranges	Oct 17	N/A	Mar 19	17	4
	MTTES – Northern Australian Ranges	TBD	N/A	TBD	0	5
Acceptance	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	
	MTTES–Queensland Ranges	Oct 17	N/A	Mar 19	17	4
	MTTES – Northern Australian Ranges	TBD	N/A	TBD	0	5

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 has been 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 still being baselined as some of the US Government work remains pre-contract.

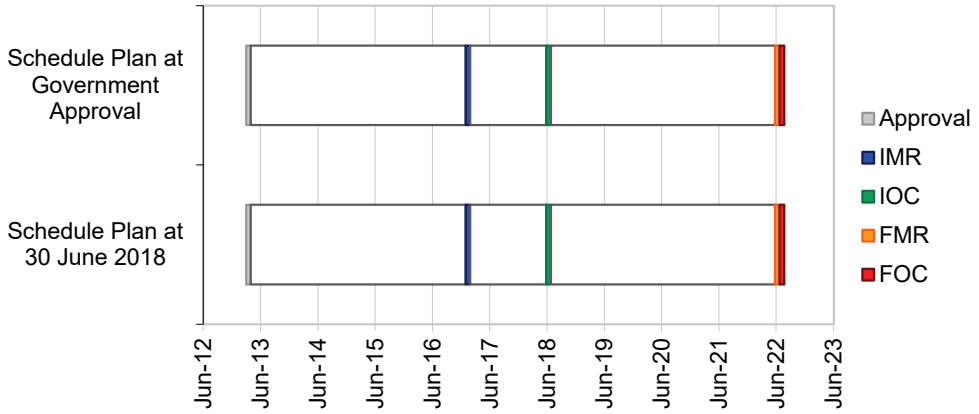
3.3 Progress Toward Materiel Release and Operational Capability Milestones

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	Jul 18	0	
Materiel Release 2 (MR2) MTTES QLD	Oct 17	Mar 19	17	2
Materiel Release 3 (MR3) Various systems	Jul 18	Aug 18	1	4
Materiel Release 4 (MR4) MTTES Northern Australia	Mar 19	Jun 20	15	3
Materiel Release 5 (MR5) Additional Stores and Stores clearances	Jul 19	Jul 19	0	
Materiel Release 6 (MR6) MTTES Northern Australia	Mar 20	Mar 20	0	
Materiel Release 7 (MR7) ADV MTTES	Jul 20	Jul 20	0	
Materiel Release 8 (MR8) ADV MTTES	Jul 21	Jul 21	0	
Final Materiel Release (FMR)	Jul 22	Jul 22	0	

Final Operational Capability (FOC)	Jul 22	Jul 22	0	

Note
Forecast dates in Section 3 are excluded from the scope of the review.
1. IMR was declared with Caveats on 14 February 17. Further details are provided at section 5.2.
2. MR2 has been delayed to accommodate a revised integration and certification strategy for the MTTES – Queensland schedule **that incrementally delivers training capability.**
3. MR4 has been delayed as it is anticipated that some materiel components for the MTTES- Northern Australian Ranges will not be able to be delivered on time.
4. MR3 will be declared when TOFTs 3 & 4 are ready for training (RFT). RFT is scheduled for August 2018.

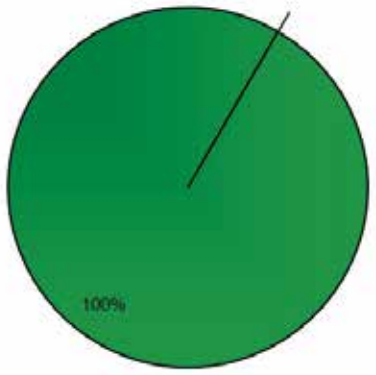
Schedule Status at 30 June 2018



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green:

The project remains on track to deliver a US Navy common Airborne Electronic Attack capability based on the EA-18G Growler aircraft.

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)	• At least six new-build EA-18G aircraft in USA and associated equipment delivered to support Initial Operational Test and Evaluation (IOT&E) programs.	Achieved with caveats

	• Sufficient aircrew and maintenance personnel to support Growler operations from ISD. • Initial in-country aircrew training. IMR was declared on 14 February 2017 with caveats. The caveats associated with this declaration **have since been satisfied**	
Final Materiel Release (FMR)	• 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** FMR is a future dated milestone projected for **July** 2022.	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 possibility that the level of Australian unique development required to meet the MTTES requirements will need design, manufacture, integration and certification effort that cannot be completed within the MAA milestone dates (MR2, MR4 & MR6).	MTTES is currently in initial design phases. During the scoping phase of the project, the team will aim to identify areas of greatest technical risk and treat as appropriate. The project has established and is implementing a revised integration and certification strategy.
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.	Participation in the USN F/A-18E/F Service Life Assessment & Extension Program
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
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 Office have successfully bid for resources to address the issue. They are engaging Headquarters Joint Operations Command (HQJOC) to develop and improve command and control frameworks and processes.**

5.2 Major Project Issues

Description	Remedial Action
Late Delivery of the upgrade to the Tactical Operational Flight Trainers (TOFTs).	**This issue has been closed with the TOFT upgraded and ready for training in July 2017.**
Late Delivery of Aircrew Computer Based Training (CBT).	**This issue has been closed with delivery of the Computer based training in January 2018.**
Late Delivery of MTTES Systems	**Certification of MTTES Prime Products for Queensland was due in October 17. 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	**Requested realignment of budget to enable completion of facilities effort without delay through FY20/21.**

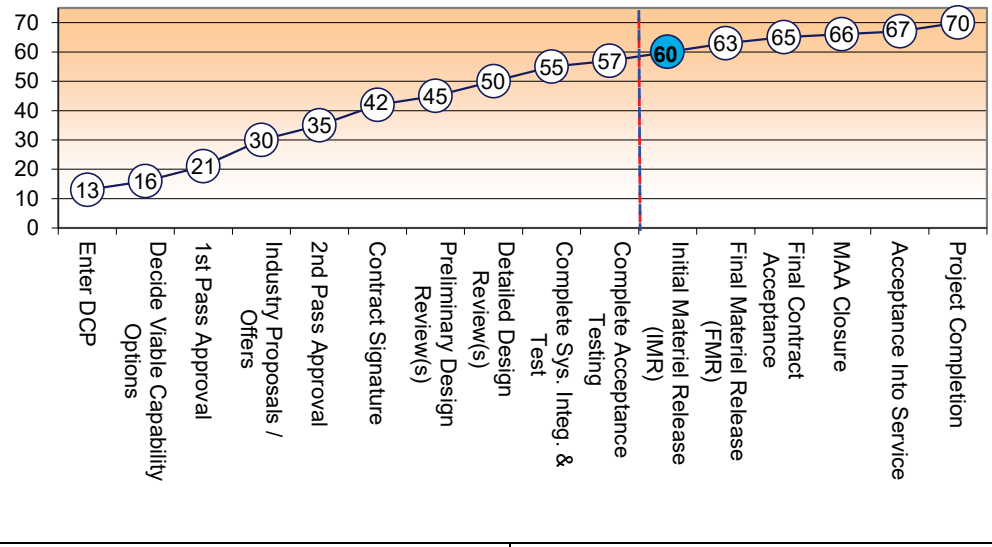
Note
Major risks and issues in Section 5 are excluded from the scope of the review.

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	Project Status	8	8	8	9	8	8	9	58

Release	Explanation	
		• Schedule: The Schedule Score is below the benchmark as the MTTES Mission and Support systems have not yet been delivered and the schedule for some of those components are less mature. • Technical Understanding: Arrangements for the employment and support of the capability are in place or being put into place. • Technical Difficulty: The Technical Difficulty score is below the benchmark as **the MTTES system design for the Northern Australia range is not yet complete.**



2016–17 MPR Status - - - -	2017–18 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	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 in 2017-18

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Gregory Hoffmann
Project Director	Mr Gavin Healy (to **Aug 17**) **Vacant (Aug 17-Dec 17)** **Ms Justine Baker (Acting Dec 17–current)**
Project Manager	WGCDR Andrew Harrigan (to **Dec 17**) **Mr Francis Healy (Jan 18 –current)**

Project Data Summary Sheet[126]

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)	$3,4**30.3**m
2017–18 Budget	$**243.6**m
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 current 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 will provide Navy with a contemporary helicopter with anti-submarine warfare (ASW) and anti-surface warfare capability.

The acquisition of 24 helicopters will 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

The **overspend** of $**11.7**m **as at 30 June 2018** is primarily **due to the $24.3m AUD part payment of the additional Termination Liability for FMS case AT-P SCF brought forward from 2018-19, in addition to the increased June forecast for disbursement activity. This was offset by the deferral of the deposit for a new FMS case, and delays in AWD Ship Integration and DSTG Science and Technology Work.**

Project Financial Assurance Statement

As at 30 June 2018, 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.

Schedule Performance

Materiel Release Two (MR2) milestone was achieved 19 December 2016. The next major milestone will be Materiel Release Three (MR3), **which is expected to be achieved in March 2019. This milestone is** 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.

126 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

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.

Note

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

1.3 Project Context

Background

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.'

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.

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.

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**.

Uniqueness

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.

The MH-60R is being acquired as a maritime combat capability. It will have limitations in utility roles such as passenger or cargo transfer.

Major Risks and Issues

The Project Office (PO) is currently managing **three** open risks with the highest level of pre-mitigation risk being medium, whilst also managing two open issues. However, there are currently no major risks or issues in achieving the MH-60R operational capability milestones on schedule.

Other Current Sub-Projects

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.

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.

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.

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 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 18	Exchange Variation		439.8	
Jun 18	**Total Budget**		3,430.3	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – US Government (AT-P-SCF)	(1,721.0)		5
	Contract Expenditure – US Government (AT-P-AHV)	(88.4)		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	(124.6)		6
			(1,965.1)	
FY to Jun 18	Contract Expenditure – US Government (AT-P-SCF)	(154.9)		5
	Contract Expenditure – US Government (AT-P-KOA)	(53.8)		5
	Contract Expenditure – US Government (AT-P-AHV)	(24.9)		5
	Other Contract Payments / Internal Expenses	(21.7)		7
			(255.4)	
Jun 18	**Total Expenditure**		(2,220.5)	
Jun 18	**Remaining Budget**		1,209.8	

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 ANZAC, AWD and FFG Ship Modifications, **contractor support, DSTG, Spares and consumables, minor contract expenditure,** Facility related expenditure, 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
294.3	241.8	243.6	**PBS to PAES: The variance is due to the refinement of additional spares purchases as well as revised facilities, ship integration and Foreign Military Sales programmed activities. PAES to Final Plan: The variance is minor.**
Variance $m	(52.5)	1.8	Total Variance ($m): (50.7)
Variance %	(17.8)	0.7	Total Variance (%): (17.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(1.9)	Australian Industry	**The Project has achieved $255.3m spend for the FY 17/18. The variance is due to the part payment of the additional Termination Liability for FMS case AT-P SCF brought forward from 2018-19, in addition to the increased June forecast for disbursement activity. This is offset by delays in invoice receipt for the AWD Ship Integration and DSTG Science and Technology Work.**
		18.2	Foreign Industry	
			Early Processes	
		(4.5)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
243.6	255.4	11.8	**Total Variance**	
		4.8	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 June 18 $m			
US Government (AT-P-SCF)	Jun 11	2,090.3	2,409.7	Variable	FMS	1, 3
US Government (AT-P-AHV)	Aug 11	168.1	194.3	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	14.1	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 2018 is based on actual expenditure to 30 June 2018 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 Mar 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 18		
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 18

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

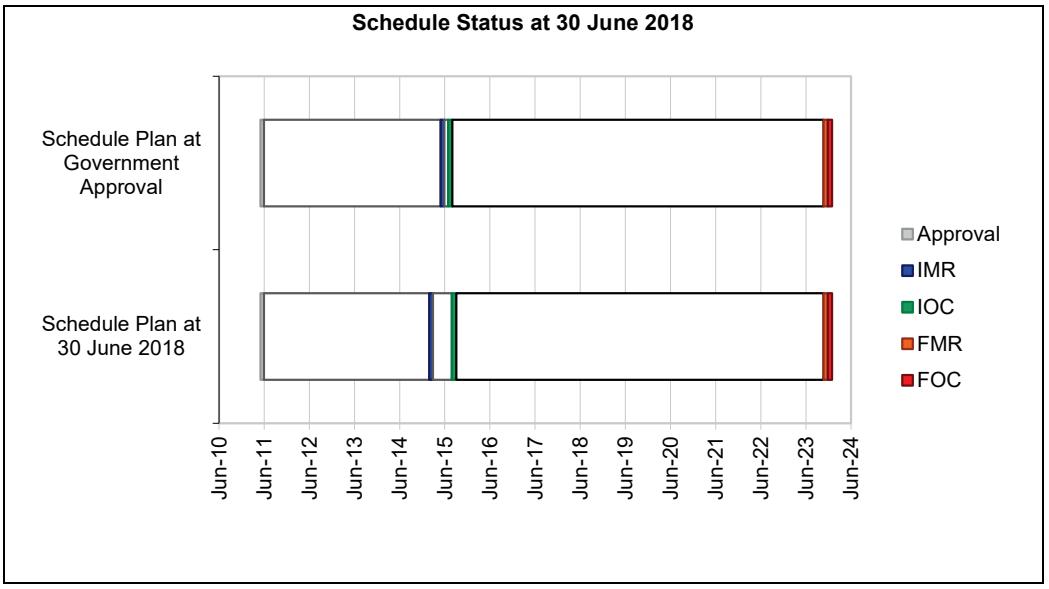
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	ADF Mission System Options – Phase 1	Aug 15	Aug 15	Aug 15	0	1
	ADF Mission System Options – Phase 2	Sep 18	**Jan 20**	**Jan 20**	**16**	**1, 2**
	Air Warfare Destroyer	TBA	TBA	TBA	TBA	**3**
Acceptance	ADF Mission System Options – Phase 1	Aug 16	Aug 16	Sep 16	1	1
	ADF Mission System Options – Phase 2	Sep 18	**Jul 19**	**Jul 19**	**10**	**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	TBA	TBA	TBA	TBA	**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.
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	**Confirmed schedule dates for the Air Warfare Destroyer (HMAS *Hobart* only) System Integration and Acceptance dates will be known by October 2018 and dates for HMA Ships *Brisbane* and *Sydney* are yet to be advised.**
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	**Mar 19**	**(3)**	**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	

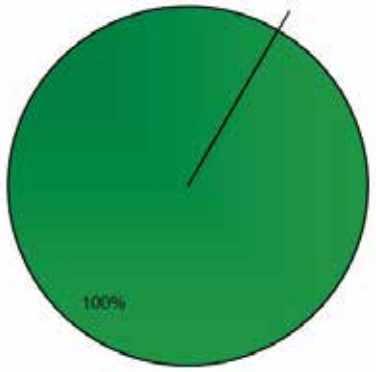
Notes	
1	Revised aircraft delivery schedule.
2	The project declared IMR in March 2015, three months ahead of schedule and the Capability Manager signed-off IMR in July 2015.
3	The Capability Manager declared IOC on 25 September 2015, 25 days later than originally scheduled. Navy linked MH-60R IOC to 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 MR3 milestone schedule has been brought forward in the last MAA update (V3.3) to align with the Capability Realisation Plan Operational Capability Milestone OC3.**
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.**



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
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

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 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

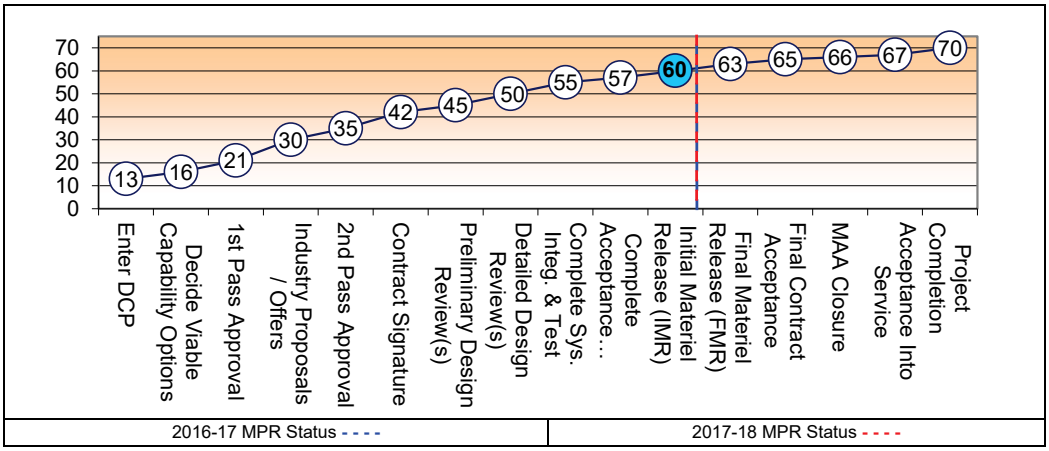
Description	Remedial Action
N/A	N/A

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	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	8	8	9	8	10	61
	Explanation	• **Schedule:** The MH-60R production line is mature. The Project negotiated early delivery dates for ADF MH-60R. • **Cost:** The overall Estimate at Completion is projected to be within project guidance. The Project has benefited from economies of scale from the US Government multi-year buys of aircraft and key components. • **Operations and Support:** The capability achieved IOC and MH-60R Flights are now embarked on RAN Fleet Units.							



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. 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.	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 in 2017-18

Position	Name
Division Head	MAJGEN Andrew Mathewson AM **(to Nov 17)** **Mr Shane Fairweather (Nov 17 – current)**
Branch Head	CDRE Scott Lockey CSC RAN
Project Director	CAPT Malcolm Wright
Project Manager	CMDR Michael Rainey RAN **(to Jan 18)** **Mr Steven Dik (Jan 18 – current)**

Project Data Summary Sheet[127]

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 2nd Pass Approval	**$3,284.7m**
Total Approved Budget (Current)	**$3,428.9m**
2017-18 Budget	**$697.3m**
Project Stage	**Integration and Test**
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), incorporating the yet to be approved Phase 5B.

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 to be acquired which are not yet in contract.

1.2 Current Status

Cost Performance

In-year

As at **30 Jun 2018**, financial year 2017-18 expenditure was **$659.7m** against the forecast expenditure of **$697.3m. The variation is due to CFOG decision to delay payment of invoices totalling $37.7m for goods delivered and services provided in FY17-18 as a result of portfolio cash budget pressures.**

Project Financial Assurance Statement

127 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.

As at 30 Jun 2018, 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.

Contingency Statement

The project has not applied contingency funds in the financial year.

Schedule Performance

Phase 3B has progressed through the design phases **for all 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**.

Haulmark Trailers (Australia) Pty Ltd (trailers) continue to provide deliverables as required under the contract.

Due to early delays, schedule performance is closely monitored. The Project is confident it will achieve the Initial Materiel Release (IMR) milestone by the originally planned date of December 2018.

Materiel Capability Delivery Performance

Affordability will impact the overall capability, with costs being managed by maximising off-the-shelf solutions.

As at 30 Jun 2018 Rheinmetall MAN Military Vehicles Australia has **delivered 1406 of 2,536 vehicles and the following modules:**

- **Flatracks: 2157 (all deliveries completed)**
- **Bridge Boat Interface: 13 (of 25)**
- **Mediumweight Combat Engineer Section Stores: 15 (of 73)**
- **Mediumweight Maintenance: 14 (of 110)**
- **Mediumweight Stores: 9 (of 265)**
- **Heavy Stores: 9 (of 115)**

Haulmark Trailers (Australia) has delivered **745** of 1,582 matched trailers.

Note

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

1.3 Project Context

Background

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.

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.

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.

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.

Strictly, MOTS items were not considered appropriate as modifications are required to achieve:

- 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.

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.

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.

Uniqueness

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.

Major Risks and Issues

The following risks and issues may have an impact on schedule, cost, performance, and/or reputation.

Risks associated with the vehicle acquisition process include changes to system specifications **resulting from required engineering changes, technical certification**, integration issues with new generation communication equipment, access to public roads **and the support contract may not meet the requirements of the Commonwealth**. The key issues concerning the project are the performance of key subcontractors, **delays to the recovery capability and training**, and interface issues between vehicles, trailers, modules **and other capabilities**. **Please refer to Section 5 of this document that details the specific risks and issues.**

Other Current Sub-Projects

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 3A has delivered 2,146 lightweight (4x4) and light (6x6) Mercedes-Benz G-Wagons and 1,799 matching Haulmark trailers, replacing approximately two thirds of the current Land Rover 4x4 and 6x6 vehicle fleets. The new G-Wagons will be used primarily for tactical training, but will also be available to support humanitarian assistance or disaster relief operations, and to help secure Australia's coastline. **This project was closed on 03 October 2017**.

LAND 121 Phase 4 will acquire and deliver into service 1100 Protected Mobility Vehicles – Light (PMV-L) and 1058 associated trailers. The PMV-L will perform command, reconnaissance, liaison and utility roles.

LAND 121 Phase 5B 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
			(622.0)	
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**	
Jun 18	Exchange Variation		**144.2**	
Jun 18	**Total Budget**		**3,428.9**	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	**(784.5)**		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	**(119.9)**		
	Rheinmetall MAN Military Vehicles Australia (Support)	**(4.2)**		
	Other Contract Payments / Internal Expenses	**(94.5)**		7
			(1,003.1)	
Jun 18	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	**(544.4)**		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	**(80.0)**		
	Rheinmetall MAN Military Vehicles Australia (Support)	**(2.6)**		
	Other Contract Payments / Internal Expenses	**(32.7)**		8
			(659.7)	
Jun 18	**Total Expenditure**		**(1,662.8)**	9
Jul 18	**Remaining Budget**		**1,766.1**	

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	Expenses comprise of ($38.6m) for the acquisition of G-Wagons by LAND 121 Phase 3A on behalf of LAND 121 Phase 3B, ($23.1m) for salaries, ($9.0m) for the Protected Mobility Vehicle, and ($23.2m) for other project office costs not associated with the prime contracts.
8	Expenses comprise of ($7.8m) for the Protected Mobility Vehicle, ($9.0m) for salaries, and ($15.8m) for other project office costs not associated with the prime contracts.
9	Delays to some mandated systems reviews and deliveries resulted in stop payment on related milestones being imposed.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
709.9	687.6	697.3	PBS to PAES: The variation is due primarily to equipment deliveries and associated payments that were brought forward into 2016-17 from 2017-18. PAES to Final Plan: Variance is due to updates to exchange rates.
Variance $m	(22.3)	9.7	Total Variance ($m): (12.6)
Variance %	(3.1)	1.4	Total Variance (%): (1.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Variance is due to CFOG decision to delay the payment of invoices totalling $37.7m for goods delivered and services provided in FY17-18 as a result of portfolio cash budget pressures.
			Foreign Industry	
			Early Processes	
		(37.7)	Defence Processes	
			Foreign Government Negotiation/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
697.3	659.7	(37.6)	**Total Variance**	
		(5.4)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
Rheinmetall MAN Military Vehicles Australia (Acquisition)	Jul 13	1,585.9	2,111.4	Variable	ASDEFCON	1, 2
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	Jul 13	397.7	508.1	Variable	ASDEFCON	1, 2
Rheinmetall MAN Military Vehicles Australia (Support)	Jul 13	32.3	47.1	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 Jun 2018 is based on actual expenditure to 30 Jun 2018 and remaining commitment at current exchange rates of EURO 0.6344 on 29 Jun 2018, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
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 18

As at 30 Jun 2018 Rheinmetall MAN Military Vehicles Australia has delivered 1406 of 2,536 vehicles and the following modules:

- Flatracks: 2157 (all deliveries completed)
- Bridge Boat Interface: 13 (of 25)
- Mediumweight Combat Engineer Section Stores: 15 (of 73)
- Mediumweight Maintenance: 14 (of 110)
- Mediumweight Stores: 9 (of 265)
- Heavy Stores: 9 (of 115)

Haulmark Trailers (Australia) has delivered (as at 30 Jun 2018): **354** Medium weight Cargo trailers, **278** Heavy ILH trailers, **68** Heavy Equipment Trailers, **13** Medium Equipment Transporters, **6** Heavy Bulk Fuel Tankers, **26** Dolly Low Loaders, **207** Cargo Kits and **140** ramp sets (for the Mediumweight, Cargo Trailers).

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

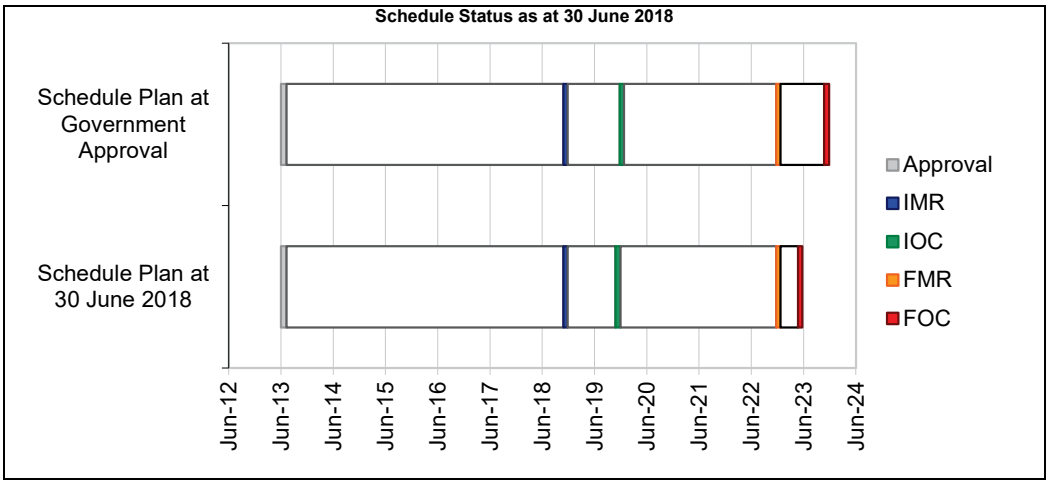
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration, Acceptance Test and Evaluation (AT&E)	Vehicles	Jul 16	Aug 18	**Feb** 19	**31**	1, 2, 3, 4
	Modules	Nov 15	Jun 17	**Sep** 18	**34**	1, 2, 3, 4, 5
	Trailers	Sep 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 (CCP 117) 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.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Note
Initial Materiel Release (IMR)	Dec 18	**Dec** 18	**0**	1
Initial Operational Capability (IOC)	Dec 19	**Dec** 19	**0**	
Final Materiel Release (FMR)	Dec 22	Dec 22	0	
Final Operational Capability (FOC)	Dec 23	Jun 23	(6)	

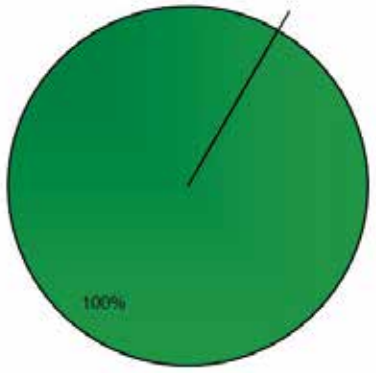
Notes	
1	All variances are forecast to be achieved on or ahead of planned dates and are a reflection of estimated planned work required to achieve MAA milestones.



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 expects to meet materiel capability requirements as expressed in the MAA 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)	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. Forecast achievement December 2018.	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

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. 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**. **It is likely that this risk is to be retired by the end of 2018.**
Integration of new generation communication equipment (C4I) – vehicles. 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.	**Monitor and Review RMMVA performance.** 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. **The project has digitised a significant quantity of trucks with C4I fit in order to meet AHQ defined digitisation C4I package. Technical certification of the C4I package was submitted to AHQ for approval in mid-June, 70/150 vehicles now digitised.**
Access to Public Roads. 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, supportability, environment, reputation and compliance.	**Develop and agree to a strategy with States and Territories.** 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 Exception Framework (DRTEF) as Defence reviews road access confirmation from individual States and Territories. **States and Territories access is actively discussed at each IPT (held monthly) with all stakeholders. The main focus has been HRV permits for driving on public roads to allow training of the public road driving elements of the HRV Pilot course.**
Insufficient storage space at the LAND 121 Introduction into Service facility at Meeandah. There is a chance that Introduction Into Service will be affected by lack of storage space at Meeandah impacting on reputation.	**The Meeandah facility has now been utilised for several years by the project for the receipt and roll-out vehicle and module capabilities without incident. Roll-out plans are reviewed and assessed in regards to Meeandah's capacity. This risk has been retired.**
Heavy Recovery Mission System training delay There is a chance that the MHC roll-out will be affected by a delay in training for the Heavy Recovery Mission System impacting on schedule and performance. **SEE ISSUE BELOW**	A training gap analysis has been conducted by RMMV/RMMVA in Europe and a workshop has been planned for July/August 2017 in Germany to evaluate the findings. Two ADF Recovery mechanics are participating in a joint training development activity with RMMVA. A draft training implementation plan has been released to stakeholders and a CCP is being developed (to be executed in July 17) which will define training locations and resources. **This risk has become an issue due to the February 2018 scheduled trial operator training course being rescheduled to May 2018. This is in accordance with CCP156 and has been detailed below in major project issues.**
Emergent Risks (risk not previously identified but has emerged during 2017–18)	
Description	Remedial Action
Technical Certification delay.	**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.**

There is a chance that the project will be affected by the technical restrictions being in place at the time of vehicle's acceptance. This may impact on cost, schedule and reputation.	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. Warranty and Latent Defect contract clauses will also be utilised if required.
RMMVA failure to meet contractual compliance. 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, reputation and supportability.	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.

5.2 Major Project Issues

Description	Remedial Action
Subcontractor engagement. The project has been affected by the delay to subcontractor engagement impacting on schedule, cost, performance and reputation.	**CoA to undertake financial, capacity and viability assessment of subcontractors.** 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. 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. 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 remain on target for end June delivery. 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.
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.	The Project integration issues are being actively managed with two 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.
42M Medium Recovery Vehicle 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.	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.

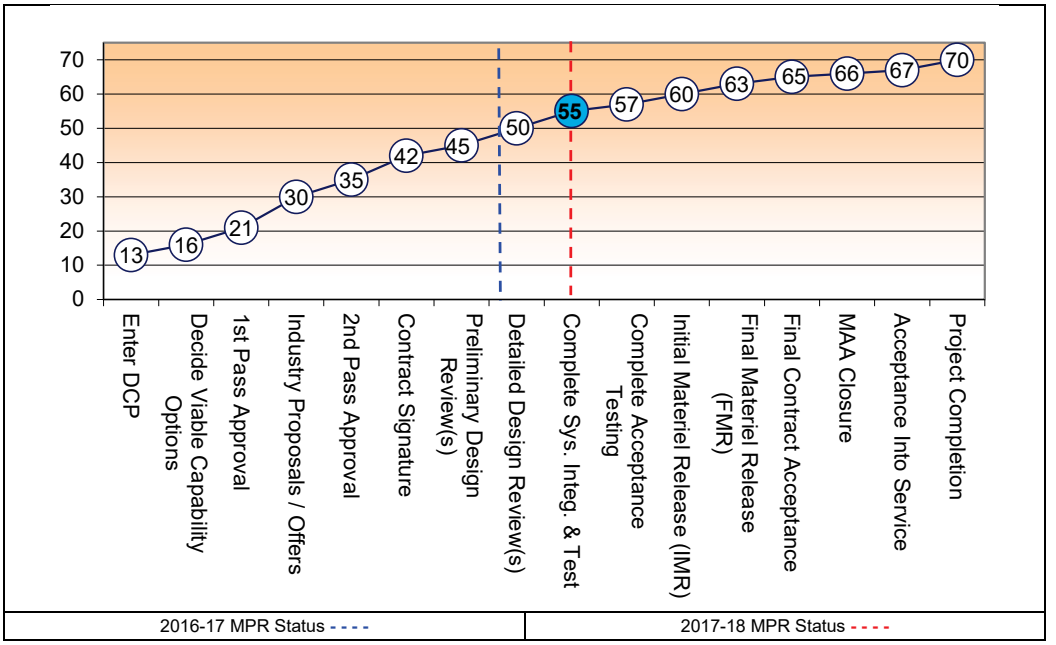
	First production vehicles have been built and are in transit for delivery as per CCP156. Some production and parts sourcing issues have been identified by RMMVA. These are being managed by dual sourcing parts when needed. CoA continues to closely track and manage 42M delivery.
45M Heavy Recovery Vehicle training delay 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.	This became an issue due to the February 2018 scheduled trial operator training course being rescheduled to May 2018 in accordance with CCP156. 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. The HRV pilot course commenced in May 2018 and was successfully completed at the end of June. 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.
MHV SE – Bridge Boat Interface (BBI) The project has been affected by integration failure between the Improved Ribbon Bridge (IRB) Ramp Bay and BBI, impacting on capability, schedule, and cost.	BBI Integration issues with L155 modules is ongoing. The Commonwealth has provided a concept to RMMVA for assessment. Quote from RMMVA received and has been approved to commence integration solution investigation with outcomes due in May 2018. A CCP will be raised to modify the built BBI Modules to the required build state, update technical documentation, commence training and introduce the BBI into service. A draft quote has been received from RMMVA to modify the BBI fleet, which is currently being considered by the project to determine Value For Money. Decision on whether or not to proceed is expected in July 18.

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	9	8	8	7	8	8	7	55
	Explanation	• **Schedule:** Concurrent activity and schedule float contribute to high confidence that schedule will be within the tolerance of the Materiel Acquisition Agreement. • **Cost:** The project has progressed to a stage where the Estimate at Completion can be forecast with confidence based on cost variance trends. Majority of risks have been retired in project elements particularly sensitive to cost increases • **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 below the benchmark as RMMVA is behind with a number of ILS deliverables due to inadequate resourcing earlier in the project. While resourcing is now adequate it is likely that the ILS deliverables will remain behind where they should be, although this is unlikely to affect introduction into service. • **Operations and Support:** Detailed operational and support requirements have been specified and In-Service Contracts are in place. The score being below the benchmark again reflects the ILS deliverables being behind schedule. The project is also working towards a performance based support contract, and the collection of appropriate metrics to inform that process and the end contract.							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	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

Section 8 – Project Line Management

8.1 Project Line Management in 2017–18

Position	Name
Division Head	MAJGEN David Coghlan (Dec 15–current)
Branch Head	Ms Sarah Myers (Oct 16-current)
Project Director	COL Steve Wilson (Dec 16–current)
Project Manager Vehicles and Modules	Ms Jacquie Menzies **(to Dec 17)** **Ms Alecia Millard (Dec 17 – current)**
Project Manager Trailers	Mr Jonathan McGuigan

Project Data Summary Sheet[128]

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 1st Pass Approval	Aug 05
Government 2nd Pass Approval	Jun 07
Budget at 2nd Pass Approval	$2,958.3m
Total Approved Budget (Current)	$3,091.7m
2017-18 Budget	$38.3m
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

In-year expenditure of $23.2m represents an underspend of $15.1m. This is primarily due to the delay in Survey and Quote work for the inventory and critical spares and docking costs that were planned but not realised by the Project.

Project Financial Assurance Statement

As at 30 June 2018, 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

Technical issues have impacted the Prime Contract Final Acceptance milestone. Resolution of those technical issues will influence a revised Final Acceptance date and impact Final Materiel Release (FMR).

There have been no major project milestones achieved in 2017-18.

The technical issues have also impacted the availability of the LHDs to progress operational test and evaluation activities. A plan to achieve FOC is being redeveloped with the completion of operational test and evaluation activities to be rescheduled across the ADF in balance with existing operational and training commitments. The project anticipates achievement of Final Operational Capability (FOC) in December 2019 (37 months behind schedule).

Materiel Capability Delivery Performance

The amphibious capability sought through the provision of two LHDs is as follows:

128 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.

- 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.

Production set to work and test activities, although delayed due to a combination of low electrical trade productivity, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, supported the achievement of project capability outcomes with later than planned acceptance dates for both LHD 01 and LHD 02.

Rectification of defects and closure of outstanding functional requirements is being progressed and delivery of all materiel capability is expected to be achieved.

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.

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 but an increase in issues such as in-service performance, ship availability, and close out of outstanding verification/assurance and warranty/latent defects. This has influenced Prime Contractor Final Acceptance leading to an impact on achievement of Final Materiel Release (FMR) **and resulting in the emergence of risk surrounding the Prime Contractor retaining sufficient qualified and experienced staff**. System performance of the propulsion pods had a significant impact upon the availability of both ships in 2017 requiring the docking of **both** HMAS Adelaide and **HMAS Canberra.** The project transferred to the Maritime Systems Division (MSD) effective 1 July 2017. A Transition and Remediation Program (TARP) has been established to complete the outstanding acquisition scope in conjunction with the remediation of **propulsion pod system performance and** a number of **other** systems of concern. **Furthermore the TARP is addressing risk surrounding Logistics Supportability under the scope of ILS Remediation**.

Many existing risks were retired upon delivery of LHD 02 with the associated integrated logistics support products. Such risks included the identification and treatment of technical issues, major ship system or equipment failure, indices escalation, supplies, severe weather conditions during sea trials, non-acceptance of the LHD Safety Case, scope creep, Legislative/Regulatory changes and any non-supply of Government Furnished Equipment or Services. The remaining risks, issues, and certification and acceptance tasks continue to be resolved by the project office in conjunction with the prime contractor, Navy and other relevant Defence areas. The risk regarding the availability of suitably qualified project office personnel was realised **after the project transferred to MSD and is now being managed as an issue.**
Other Current Sub-Projects **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 18	Exchange Variation		(304.3)	
Jun 18	**Total Budget**		3,091.7	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – BAE Systems	(2,671.9)		
	Other Contract Payments / Internal Expenses	(119.0)		6
			(2,790.9)	
FY to Jun 18	Contract Expenditure – BAE Systems	(0.2)		
	Other Contract Payments / Internal Expenses	(23.0)		7
			(23.2)	
Jun 18	**Total Expenditure**		(2,814.1)	
Jun 18	**Remaining Budget**		277.6	

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 services ($2.6m), spares ($8.3m)**, **Electronic Support Measures ($5.4m), Shore Power design and installation ($2.6m) and** project management costs (**$4.1**m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
48.8	43.8	38.3	PBS–PAES: The acquisition of the project is not as forecast in the Defence PBS 2017-18. Testing and acceptance of the capability has been rescheduled. As a result, expenditure has been revised from $49m down to $44m. PAES–Final Plan: The variation is primarily due to delays in the survey and quote contract for the inventory and critical spares and docking costs that were planned but not realised by the project.
Variance $m	(5.0)	(5.5)	Total Variance ($m): (10.5)
Variance %	(10.2)	(12.6)	Total Variance (%): (21.5)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(15.1)	Australian Industry	Year to date underspend of $15.1m is due to delays in the Survey and Quote work for the inventory and critical spares and docking costs that were planned but not realised by the Project.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
38.3	23.2	(15.1)	**Total Variance**	
		(39.4)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract / Arrangement	Notes
		Signature $m	30 Jun 18 $m			
BAE Systems	Oct 07	2,268.1	2,682.0	Variable	ASDEFCON	1, 2

Notes	
1	Contract Price at Revision 124. Amendments to Contract since signature include execution of contracted options for Training and Spares.
2	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
BAE Systems	2	2	LHD ships and integrated support systems.	

Major equipment received and quantities to 30 Jun 18
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	
	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	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. 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.

3.2 Contractor Test and Evaluation Progress

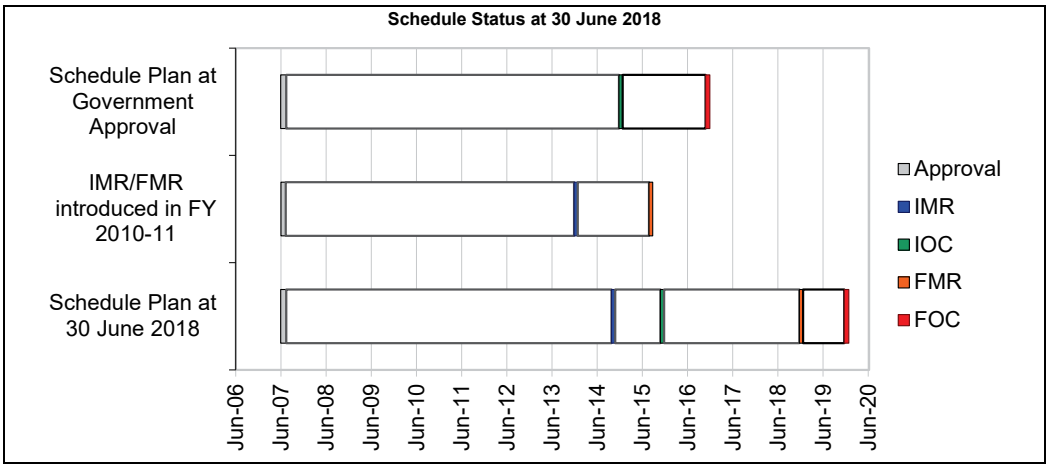
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	Oct 15	7	1
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Feb 14	Oct 14	9	2
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Oct 15	2	3
	LHD Final Acceptance	Sep 15	Nov 16	**Mar 19**	**42**	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	**Whilst the delay in LHD Ship 2 Project Acceptance initially affected Final Acceptance, technical issues and a rising number of defects have impacted closure of Contract requirements and obligations. The Final Acceptance milestone is dependent upon rectification of defect issues and completion of Acceptance testing.**

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	**Dec** 18	**40**	**5**
Final Operational Capability (FOC) (LHD 02)	Nov 16	Dec 19	37	**6**

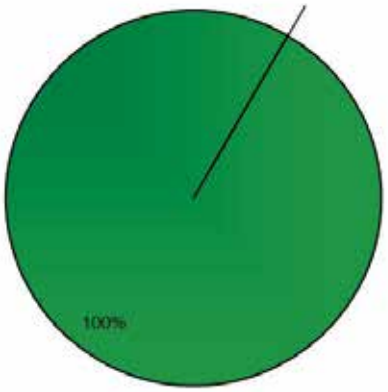
Notes	
1	LHD 01 production delays impacted System Integration and set to work activities resulting in the delay to achievement of IMR.
2	The change is a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in 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	**Technical issues and a rising number of defects have impacted testing and closure of Contract requirements and obligations. The Final Acceptance milestone is dependent upon rectification of defect issues and may continue to impact Final Materiel Release (FMR).** The FMR date is under review to incorporate remediation activity and expected to be clarified with the approval of a revised Materiel Acquisition Agreement **in late 2018.**
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** are being rescheduled across Defence in balance with a range of operational and training commitments already planned. This planning is significant and ongoing.



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:** **Closure of the functional requirements is being progressed by the Prime Contractor, some of which require agreement on the required rectification. Scheduling rectification works is constrained by fleet commitments.** **A number of Defects and Requirements will not be closed until after HMAS Canberra and HMAS Adelaide are docked in 2019 and 2020 respectively. Achievement of FMR and FOC prior to the docking may occur subject to the progression of Operational Testing and establishment of a suitably resourced rectification plan for the outstanding items.** **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)	• 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
Final Materiel Release (FMR)	• Completed delivery of LHD 02 and all remaining Acquisition Project Support Deliverables.	Not yet achieved

	• FMR is expected to be achieved in **December** 2018.	

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 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.	**This risk was realised and is now disclosed as an issue in Section 5.2**
There is a chance that in-service use of the Ships during the NOTE period will identify system performance shortfalls in key systems leading to an impact on schedule and cost.	**This risk is realised and is now disclosed as an issue in Section 5.2.**
There is a chance that defect rectification and testing won't be completed by Final Acceptance due to insufficient access to LHD's leading to an impact on schedule and cost.	**This risk is realised and is now disclosed as an issue in Section 5.2.**
There is a chance that the corporate knowledge of the CoA project team will be affected by the transfer from Specialist Ships Acquisition Branch to Major Surface Ships Branch leading to an impact upon schedule and cost.	**This risk was realised and is now disclosed as an issue in Section 5.2**
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
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.	• **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**

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.	• **Prompt** sign off of contract requirements. • Monitor burn down rate of remaining contract requirements. • Provision of expert review at earlier acceptance testing. • 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.	• 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**.	• 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.
Final Acceptance (FA) of the acquisition contract has been affected by the **volume of outstanding technical issues**.	• **This Issue has been closed. The FWT CCP was rejected by the CoA and current Contract requirements still remain. TARP was stood up and FA delayed.**

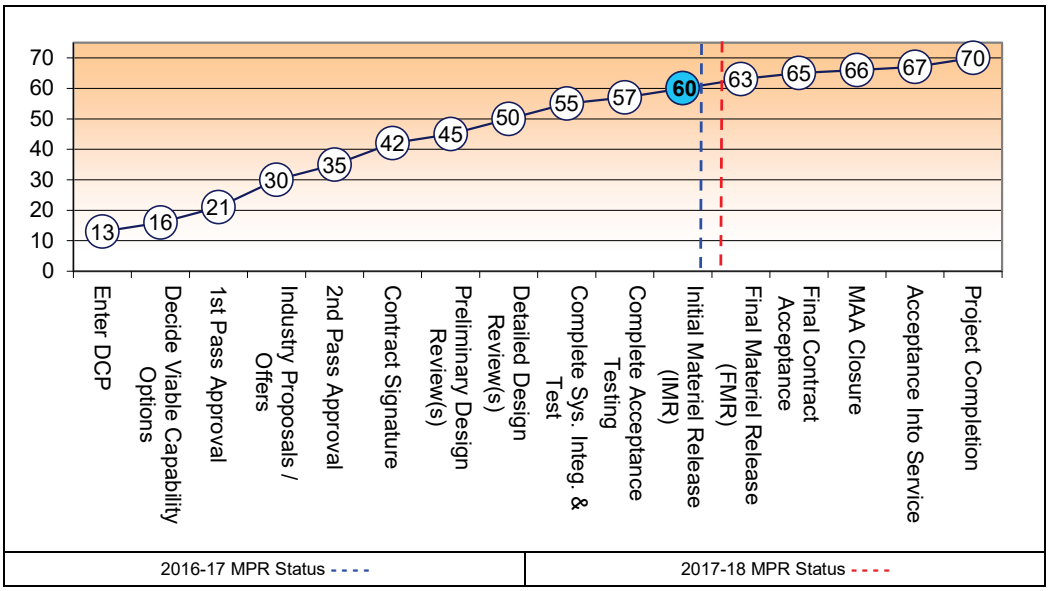
Description	Remedial Action
In-service use of the Ships during the NOTE period has identified system performance shortfalls in key systems leading to an impact on schedule and cost.	• **Transition and Remediation Program (TARP) established in April 17 to address system performance issues (remediation) and progress rectification of outstanding acquisition deficiencies and defects.** • **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.	• **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 by end of 2018.**
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.	• **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.** • **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	8	9	9	9	9	8	**10**	**62**
	Explanation	• Schedule: BAE Systems delivered LHD 01 and LHD 02 late. • 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.**							



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 in 2017-18

Position	Name
Division Head	**RADM Adam Grunsell**
Branch Head	**CDRE Steven Tiffen (Jul 17 – Jun 18)** **CDRE Robert Elliott (Jun 18 – current)**
Project Director	**Mr Terrence Stamp**
Project Manager	**Ms Donna Tobias (Jul – Nov 2017)** **Vacant (Nov 17 – Mar 18)** **Mr Thomas Egan (Mar 18 – current)**

Project Data Summary Sheet[129]

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 2nd Pass Approval	**$1,945.0m**
Total Approved Budget (Current)	$1,952.0m
2017-18 Budget	**$198.8m**
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 1 (Engineering and Manufacturing Development) of the project delivered 10 vehicles and 5 trailers for various test and evaluation activities. Stage 2 (Low Rate Initial Production) delivered an additional six vehicles and four trailers for reliability testing and verification / validation activities. Stage 2 will also deliver the first 100 production vehicles and trailers. Stage 3 (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 will be the ADF's only protected vehicle capable of being lifted by ADF Chinook helicopters. The vehicle will also pioneer a next-generation open architecture communications management system, the Integral Computing System (ICS), which will unify 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.

129 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.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2018, financial year 2017-18 expenditure was confirmed as $190.4m against the forecast expenditure of $198.8m. Variance is due to re-phasing of C4I deliverables into Financial Year 2018-19 ($6.7m), delays in Test and Evaluation activities ($2.1m); and rescheduling of Interim Logistic Support arrangements ($1.4m). Procurement of planned Government Furnished Equipment requirements totalling $1.7m has partially offset this variance.

Project Financial Assurance Statement

As at **30 June 2018**, 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 1 (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 Stage 1 (Engineering and Manufacturing Development), 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 1 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 1 on 5 September 2017, with the caveat that Thales Australia continued to address the reliability issues. A Reliability Demonstration Test will be conducted to confirm that the reliability improvements have been implemented prior to Production Readiness Acceptance Testing (PRAT) 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. 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 Commonwealth entered into Stage 2 with Thales Australia in September 2017. Acceptance of the Stage 2 test and evaluation activities (Reliability Demonstration Test and Production Readiness Acceptance Test) by Defence is required prior to exiting Stage 2. The Project Office continues to work with Thales Australia to realise the capability deliverables as per the contract.

Materiel Capability Delivery Performance

16 PMV-L **pre-production baseline** vehicles and **nine** trailers have been delivered **for development and testing purposes in Stages 1 and 2. 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 20 LRIP vehicles and 20 trailers (out of a total of 1100 vehicles and 1058 trailers planned for delivery into service).**

Defence is conducting a trial involving the deployment of two Hawkei vehicles to Iraq and Afghanistan. The vehicles were initially sent into Iraq as part of Task Group Taji and the trial will now continue with the Australian contingent in Kabul, Afghanistan. This trial commenced in December 2017 and is expected to conclude by August 2018. The key trial objectives include the identification of critical operating issues and deployment considerations for the Hawkei capability.

Note

The capability assessments and forecasts by Defence are not subject to the ANAO's assurance 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 1) and at the same time retain the possibility of acquiring a Market Available Vehicle (MAV) in the event JLTV proves unsuitable (Option 2). 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 3) 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 1 MSA funding was provided in July 2011 following approval of Materiel Acquisition Agreement (MAA) V2.1. Stage 1 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 2 of the MSA Option (Option 3); 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 2 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 2 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 1: 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 1.
- Stage 2: Low Rate Initial Production. Includes the production of 100 vehicles and 100 trailers, plus 6 test vehicles and 4 trailers based on an approved production baseline; the conduct of a Production Reliability Assessment Test, and final acceptance testing and evaluation activities.
- Stage 3: Full Rate Production. The production of the remaining vehicles and trailers based on the approved Full Rate Production baseline, and the achievement of IMR and FMR. **This stage will also include the uplift of the 100 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 result in significant savings to the Commonwealth.

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 has identified 14 currently 'high' rated risks (pre-mitigation rating) during 2017-18 financial year. This is managed to nine 'high' rated risks post risk mitigation actions. The 14 'high' rated risks have been consolidated into the following four broader descriptions, as described in section 5.1:

- **The impact on schedule and performance if the PMV-L fails to successfully complete the Reliability Program (RDT and PRAT);**
- **Delays in the provision of technical and logistic support data impacting on providing a fully developed support system;**

- **Delays in C4I system development due to the developmental nature of the PMV-L C4I system and misalignment of other Defence C4I programs; and**
- **Production delays due to vehicle reliability and quality issues, which may impact on project milestones.**

Other Current Sub-Projects

LAND 121 is a multi-phased program providing the ADF with current-generation high-capability field vehicles, modules and trailers. Other LAND 121 projects are:

- LAND 121 Phase 3A – This project has delivered 2,146 lightweight (4x4) and light (6x6) Mercedes-Benz G-Wagons and 1,799 matching Haulmark trailers, replacing approximately two thirds of the current Land Rover 4x4 and 6x6 vehicle fleets. The new G-Wagons will be used primarily for tactical training, but will also be available to support humanitarian assistance or disaster relief operations, and to help secure Australia's coastline. **This project was closed on 3 October 2017.**
- 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.

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 18	Exchange Variation		6.6	
Jun 18	**Total Budget**		1,952.0	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Thales Australia (Prime Contract)	(181.5)		
	Contract Expenditure – Thales Australia prototyping activities (MSA Stage 1 and Stage 2 Contract)	(58.7)		6
	Other Contract Payments/Internal Expenses	(32.6)		7
			(272.8)	
FY to Jun 18	Contract Expenditure – Thales Australia (Prime Contract)	(179.6)		
	Other Contract Payments/Internal Expenses	(10.7)		8
			(190.3)	
Jun 18	**Total Expenditure**		(463.1)	4
Jun 18	**Remaining Budget**		1,488.9	

Notes	
1	This amount reflects funding approval at First Pass Approval.
2	This amount reflects approval to undertake MSA Stage 1 prototyping.
3	This amount reflects funding approval at Interim Pass for MSA Stage 2 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 3) and the contracts are now closed.
7	Expenses comprise of: MAV prototyping activities ($17.7m); Project administrative costs ($4.6m); External Service Providers ($4.0m); **costs related to testing / trials ($2.4m);** Legal costs ($2.1m) and US JLTV Program ($1.8m).
8	Expenses comprise of: **Non-Prime contracts ($4.9m);** External Service Providers ($4.1m); Costs related to testing/trials ($1.3m); **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
222.8	203.0	198.8	PBS – PAES: The variation is primarily due to an additional reliability trial conducted in August 2017 that has resulted in some linked project milestones and payments being deferred to 2018-19. PAES – Final Plan: The variation is primarily due to contract milestone payments delayed to the following financial year.
Variance $m	(19.8)	(4.2)	Total Variance ($m): (24.0)
Variance %	(8.9)	(2.1)	Total Variance (%): (10.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(8.4)	Australian Industry	As at 30 June 2018, financial year 2017-18 expenditure was confirmed as $190.4m against the forecast expenditure of $198.8m. Variance is due to re-phasing of C4I deliverables into Financial Year 2018-19 ($6.7m), delays in Test and Evaluation activities ($2.1m); and rescheduling of Interim Logistic Support arrangements ($1.7m). Procurement of planned Government Furnished Equipment requirements totalling $1.7m has partially offset this variance.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
198.8	190.4	(8.4)	**Total Variance**	
		(4.2)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
Thales Australia	Jul 10	9.0	58.7	Firm	ASDEFCON	2, 3
Thales Australia	Oct 15	1,328.5	1,475.1	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 2018 is based on actual expenditure to 30 June 2018 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 2 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 Signature	Quantities as at 30 Jun 18	Scope	Notes
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 18

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 1 (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 2. 20 vehicles and 20 trailers from the Low Rate Initial Production quantities have been accepted by the Commonwealth as at 30 June 18.

Notes

1	The 16 test vehicles and 9 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	Support System	Jun 17	Jun 18	Aug 18	14	4

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 CoA approval of ICS DDR 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 1 (Engineering and Manufacturing Development) has been 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 1.
4	The variance of SSDDR of 14 months is due to the LRIP baseline not being ready for review until CDR exit in October 2017 and the contractor failed to meet the entry criteria in SSDDR Checklist.

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
Maintenance Evaluation	PMV-L, Trailer and ICS	Oct 17	Jan 18	Jun 18	8	5
Acceptance Verification and Validation (AV&V)	PMV-L, Trailer and ICS	Jun 18	Jan 19	Feb 19	8	6, 7
Production Readiness Acceptance Test (PRAT)	PMV-L and Trailer	Jun 18	Jan 19	Mar 19	9	7
Low Rate Initial Production (LRIP) Acceptance Last Batch	PMV-L, Trailer and ICS	Jun 18	Jan 19	Jan 19	7	6, 7
Full Rate Production (FRP) Acceptance Last Batch	PMV-L, Trailer and ICS	Oct 20	May 21	May 21	7	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: • 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.
3	The Reliability Demonstration Test (RDT) was introduced as a Contract Change to confirm that failures identified during the Reliability Growth Trial 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 9 month delay in completing RDT is due to the delay in remediating the outstanding reliability issues.
4	As part of the extension of Stage 1 (Engineering and Manufacturing Development), DT&E has also been extended to facilitate further development testing and to mitigate against the Acceptance Verification and Validation (AV&V) activities required under Stage 2 (Low Rate Initial Production).
5	The approval of AVR for the Maintenance Evaluation was delayed by 7 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. The IETP has now been updated in accordance with the requirements of the Contract, which has subsequently enabled approval of the AVR.

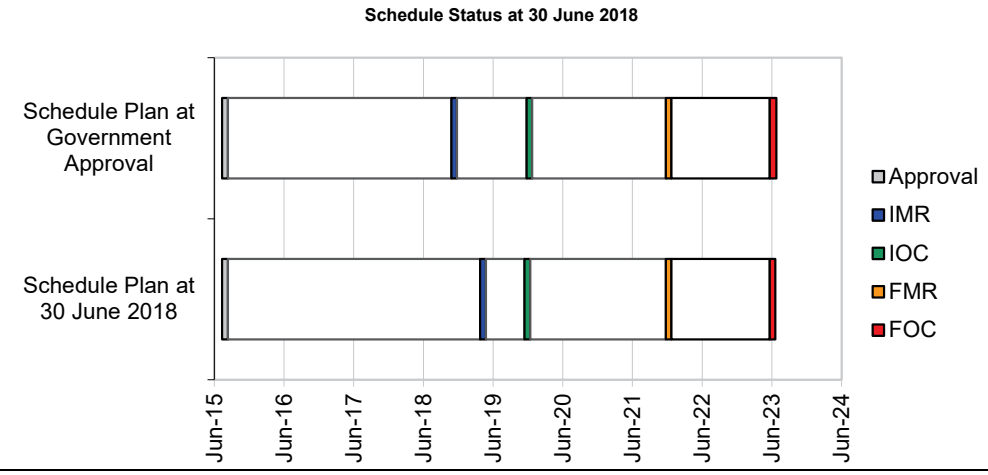
6	**AV&V has been delayed by 7 months due to the requirement to extend reliability testing, which impacted on the date that the LRIP vehicle build state was established between the Commonwealth and Thales. This delay in the establishment of the vehicle build state then impacted on vehicle availability to conduct AV&V activities.**
7	As part of the extension of Stage 1 (Engineering and Manufacturing Development), the start dates of some Stage 2 (Low Rate Initial Production) and Stage 3 (Full Rate Production) activities have also been delayed. The project office is working closely with the stakeholders to adhere to the agreed schedule.

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 19**	**5**	**1**
Initial Operational Capability (IOC)	Dec 19	Dec 19	0	
Final Materiel Release (FMR)	Dec 21	Dec 21	0	
Final Operational Capability (FOC)	Jun 23	Jun 23	0	

Notes

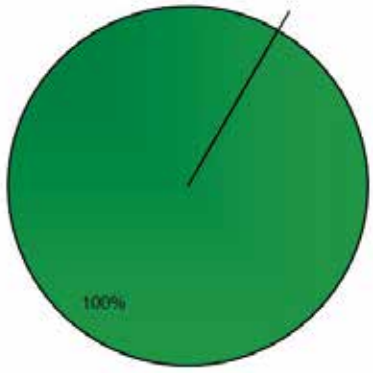
1	**IMR was deferred by five months to enable the conduct of an additional vehicle reliability demonstration activity (four months) and the extension of Introduction into Service Training and the associated increase in vehicle deliveries (one month).**



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 expects to meet the materiel capability requirements as expressed in the Materiel Acquisition Agreement and in accordance with the requirements of the Technical Regulatory Authorities.

Amber:
N/A

Red:
N/A

Note

This Pie Chart does not necessarily represent capability achieved. The capability assessments and forecasts by Defence are not subject to the ANAO's assurance review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR is a future dated milestone projected for **May 2019**. By IMR, the following will be delivered: • **108** PMV-L and **108** Trailers to be delivered in accordance with the Force Generation Cycle; and • Logistics support arrangements, **including Training and Maintenance Systems**.	Not yet achieved
Final Materiel Release (FMR)	FMR is a future dated milestone projected for December 2021. By FMR, the following will be delivered: • 1100 PMV-L and 1058 Trailers; and • Introduction Into Service (IIS) Training and transfer of IIS training packages.	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 2017-18)	
Description	Remedial Action
There is a chance that the PMV-L will fail to successfully complete the Reliability 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.	• **Close Commonwealth supervision and involvement during the Reliability Demonstration Test (RDT) and Production Readiness Acceptance Test (PRAT).** • **Commonwealth and Supplier senior leadership engagement to maintain oversight and direction of critical reliability issues, responding to help needed, and resource requirements / prioritisation.** • **Monitoring of the contracted Reliability Program.**
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.	• **Close Commonwealth oversight and support for the development and provision of the associated through life support contract deliverables.**
There is a chance that the developmental nature of the PMV-L C4I system and the misalignment of Defence C4I programs will delay the system development.	• **Continued collaboration across Defence C4I programs and suppliers to manage schedule misalignment and C4I capability integration.**
There is a chance that production delays from vehicle reliability and quality issues will impact on the achievement of the Initial Materiel Release and Initial Operating Capability milestones.	• **Commonwealth and supplier senior leadership engagement to maintain oversight and direction 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.**

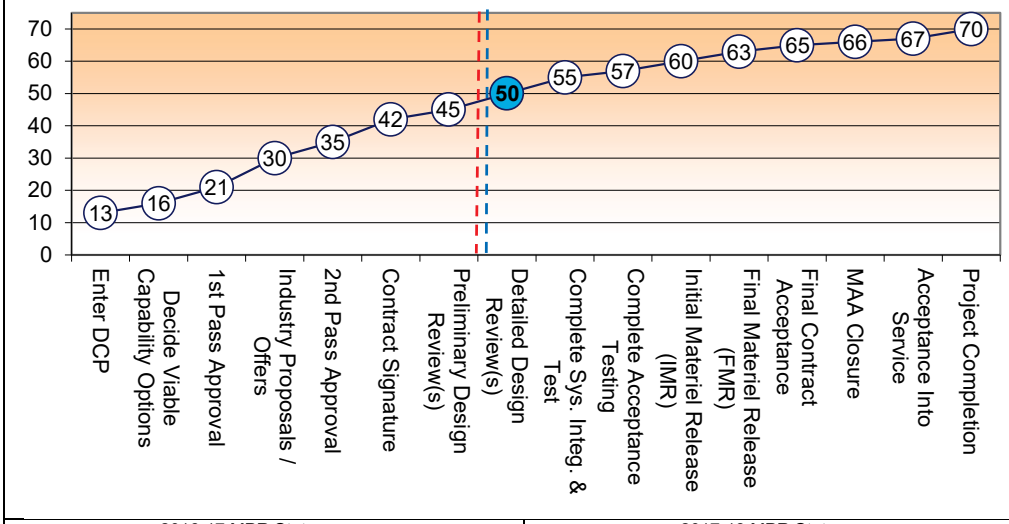
5.2 Major Project Issues

Description	Remedial Action
During RGT, the performance of the vehicles exceeded the number of critical failures allowable under the contract	Under a remediation activity agreed to by Defence, Thales Australia is to remediate these critical failures and **complete the RDT** in order to fulfil the contractual **reliability** requirements. It is **identified** that Thales Australia: • have reprioritised technical and assembly resourcing effort, • are progressing the remediation activity in concurrence to other scheduled activities, • **have further invested in engineering resources, and** • **are conducting the RDT to prove reliability fixes.** **This issue was retired on 14 September 2017 when RGT3 finished and the RDT commenced. A new risk was raised to address the issue with the delay in entering PRAT.**

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	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	7	6	7	7	7	6	47
	Explanation	• **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. • 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 current user trial in Iraq and Afghanistan is informing the project of the support requirements for deployed vehicles.							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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. Establishing a strong, open and trusting relationship with all stakeholders is a critical element for success, particularly in relation to understanding the technical requirements for a first-of-type capability, and in facilitating proactive risk management and contingency planning across the design, development, testing and introduction into service phases.	First of Type Equipment
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.	Governance Contract Management First of Type Equipment

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.	
Tender Evaluation and Negotiation. During tender evaluation and negotiation, a number of external subject matter experts with vast Defence and commercial experience were engaged for advice and to provide independent assessments of technical, commercial and financial matters. Active participation of the externals in the lead up and during negotiations considerably improved the projects understanding and approach towards commercial, industry and programmatic issues.	First of Type Equipment
Integrated ICS Team. The uncertainty in developing the ICS concept would have benefited from having an integrated and centralised team consisting of: • 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
Establishment of a Strategic Relationship Board. The project initiated a Strategic Relationship Board consisting of senior Defence and Thales Australia executives to monitor progress, evaluate performance and risks within the parameters of contractual obligations.	Contract Management
External Recommendations. In the lead up to Second Pass, the project reviewed a number of independent reports undertaken in other vehicle projects to gain an understanding of the commercial, contractual, governance and procedural considerations to be incorporated into the contract. This exercise benefited the project significantly when considering risks, engaging stakeholders and during negotiations.	Contract Management Governance
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.	**Contract Management** **Governance** **Resourcing**

Section 8 – Project Line Management

8.1 Project Line Management in 2017-18

Position	Name
Division Head	MAJGEN David Coghlan
Branch Head	Ms Sarah Myers
Project Director	COL John McLean **(Oct 16 – Dec 17)** **LTCOL Dave Hughes (Acting Dec 17 – Jan 18)** **COL John-Paul Ouvrier (Jan 18 – current)**

Project Data Summary Sheet[130]

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 2nd Pass Approval	**$1,156.5m**
Total Approved Budget (Current)	**$1,433.3m**
2017-18 Budget	**$69.2m**
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 will be operated by 35 Squadron with its Interim Main Operating Base (MOB) at Royal Australian Air Force (RAAF) Base Richmond. Government agreed in May 2016 to both delay Final Operating Capability (FOC) and the relocation of the C-27J to RAAF Amberley 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 Year End underspend of $7.5m was largely driven by adjusted forecasts for the Interim and Mature Training Systems, revisions to the Structural Substantiation Program, and delays against contract milestones for the fitment of Mode 5 Identification Friend or Foe equipment, resulting from Commonwealth requirements changes; these were offset by higher-than-forecast expenditure associated with commercial spares procurements, and foreign exchange losses over the year.

Project Financial Assurance Statement

As at 30 June 2018, 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.

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 to 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. The most significant milestones achieved in financial year **2017-18** include delivery of **the final three C-27J aircraft (A34-008, A34-009**

130 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.

and A34-010), establishment of an interim training system based in Australia, contract signature for a Mode 5 Identification Friend or Foe (Mode 5 IFF) upgrade with Leonardo, and contract signature on 15 November 2017 for Through Life Support services with Northrup Grumman Australia (NGA).

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.

Note

The capability assessments and forecasts by the Project are not subject to the ANAO's assurance 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 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.

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.

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.

Sustainment. The availability of spares, and Support and Test Equipment under the FMS case has not met the requirements of the Commonwealth. The US Government and L-3 are working to deliver all spares on order under the FMS Case expeditiously. The project has reviewed the Logistics Support System including a detailed analysis of the future requirements for spare parts and Support and Test Equipment, the supply pipeline, delivery timeframes and stock levels to improve the operational availability. As a result, the project redirected a range of acquisitions away from the FMS case to the aircraft Original Equipment Manufacturer and other suppliers through direct commercial sales. The project has placed final orders for spares and support and test equipment to be acquired as part of the project. A Through Life Support (TLS) contract with Northrop Grumman was signed in November 2017 with services commencing in January 2018.

Facilities. Delays in approval for construction of the new 35 Squadron facilities at RAAF Amberley currently represent a low risk to FOC. 35 Squadron is currently planning to relocate to RAAF Amberley into the new facilities in 2019.

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. The requirement to move the training facility from Robins AFB to L-3 facilities at Waco and Arlington has had an impact on acquisition cost and schedule. The impact to cost will be understood once contracts are finalised between the US Government and L-3; until final cost impact is known, there remains additional risk to the overall project budget.

US Government **contracting.** As a result of US divestiture and downsizing of the domestic USAF program office, the contracting processes to establish initial training and support arrangements took longer than planned, which has had an impact on project schedule and affordability.

Aircraft production delays. The risk of aircraft production delays was not anticipated to represent a significant risk to project IOC or FOC given the significant schedule contingency contained in the original production schedule. However, Leonardo's decision in May 2015, based on commercial considerations, to close its Naples C-27J fuselage production facility and consolidate all C-27J production at its Turin facility delayed delivery of Aircraft 5 through 10 by up to 19 months. The magnitude of production restructure made the December 2017 FOC date unachievable. Leonardo applied additional resources in an effort to recover the schedule where possible and have now completed aircraft production to the revised approved schedule.

IMR/IOC caveats. Achievement of these milestones were declared with caveats relating to deficiencies in supply support and training courseware, which have been resolved.

Spares availability. The availability of spares and Support and Test Equipment delivered under the FMS case has not met the requirements of the Commonwealth.

Other Current Sub-Projects

N/A.

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	
Oct 17	Exchange Variation		276.8	
Oct 17	**Total Budget**		1,433.3	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – US Government	(633.1)		1
	Contract Expenditure – Leonardo	(50.1)		1
	Other Contract Payments/Internal Expenses	(40.6)		3
			(723.8)	
FY to Jun 18	Contract Expenditure – US Government	(15.0)		1
	Contract Expenditure – Leonardo	(16.4)		1
	Intellectual Property and Technical Data			
	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	(23.0)		3
			(61.7)	
Jun 18	**Total Expenditure**		(785.5)	
Jun 18	**Remaining Budget**		647.8	

Notes

1. The scope of this contract 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: Support and Test Equipment, spares and global freight costs ($13.9m), contractor support costs for Structural Substantiation Program, loadmaster seat development and certification purposes ($4.1m), operating expenditure related to initial sustainment costs ($2.6m), and other project management and administrative costs also contribute to other expenditure ($2.5m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
78.0	68.4	69.2	PBS - PAES: The variation is primarily due to reprogramming of spend associated with **proposed aircraft modification contracts, revised delivery schedules for commercial spares and support equipment procurements, and refinement of training systems requirements.** PAES - Final Plan: **Variance is due to foreign exchange updates to Project Approval.**
Variance $m	(9.6)	0.8	Total Variance ($m): (8.8)
Variance %	(12.3)	1.2	Total Variance (%):(11.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.2	Australian Industry	**Year End Variance was largely driven by adjusted forecasts for Interim and Mature Training System requirements, revisions to the Structural Substantiation Program, and delays within the Mode 5 IFF contract milestones; these were partially offset by higher-than-forecast spend associated with commercial spares procurements, and foreign exchange losses over the year to date. Other minor variances also apply.**
		0.4	Foreign Industry	
			Early Processes	
		(8.6)	Defence Processes	
		0.5	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
69.2	61.7	(7.5)	**Total Variance**	
		(10.9)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
US Government	May 12	882.4	**682.5**	Reimbursement	FMS	1,2,3, **6**
Leonardo	May 12	62.0	**71.9**	Firm Price	Modified ASDEFCON (Complex)	1,**2**
Leonardo	**Sept 17**	**18.7**	**19.3**	**Firm Price**	**ASDEFCON (Complex)**	**1,2,4**
Leonardo	**Dec 17**	**16.9**	**17.4**	**Firm Price**	**ADEFCON (Shortform Goods)**	**1,2,5**

Notes	
1	Contract value as at **30 June 2018** is based on actual expenditure to **30 June 2018** 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	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.
4	**Mode 5 IFF upgrade contract.**
5	**Aircraft Fuselage contract.**
6	**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.**

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
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**	

Major equipment received and quantities to 30 Jun 18

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.
2	The Project expects to approach the market to procure a suitable flight simulator in **Quarter 1 2019** following the completion of future aircraft baseline configuration planning.

3.2 Contractor Test and Evaluation Progress

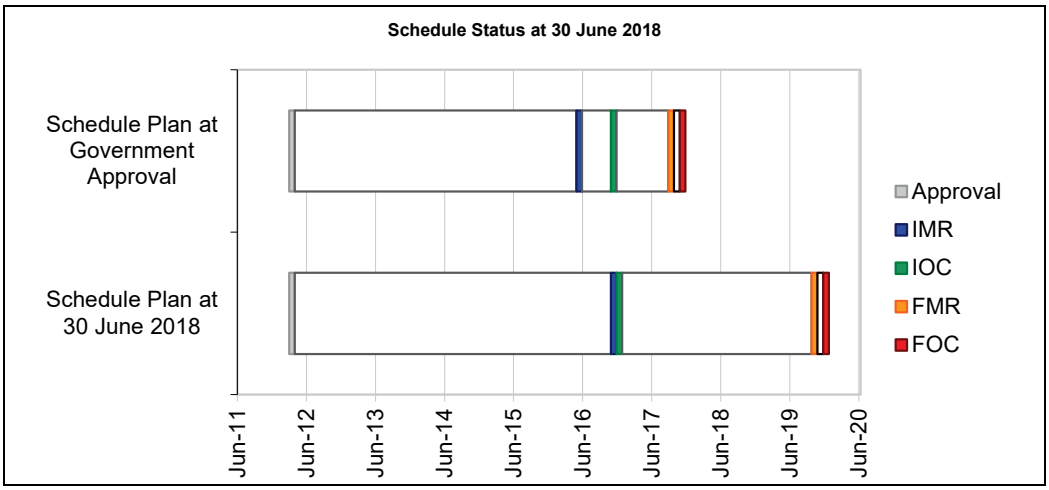
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Acceptance	C-27J Aircraft 1 (A34-001)	Jul 14	N/A	Nov 14	4	
	C-27J Aircraft 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 3 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

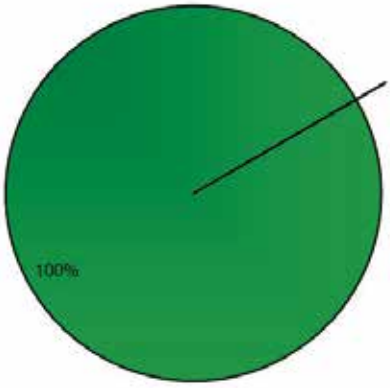
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Mar 15	Jun 15	3	1
Initial Materiel Release (IMR)	Jun 16	Dec 16	6	2
Initial Operational Capability (IOC)	Dec 16	Dec 16	0	3
Final Materiel Release (FMR)	Oct 17	Oct 19	24	4
Final Operational Capability (FOC)	Dec 17	Dec 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. These changes are **included** in project management documentation.



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 materiel requirements as per the Joint Project Directive, Materiel Acquisition Agreement and relevant Technical Regulatory Authority, including supply support and training courseware described at IMR issues, which have been resolved. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart does not necessarily represent capability achieved. The capability assessments and forecasts by the Project are not subject to the ANAO's assurance review.	

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).	Achieved with caveats
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

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 has been 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. 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. The Project monitored the sustainment TLS provider ramp up forecasting possible additional workload prior to the TLS provider reaching certified engineering entity status. Management and mitigation activities for the whole of project affordability assess the risk to achieving capability requirements as low.
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.	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. The project continues to investigate options to deliver a Mature Training System at RAAF Amberley. During 2016-17 the Government agreed that alternative approaches to FMS are required. 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.
Sustainment. The availability of spares, Support and Test Equipment may not meet the requirements of the Commonwealth. The project has undertaken a detailed analysis of future requirements for spare parts and Support and Test Equipment to improve the operational availability.	The project is working closely with the Air Force to manage critical spares, and Support and Test Equipment. The project has: moved new orders away from the US FMS case to direct commercial arrangements, which have demonstrated shorter lead times; utilised airfreight to expedite delivery; and worked with Air Mobility Group for emerging requirements. The Support and Test Equipment risk has reduced due to the advanced status of the capability and no reports which suggest S&TE posture is insufficient to support aircraft operations. The Commonwealth has contracted with Northrup Grumman Australia for C-27J Through Life Support (TLS); both parties are working together to deliver the remaining spares and support and test equipment. Associated risks have all reduced from High to Medium with mitigation actions proactively implemented and closely managed.
Facilities. Delays in approval for construction of the new 35 Squadron training facilities at RAAF Amberley currently represent a low risk to FOC.	The Training Support Facility is now complete at RAAF Amberley, and has been accepted by the project. Government approved a decoupling of mature training to FOC and it will now be delivered post FOC. As a result this risk has now been closed.
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues –

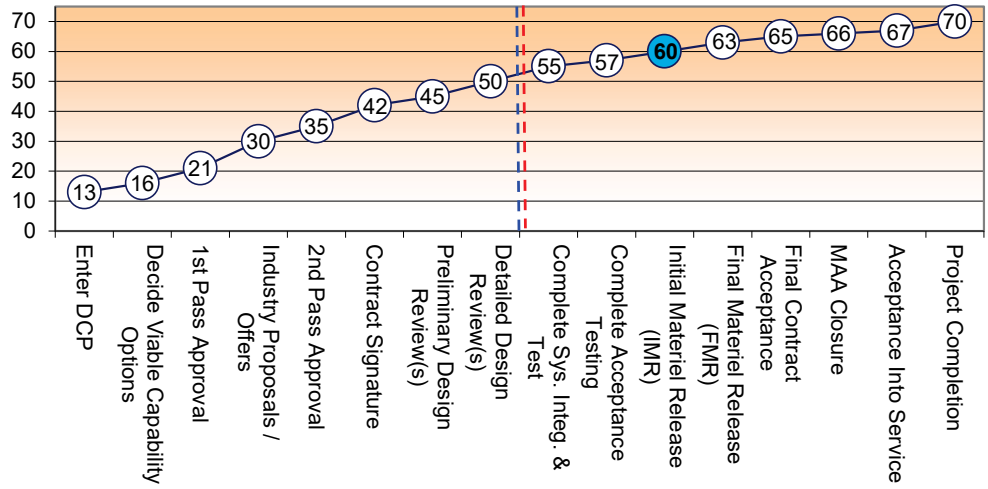
Description	Remedial Action
USAF Divestiture of C-27J. The USAF C-27J divestiture has had a greater than anticipated impact on project budget and schedule. Accelerated USAF divestiture resulted in incomplete Military Type Certification (MTC) by the USAF with unanticipated impact on airworthiness and training outcomes.	Completion of MTC has required additional Project resourcing to achieve FOC on schedule. The delayed start to training in the US translated to a three month delay to achievement of the planned ISD at 35 Squadron.

	Finalisation and **closure of the US-based initial training system has occurred and the interim training system was established in Australia in July 2017.** The final impact to cost will be understood once the mature training system contracts have been finalised.
US Government contracting. The USAF's contracting processes to establish initial training and support arrangements took longer than planned, which has had an impact on project schedule and affordability.	The project **worked** closely with the USAF FMS Program Office to contain the **initial training** cost and schedule impact. **Initial training and associated support arrangements in the US ceased in July 2017.** **As a result this issue has now been closed.**
Aircraft production **delays**. **As a result of USG's divestiture,** Leonardo made a commercial decision to consolidate all C-27J production into its Turin facility. The decision **affected** delivery of aircraft 5 through 10 by up to **19** months. The magnitude of the production restructure **was expected** to make the December 2017 FOC date unachievable.	The Government was advised of Leonardo's production restructure in 2016 and agreed to an updated FOC of December 2019. The Project engaged USAF, L-3 and Leonardo to convey the Commonwealth of Australia's requirement to improve the aircraft production schedule. **After the project rebaselined the schedule, Leonardo and L-3 applied additional resources to successfully deliver all ten aircraft by December 2017 (the original Government approved FOC date).** **As a result this issue has now been closed.**
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 is continuing to work closely with the USAF FMS Program Office and L-3 to minimise delays to the delivery of spares and Support and Test Equipment. The project is also acquiring spares via direct commercial arrangements to improve delivery schedules for critical items.
Aircrew and Maintenance Training systems (caveat). Deficiencies were identified in the US-based training requiring additional training for aircrew and maintenance personnel in Australia.	The deficiencies in US-based training **were** managed in Australia by the project office in conjunction with Air Mobility Group under the aircrew 'Check to line' process and a similar process for 35 Squadron maintenance workforce certifications. **Training ceased** in the US in July 2017. Aircrew ground training **is now** conducted in Australia with the simulator element undertaken in Italy. All maintenance training **is now** undertaken in Australia **The Aircrew and Maintenance Training systems caveat against the achievement of IOC has now been removed due to the improved quality of training under the Commonwealth-managed training system.** **As a result this issue has now been closed.**
Logistics Support System (caveat). The Logistics Support System is established providing Authorised Engineering Organisation and Authorised Maintenance Organisations and Supply Support. The project has only partially met the support system requirements due to deficiencies in spares and Support and Test Equipment to support four aircraft operations at RAAF Richmond.	Deficiencies **in spares, and support and test equipment,** are being managed by the project office and Air Lift Systems Program Office **in order to** achieve a suitable level of support. **The Logistics Support Systems caveat against the achievement of IOC has now been removed, due to the increased number of spares receipted into the Commonwealth's supply system.** **As a result this issue has now been closed.**

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	6	8	8	9	6	9	53
	Explanation	• **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. • **Cost:** Progress of USAF contracting action has enabled FMS cost to be better understood. The costs are currently expected to be contained within the available contingency budget. • **Commercial:** Contractor is in the early stages of delivery and starting to demonstrate some degree of risk management necessary.							



2016-17 MPR Status - - - - 2017-18 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned –

Project Lesson	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

Section 8 – Project Line Management

8.1 Project Line Management in 2017-18

Position	Name
Division Head	AVM Catherine Roberts (Mar 16-current)
Branch Head	AIRCDRE Phil Tammen **(Jan 13 to Dec 17)** **AIRCDRE Graham Edwards (Dec 17-current)**
Project Director	GPCAPT Gerry van Leeuwen (Dec 15 **to Dec 17**) **GPCAPT Chris Ellison (Dec 17-current)**
Project Manager	WGCDR Jamie Scott (Jan 16-current)

Project Data Summary Sheet[131]

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 2nd Pass Approval	$1,004.6m
Total Approved Budget (Current)	$1,066.8m
2017-18 Budget	$277.0m
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's 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 $10.0m. This variance is primarily due to the reprogramming of training development, spares provisioning and other materiel procurement activities until later financial years. This reprogramming is in part a result of Navy's direction for commercial crew delivery of the AOR Ships to Australia. This proposed reprograming 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 2018, 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 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 SEA 1654 Phase 3 Project previously completed Critical Design Review (CDR) and cut steel of the AOR Ship 1 on schedule in June 2017.

Major SEA 1654 Phase 3 Project milestones achieved in 2017-18 include:

131 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.

- Keel Laying of the first AOR Ship, *Supply*, in November 2017;
- Cut Steel of the second AOR Ship, *Stalwart*, in April 2018;
- 35% Blocks Erected of *Supply*, with the 15th Block erected on the slipway in June 2018; and
- The successful completion of a number of contracted Mandated System Reviews (MSRs) including the Transition Requirements Review (TXRR) and Task Analysis Requirements Review (TARR) in December 2017, and the Integrated Baseline Review (IBR) in March 2018.

Production of the AOR Ships has continued to progress throughout 2017/18 in Spain, with ship launch of *Supply* currently forecast for the end of November 2018.

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* is expected to be launched in November 2018, with the launch of *Stalwart* scheduled for June 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*. The keel for *Supply* was laid 17 November 2017 with Final Operational Capability scheduled for 2022.

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 risks the SEA 1654 Phase 3 Project currently faces are:

- The risk to 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 and related Integrated Logistic Support (ILS) deliverables.;
- Management of subcontractor performance; and
- Alignment with Materiel Seaworthiness Assurance.

The project is also currently managing two key issues relating to:

- Delays to delivery and Approval of ILS deliverables are impacting the schedule leading up to the October 2019 Acceptance of the AOR Ship Support System and Operative Date (OD) of the Support Contract; and
- The responsibility for the Authorised Maintenance Organisation (AMO) and Authorised Engineering Organisation (AEO) in sustainment.

Other Current Sub-Projects

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	$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	3
Jun 16	Real Variation - Transfer		69.1	
Jun 18	Exchange Variation		(6.9)	
Jun 18	**Total Budget**		1,066.8	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Navantia S.A.	(58.6)		
	Contract Expenditure – Raytheon Australia	(20.6)		
	Other Contract Payments/Internal Expenses	(10.0)		4
			(89.2)	
FY to Jun 18	Contract Expenditure – Navantia S.A.	(264.9)		
	Other Contract Payments/Internal Expenses	(2.1)		5
			(267.0)	
Jun 18	**Total Expenditure**		(356.2)	
Jun 18	**Remaining Budget**		710.6	

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 Contract Change Proposals (CCPs) from Navy.
4	Other expenditure prior to 1 July 2017 predominately relates to pre-Second Pass RRDS activities ($6.9m) as well as Legal and other External Service Provider (ESP) services (1.6m).
5	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	Explanation of Material Movements
269.6	274.5	277.0	PBS-PAES: Project reprogramming other than slippage or acceleration, primarily due to updated forecast expenditure for prime contract price adjustment escalation payments and future training and spares provisioning payment milestones to be negotiated. PAES-Final Plan: Forex fluctuations.
Variance $m	4.9	2.5	Total Variance ($m): 7.4
Variance %	1.8	0.9	Total Variance (%): 2.7

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Variance is primarily due to the reprogramming of training development, spares provisioning and other materiel procurement activities until later financial years. This reprogramming is in part a result of Navy's direction for commercial crew delivery of the AOR Ships to Australia.
			Foreign Industry	
			Early Processes	
		(10.0)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
277.0	267.0	(10.0)	**Total Variance**	
		(3.6)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
Navantia S.A.	May 16	646.8	652.1	Fixed with indices escalation	ASDEFCON	1, 2, 3
Raytheon Australia	Nov 16	45.8	45.9	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, 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 2018 is based on actual expenditure to 30 June 2018 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 18		
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 18
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.

3.2 Contractor Test and Evaluation Progress

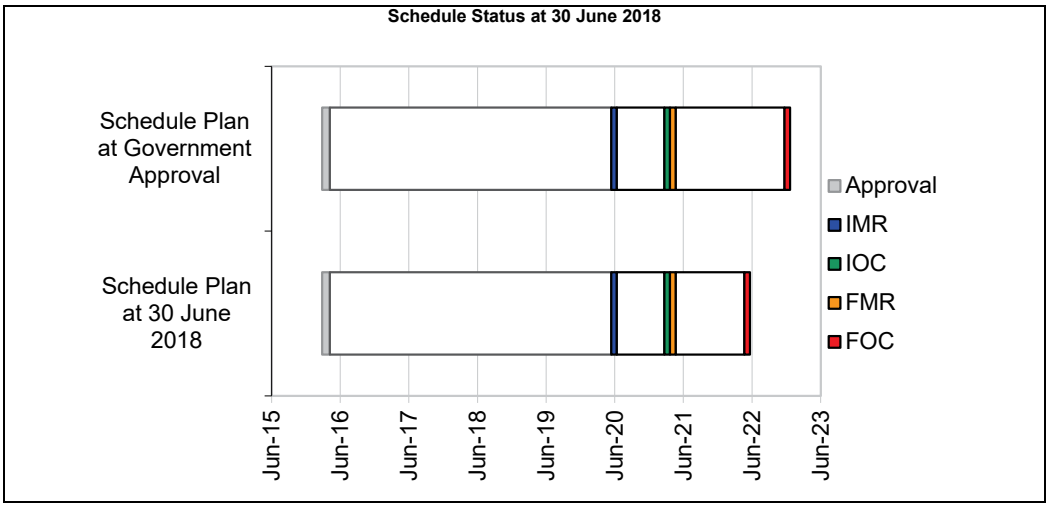
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Integration	AOR Ship 1	Aug 19	N/A	Sep 19	1	1, 2
	AOR Ship 2	May 20	N/A	Jun 20	1	1, 2
Acceptance	AOR Ship 1	Sep 19	N/A	Oct 19	1	
	AOR Ship 2	Jun 20	N/A	Jun 20	0	

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.

3.3 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	May 22	(7)	1

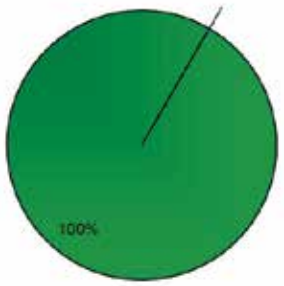
Notes	
1	Current early forecast achievement of FOC aligns with the latest SEA1654 Phase 3 Integrated Project Management Planning documentation



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 expects to meet the Materiel Capability Requirements as expressed in the Materiel Acquisition Agreement. **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)	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.

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.

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 SEA1654 Phase 3 Project may not meet Navy's forecast date for introduction into service for the first AOR Ship, *Supply,* as a result of the current delays and deficiencies associated with the LSA program and related ILS deliverables.	The SEA1654 Phase 3 Project has agreed LSA corrective actions with Navantia for current omissions and defects of ILS deliverables to ensure fitness for purpose in time for IOR of Ship 1, *Supply*. Navy direction for the commercial crew delivery of the AOR Ships from Spain to Australia will likely reduce the risk to schedule for introduction into service due to the resultant shift in scheduled training and in service support activities.
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.	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. CASG senior management engagement as required to ensure the performance of subcontractors to meet the fitness for purpose of the AOR Ships.
There is a chance that Materiel Seaworthiness Assurance planning does not align with the SEA1654 Phase 3 Project contracted acquisition scope.	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.

Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

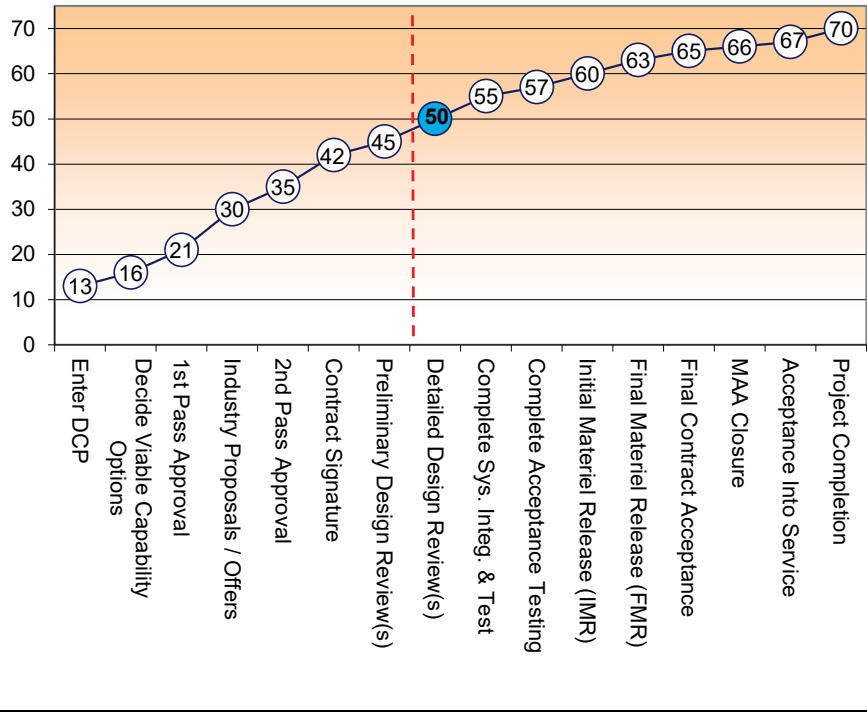
Description	Remedial Action
Delays and deficiencies associated with a range of Integrated Logistic Support (ILS) Supplies, incorporating the necessary Technical Data (TD) furnished from subcontracted vendors, is impacting the delivery of the acquisition Support System, contractor Transition/Phase-In activities, and achievement of the OD of the Support Contract.	The SEA1654 Phase 3 Project has agreed LSA corrective actions with Navantia prior to submission of future ILS deliverables for Commonwealth review. This mitigation includes the implementation of a number of steps including improved quality processes and engagement of experienced local Australian industry by Navantia. This issue currently has no realised impact on the forecast schedule for the Materiel Release and Operational Capability Milestones of the AOR Ships.
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.	The SEA1654 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.

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	7	7	7	49
	Explanation	• **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 are still under development pending the completion of logistics support analysis by Navantia.							



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 in 2017–18

Position	Name
Division Head	Mr Patrick Fitzpatrick (Acting to Aug 17) RADM Anthony Dalton (Aug 17 - current)
Branch Head	Mr Peter Croser
Project Director/Manager	Mr Gary McFarlane (to Sep 2017) Mr Graham Dean (Acting Sep 17 – May 18) Mr Chris Horner (May 2018 – current)

Project Data Summary Sheet[132]

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 2nd Pass Approval	$731.4m
Total Approved Budget (Current)	$974.2m
2017–18 Budget	$94.4m
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

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.

Cost Performance

In-year

In-year expenditure is $94.1m against a budget of $94.4m. **The underspend is due to a delay in the receipt of the final joint Legal Invoice plus minor variations against the ISC Contract and Project Management Expenses.**

Project Financial Assurance Statement

As at 30 June 2018, 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

Contract signature with Thales was originally anticipated for October 2015; however, this did not occur until February 2018, over two years later than expected. The 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. Defence obtained approval for a Real Cost Increase (RCI) to its Second Pass budget in February 2018 on the basis of an updated fixed price Defence contribution to the CMATS program.

In light of the delays experienced reaching contract signature, an executable schedule that fits within the original Defence Second Pass approved Materiel Acquisition Agreement (MAA) milestone dates and associated scope definition for the AIR 5431 Phase 3 Initial Operational Capability (IOC) is not achievable. Prior to 30 June 2017, Defence assessed achievement of IOC and Final Operational Capability (FOC) within the window agreed at Second Pass as high risk. Based on the contract delivery schedule on the date of contract signature, reforecast IOC is November 2022 and FOC is October 2025. The reforecast dates will be verified once Thales achieves Integrated Baseline Review and the milestone dates are accepted by Airservices and Defence.

132 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

CMATS has not delivered any materiel capability to date. System Requirements Analysis (conducted under Advanced Work Order (AWO) 2) was completed in January 2018, and System Definition Review is forecast for the last quarter of 2018. As a result of affordability constraints, Defence has agreed to 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.

Low schedule maturity continues to be a source of risk to both the IOC and FOC delivery and is not likely to be remediated until Thales achieves Integrated Baseline Review.

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
- 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 AIR5431 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 it became evident that Defence could no longer rely on the NTE and steps were taken by Defence to formally reprioritise funds within the Integrated Investment Portfolio (IIP) to address a price increase to Defence's CMATS contribution. 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.

Airservices and Defence conducted an approach to market in June 2013 and commenced negotiations with Thales in February 2015. The approach undertaken by Airservices and Defence was to adopt a five stage negotiation methodology to expose technical, schedule, commercial and cost risks upfront in order to achieve a compliant, value for money outcome for both Defence and Airservices, and consequently a smoother journey once in contract. Phases A and B involved clarification and remediation of non-compliances in the tendered bid in order to obtain a refined offer from the preferred tenderer (Phase C). Phase D provided for the implementation of the AWSA to advance necessary engineering work to reduce schedule and technical risk in the acquisition contract. Airservices entered Phase E critical negotiations in December 2016 and this concluded with Airservices signing both acquisition and support contracts with Thales in February 2018.

The joint civil-military acquisition originally intended to procure a largely 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 are no similar civil-military Air Traffic Management systems fielded elsewhere in the world. Following a long and drawn-out negotiation process, Thales priced a large amount of risk into the fixed price offer to cover uncertainty in software development and site implementation. In order to better manage this risk premium, both parties agreed to move from a Fixed Price to a Target Price Incentive contract. This has the effect of incentivising Thales to deliver the capability at the lowest price possible as risk is only paid for in the event it is realised.

The Target Price Incentive model, along with improved relational governance arrangements built into the contract, 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) initially established between Defence and Airservices in June 2015 and subsequently updated and resigned in February 2018. In addition to defining the on-supply to Defence of the Defence supplies and services delivered to Airservices by Thales, the revised 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 has been 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.

In August 2017 the Minister for Defence agreed with the Minister for Defence Industry and Minister for Infrastructure and Transport that AIR 5431 Phase 3 would be added to Defence's Project of Concern list. Following the announcement that Airservices had signed acquisition and support contracts with Thales in February 2018, the Minister for Defence announced that OneSKY would be removed from the Projects of Concern list having now met the criteria for withdrawal. AIR 5431 Phase 3 was formally removed from the Projects of Concern list on 8 May 2018. 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.

As a result of achievement of System Requirements Review (SRR), contract execution and approval of an RCI, a number of risks and issues previously disclosed have either been retired or reassessed and downgraded to a rating lower than high or extreme.

Significant risks that require ongoing active management as the joint project enters contract execution include:

- Poor provision of Customer Furnished Materials, Information, Supplies and Services, including significant enabling interfaces such as AMACCS, and CIOG and E&IG infrastructure and networks.
- Security accreditation of CMATS may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting security requirements.
- Poor coordination between Airservices and Defence during development and implementation of the Defence/Airservices network gateway may impact delivery and performance of dependent Customer Furnished Services (CFS).
- Agreement to consolidate Darwin and Townsville approach services into the Airservices Brisbane approach centre, Oakey approach services into Amberley approach centre and removal of four Defence towers (Richmond, Edinburgh, Gin Gin and Oakey) from CMATS scope in absence of detailed definition and planning, may result in capability impacts/gaps for Defence, delay to the finalisation of Engineering Change Proposals (ECPs), impact the completeness of System Design Review (SDR) and create dependency complexity.
- 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.
- 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.
- 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.
- Implementation of CMATS within the Defence ATM environment may be impacted by the functional availability of external Defence and AIR 5431PH3 delivered systems, potentially limiting the ability of the Defence portion of the ATM solution to meet regulatory and licencing requirements.

The current issues impacting Airservices and Defence individually and jointly include:

- Insufficient dependent AMACCS system assets during CMATS introduction into service will impact current operations. - The configuration/data management policies, procedures and processes **are not suitably established and embedded** to effectively implement the Program's configuration and data management activities **and obligations**.
Other Current Sub-Projects AIR5431 Phase 1 – Deployable Air Traffic Control (ATC) Capability will introduce Deployable Air Traffic Management (ATM) command and control systems into the ADF inventory. AIR5431 Phase 2 – Fixed Base ATC Replacement Capability will replace the existing fixed base defence ATC surveillance radars.
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 14	Original Approved **(Second Pass Approval)**		731.4	
Dec 17	**Real Variation – Budgetary Adjustment**		**(6.8)**	**1**
Feb 18	**Real Variation – Real Cost Increase**		**247.5**	**2**
	Exchange Variation		**2.1**	
Jun 18	**Total Budget**		**974.2**	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure - Airservices Australia	(**43.3**)		
	Contract Expenditure - Jacobs Australia	(**14.2**)		
	Other Contract Payments/Internal Expenses	(**3.5**)		3
			(61.0)	
FY to Jun 18	Contract Expenditure - Airservices Australia	(**84.5**)		
	Contract Expenditure - Jacobs Australia	(**7.3**)		
	Other Contract Payments/Internal Expenses	(**2.3**)		3
			(94.1)	
Jun 18	**Total Expenditure**		**(155.1)**	
Jun 18	**Remaining Budget**		**819.1**	

Notes	
1	**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.**
2	**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.**
3	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
66.4	**70.0**	**94.4**	PBS - PAES : **The variation is due to additional requirements for Australian Military Airspace Control Communications System enhancements.** PAES- Final Plan: **The Variation is as a result of the payment Schedule agreed with Airservices at contract signature.**
Variance $m	**3.6**	**24.4**	Total Variance ($m): **28.0**
Variance %	**5.4**	**34.9**	Total Variance (%): 42.**2**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.2)	Australian Industry	Year end spend is consistent with the payment profile agreed with Airservices in the On-supply Agreement signed on 22 February 2018. The underachievement is due to late presentation of the Final Legal Invoice by Airservices and minor variations in Project Management and ISC Contract Expenditure.
			Foreign Industry	
			Early Processes	
		(0.1)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
94.4	94.1	(0.3)	**Total Variance**	
		(0.3)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
Jacobs Australia	Dec 14	107.7	108.4	Variable	Modified ASDEFCON	2
Airservices Australia	Feb 18	521.0m	521.0	Fixed	On Supply Agreement	1,2

Notes

1. CMATS will be procured via contracts between Airservices and the designated tenderer Thales Australia (Thales). Airservices will manage both the acquisition and support contracts with Thales on behalf of Defence through an OSA established between Defence and Airservices in February 2018.
2. Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
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.	1

Major equipment received and quantities to 30 Jun 18

Nil.

Notes

1. 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
Critical Design Rz	CMATS	Apr 20	N/A	Apr 20	0	2,3

Notes

1. Airservices entered into contract 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 six 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.

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	N/A	Jan 22	0	
	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	N/A	Oct 22	0	
	RAAF Base Gingin – FATS	Oct 22	TBA	TBA	0	2
	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	N/A	Nov 23	0	
	Naval Air Station Nowra – CMATS	Mar 24	N/A	Mar 24	0	
	RAAF Base Williamtown – CMATS	Apr 24	N/A	Apr 24	0	
	RAAF Base Darwin – CMATS	Apr 24	N/A	Apr 24	0	
	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

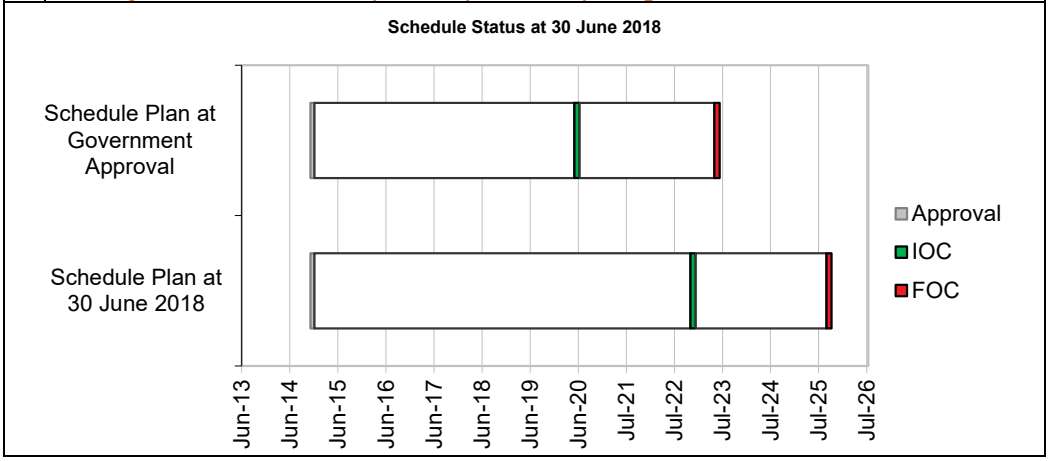
1	These dates are expected to be updated once the Integrated Baseline Review is complete.
2	The Current Planned and Forecast dates are expected to be updated once the FATS agreement is in place.
3	Rz System Acceptance includes East Sale Tower and Approach (including the School of Air Traffic Control (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.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	TBA	TBA	TBA	1
Initial Operational Capability (IOC)	Jun 20	Nov 22	29	2
Final Materiel Release (FMR)	TBA	TBA	TBA	1
Final Operational Capability (FOC)	Jun 23	Oct 25	28	2

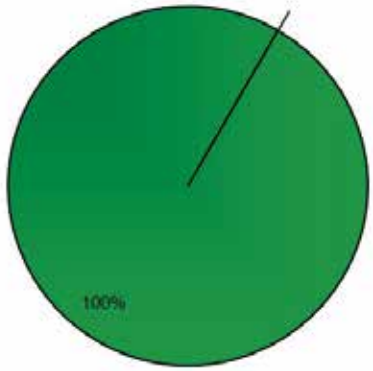
Notes

1	The IMR and FMR milestones are expected to be updated once a revised MAA is agreed.
2	The delay to IOC and FOC is due to a protracted period of complex negotiations between the customer and Thales.



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 expects to meet the capability requirements as expressed in the Joint Project Directive, Materiel Acquisition Agreement and relevant Technical Regulatory Authority. **While a number of Defence related scope changes have been agreed (i.e. Airservices supplying an alternate non-CMATS Tower solution at four Defence sites – 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) these will not impact on the safe delivery of Defence air traffic services.** **Amber:** N/A **Red:** N/A
Note	
This Pie Chart does not necessarily represent capability achieved. The capability assessments and forecasts by Defence are not subject to the ANAO's assurance review.	

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 TBA **once the revised MAA is agreed.**	Not yet achieved
Final Materiel Release (FMR)	Delivery of all CMATS material system elements configured to the final system build. Forecast achievement date TBA **once the revised MAA is agreed**.	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, particularly with CIOG and E&IG infrastructure and networks, will result in the customer impacting the contracted schedule.	The Project continues to engage with service providers **to** bring forward definition and remediation of CMATS interfaces, networks and planned infrastructure in order to reduce the likelihood of delay during site rollout of the system. **All interfaces are supported by a delivery plan that has been agreed with the interface supplier.**
Delays **in obtaining scope and funding approval to progress the** procurement of the AMACCS transition solution **may result in** insufficient AGA assets to enable CMATS transition within the agreed contract schedule.	Progress urgent acquisition of AMACCS **design and** equipment with additional project funding **approved by** Government.
Contractor under-performance in delivering the Advanced Work Order's has raised concern over their capacity to effectively deliver the CMATS under the main acquisition contract and has increased the likelihood of inefficiencies resulting in schedule and cost impacts.	**This risk has been reassessed as medium as the contracts with Thales have embedded** strong contractor/customer collaborative arrangements **to** drive positive contractor and customer performance. **This is applied in the form of a customer/contractor Project Review Board in addition to the performance measures administered under the Target Price Incentive model.**
The current approach to aggregate CMATS data within the Defence network may not satisfy the requirements for the Civil Aviation Safety Authority (CASA) accreditation.	**The management of this risk is being addressed through an established Network Working Group to assess whether** the Defence network architecture **is able to meet** necessary regulatory/safety requirements **and determine what specific characteristics the network will require to be acceptable**.

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.	Engage an INFOSEC Registered Assessors Program (IRAP) assessor to better understand the accreditation issues within the current system and approach, outputs from this activity will assist joint security working group to develop the CMATS accreditation plan.
Delivery of CMATS may be impacted by dependent Airservices and Defence organisational inefficiencies, driven by divergent goals, mismatch of delegations or lack of oversight and control, leading to a breach of cost and schedule thresholds for the Defence portion of the CMATS project.	**This risk has been downgraded to medium due to execution of a new OSA in February 2018 which agrees a governance structure designed to ensure** operational alignment **between the OSA** and **acquisition contract, including the implementation of** problem resolution clauses **to which Defence maintains a membership.**
Insufficient or inappropriate evidence to support the safety argument could result in the CMATS capability, including sub-systems and software, failing to meet assurance requirements and obtain regulator CASA approval.	**This risk has been downgraded to medium due to improved engagement with both CASA and Defence Aviation Safety Authority (DASA), appointment of a Design Authority within OneSKY and a collective view that the current controls are effective.**
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
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).	**Ensure a formal agreement is established between CIOG and Airservices (Information Management & Technology division) outlining the requirements and related communications infrastructure required for the Defence/Airservices network gateway.**
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 result in delays to the finalisation of Engineering Change Proposals (ECPs), impact the completeness of SDR and create dependency complexity.	**The OSA established the high-level agreement for the CMATS scope changes. In line with this agreement, progress detailed definition of the required ECPs to remove and/or change the CMATS requirements as well as identify and agree requirements outside of CMATS to reflect the agreed scope changes. Establish a team to work with Airservices to develop the agreement to deliver the FATS.**
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.	**The Customer and Supplier engage regularly on program status and performance through the Program Review Board. This collaborative decision-making forum can enact remediation actions to ensure issues are efficiently resolved, activities are de-conflicted and priorities leading to SDR achievement are established.**
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.	**The Customer and Supplier engage regularly on program status and performance through the Program Review Board. This collaborative decision-making forum can enact remediation actions and enforce the terms and obligations established in the CMATS contract.**
Implementation of CMATS within the Defence ATM environment may be impacted by the functional availability of external Defence and AIR5431PH3 delivered systems, potentially limiting the ability of the Defence portion of the ATM solution to meet regulatory and licencing requirements.	**Identification and analysis of the Defence ATM functions necessary to meet CMATS system availability requirements is underway. Each function will undergo end-to-end analysis to establish those that don't meet the availability requirements and identify possible mitigation options for shortfalls.**

5.2 Major Project Issues

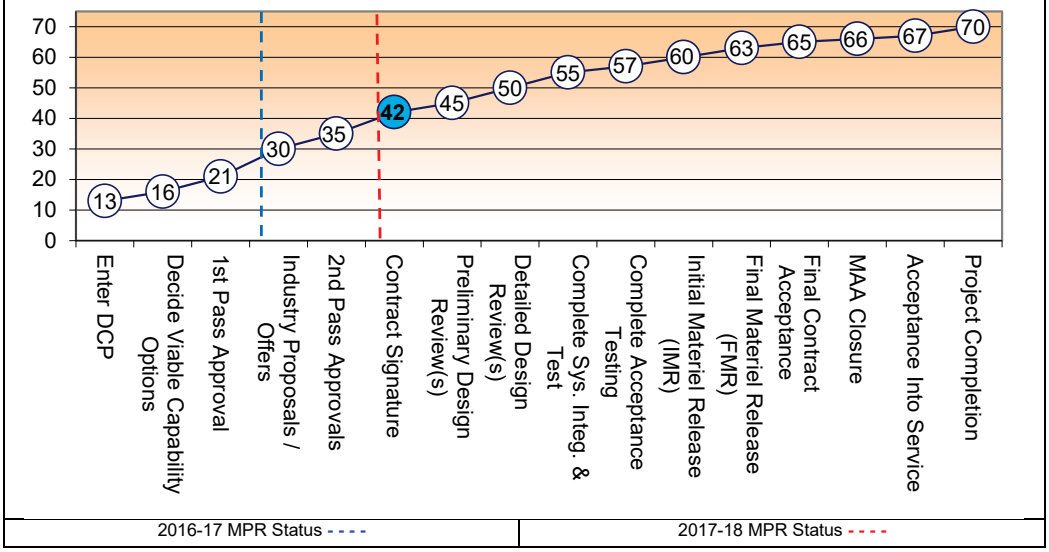
Description	Remedial Action
The funds required to execute the acquisition and sustainment contracts has exceeded the funds approved at Second Pass, this has occurred due to an underestimation of the cost of a harmonised capability and furthermore as a result of preferred supplier cost escalations during negotiation.	**This issue has been retired as a result of Defence and Airservices' agreement to a variety of scope rationalisation opportunities which have enabled Airservices to cap Defence's cost exposure. An RCI for AIR 5431PH3 was approved by Government in February 2018 on this basis.**
Organisational differences between Airservices and Defence impact joint program team efficiency and performance. Airservices' change program has resulted in significant redundancies within the CMATS program team, this has led to a greater reliance on Defence to resource the program in order to maintain momentum across parallel streams of work.	**This issue was retired upon execution of the revised OSA in February 2018. Risks associated with residual casual factors are being managed in accordance with the risk management plan.**

AIR 5431 Phase 3 is unable to introduce CMATS into service without impacting current operations due to insufficient dependent AMACCS system assets.	While Government has now approved both scope and funding increases for AIR 5431 Phase 3 to progress with procuring identified AMACCS assets, a procurement activity has yet to commence and there is uncertainty around industry's ability to meet delivery timeframes ahead of CMATS site rollout.
E&IG delays to delivery of Airfield Systems Interfaces (ASI) will delay CMATS activation.	This issue has been retired due to new agreed delivery dates as a result of OSA execution resulting in schedule relief for E&IG to develop an end-to-end plan and deliver ASI.
Delays in Airservices dependant projects delivering Airservices CFS, will impact delivery of CFS to the Contractor System Verification Facility (CSVF) at SDR plus 3 months.	This issue has been retired due to new agreed delivery dates as a result of OSA execution resulting in schedule relief for both Airservices and CIOG to undertake the required planning and design to enable CFS to be delivered when required by the contract. Risks associated with residual casual factors are being managed in accordance with the risk management plan.
ADATS will now require a life-of-type extension to ensure ongoing reliable operations until transition to CMATS can be achieved. This is due to delays in achieving executable contracts with Thales.	This issue has been retired due to the approval of an RCI to the AIR 5431 Phase 3 budget, in which the ADATS life-of-type extension requirements were considered and agreed.
A lack of clarity of scope allocated between CIOG and Thales, resulted in a number of facilities and site support activities not being accounted for in Defence project estimates.	This issue has been retired due to the approval of an RCI to the AIR5431 Phase 3 budget, in which the unaccounted facilities and site support requirements received funding approval.
The joint program has yet to define configuration/data management policies, procedures 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 has been limited.

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	6	6	6	6	6	6	6	42
Contract Signature	Project Status	5	6	6	6	6	6	6	41
	Explanation	• 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.							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	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**

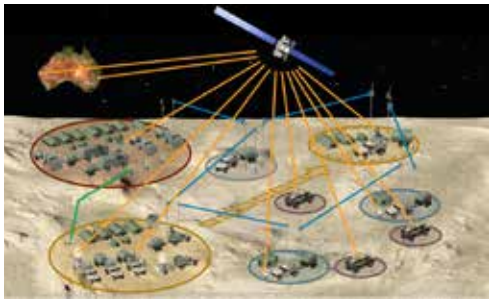
Section 8 – Project Line Management

8.1 Project Line Management in 2017-18

Position	Name
Division Head	RADM Tony Dalton **(Nov 15 Aug 17)** **Mr Ivan Zlabur (Sep 17 – current)**
Branch Head	AIRCDRE Sally Pearson **(Sep15-Dec17)** **AIRCDRE Phil Tammen (Dec 17-current)**
Project Director	GPCAPT Dick Haines
Project Manager	Ms Georgia Miles

Project Data Summary Sheet[133]

Project Number	**LAND 2072 Phase 2B[134]**
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 2nd Pass Approval	$915.7m
Total Approved Budget (Current)	$920.1m
2017-18 Budget	$145.6m
Project Stage	Initial Materiel Release
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND (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 Airforce. LAND 2072 Phase 2B shall deliver the Integrated Battlefield Telecommunications Network (I-BTN) in two capability Releases. Release 1 shall provide transit case nodes, and Release 2 shall expand on Release 1 to 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) are responsible for design, verification, procurement and delivery of the eDLAN. LAND 2072 Phase 2B is providing supplementary funding to JC4ISPO for the procurement of additional eDLAN systems.

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 $136.3m against a budget of $145.6m with the underspend of $9.3m due to late delivery of enhanced Deployable Local Area Networks (eDLAN) hardware and software, and reduced cost of initial spares acquisition, though offset by early achievement of equipment delivery milestones.

[133] 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 Review Report by the Auditor-General* in **Part 3** of this report.

[134] 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.

Project Financial Assurance Statement

As at 30 June 2018, 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 primarily for the treatment of Interface Control and Integration risks to capabilities being delivered by other projects.

Schedule Performance

Boeing Defence Australia (Boeing) is required to integrate a number of capabilities being delivered by other projects into their 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

Release 2 capability design has commenced and Boeing is currently on schedule, however ongoing delay to interfacing projects may result in delay to Land 2072 Phase 2B. Preliminary and Detailed Design reviews are scheduled to occur in the second half of 2018.

Materiel Capability Delivery Performance

IMR, as defined in the contract, Boeing achieved System Acceptance - Release 1 in December 2017, allowing the Capability Manager to declare IMR in February 2018. The Capability Manager endorsed the achievement of IMR 1A (I-BTN), as detailed in the MAA, in February 2018. Boeing are on schedule to deliver future releases of the contracted capability.

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 two 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 a Vehicle Mounted capability and includes the HQOTM, Medium Mounted Satellite Communications capability as well as the full NPMS capability. Completion of delivery of Release 2 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 has a three year initial contract award period with a rolling wave of one year extensions to a maximum of 12 years. The operative date of the Support Contract is aligned to achievement of IMR 1A.

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 two capability releases across five years.

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 their system with existing satellite bearer systems and IT systems that have been delivered by other projects within CASG and CIOG.

Major Risks and Issues

The most critical risks facing the project are associated with its dependency on other projects. Several critical dependencies relate to network architectures and physical platforms which, if delayed, may lead to cost and schedule impacts on LAND 2072 Phase 2B.

Technical risk also exists with some items of bespoke I-BTN capability under development in Release 2, which could lead to schedule delays.

There is significant risk in being able to successfully achieve Wideband Global Satellite (WGS) Certification for two of the I-BTN component capabilities within schedule.

The aggressive project delivery schedule for the Release 2 capability also presents a significant risk in being able to conduct all required training within schedule.

Finally, the Release 2 verification and validation schedule is dependent upon access to key Commonwealth provided services and facilities which are subject to competing priorities.

The major issues facing the LAND 2072 Phase 2B include technical incompatibilities with some interfacing capabilities and architectures, which are being remediated via development of alternative solutions and/or minor design modifications.

There is also a significant issue in terms of late delivery of prerequisite interfacing/gateway equipment from other projects (e.g. eDLAN), which is being addressed through the use of an interim eDLAN version and shifting of some I-BTN interfacing requirements from Release 1 to Release 2 in order to realign schedules.

The commencement of work on TRES, which requires an open RFT process, is not sufficiently resourced. This resourcing issue is currently forecast to impact FMR.

Other Current Sub-Projects

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.

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.

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.

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Oct 11	Original Approved	3.9		1
May 15	**Government Second Pass Approval**	911.8		4
	Total at Second Pass Approval		915.7	
Jun 18	Exchange Variation		4.4	
Jun 18	**Total Budget**		920.1	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Boeing Defence Australia	(110.9)		
	Contract Expenditure – Kellogg Brown and Root	(3.1)		
	Other Contract Payments/Internal Expenses	(82.0)		2
			(196.0)	
FY to Jun 18	Contract Expenditure – Boeing Defence Australia	(114.7)		
	Contract Expenditure – Kellogg Brown and Root	(2.7)		
	Other Contract Payments/Internal Expenses	(18.9)		3
			(136.3)	
Jun 18	**Total Expenditure**		(332.3)	
Jun 18	**Remaining Budget**		587.8	

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)) (47.6), software (17.8), ICT hardware & other equipment (10.6), technical and engineering services (3.7), Travel (1.2), legal fees (1.0).
3	Other expenditure includes: enhanced Deployable Local Area Network work packages 754 802 (Orders managed by JC4ISPO) (15.1), ICT hardware & other equipment (1.2) software (1.3) technical and engineering services (0.6), Travel (0.6), Other (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
177.8	167.9	145.6	PBS – PAES: Variation relates to the rescheduled delivery of the enhanced Deployable Local Area Networks capability. PAES – Final Plan: Variation relates to incorporation of Headquarters On The Move capability into Integrated Battlefield Telecommunications Network contract, revised delivery plan for spares acquisition and delays in delivery of enhanced deployable Local Area Networks.
Variance $m	(9.9)	(22.3)	Total Variance ($m): (32.3)
Variance %	(5.6)	(13.3)	Total Variance (%): (18.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(9.3)	Australian Industry	Underspend due to late delivery of enhanced Deployable Local Area Networks (eDLAN) hardware and software, and reduced cost of initial spares acquisition, though offset by early achievement of equipment delivery milestones.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
145.6	136.3	(9.3)	**Total Variance**	
		(6.4)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
Kellogg Brown Root (Integrated Support Contract)	Jul 15	9.6	11.5	Fixed	ASDEFCON (Services)	1,2
Boeing Defence Australia (I-BTN)	Sep 15	487.2	617.1	Fixed	ASDEFCON (Strategic Materiel)	1,3

Notes	
1	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	Increase in Contract Price due to CCP 1 for security certification and accreditation services, CCP's 2 and 3 for annual updates to labour rates and 4 for increased level of effort, additional communications engineers and additional security accreditation services to the Integrated Support Contract.
3	Increase in Contract Price due to CCP 4 for Headquarters on the Move, CCP 11 for Medium Satellite Terminal trailer, CCP 12 for Medium Satellite Terminal multicarrier, CCP 13 for Support and Test Equipment and Spares to the I-BTN contract

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
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 4 Tactical Interface Stations 18 Headquarters on the Move Nodes	

Major equipment received and quantities to 30 Jun 18
14 Formation Nodes Transit Case 12 Unit Nodes Transit Case 11 Relay Nodes Transit Case 1 Tactical Interface Stations

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)	1
	Release 2	Oct 17	Oct 18	Jul 18	9	2
Detailed Design	Release 1	Dec 16	N/A	Nov 16	(1)	1
	Release 2	Jan 18	Feb 19	Dec 18	11	2
	Support System – Release 1	Nov 16	Feb 17	Dec 16	1	3

	Support System – Release 2	Jan 18	Mar 19	Mar 19	14	2

Notes	
1	SRR/SDR covered both Release 1 and Release 2. Boeing Defence Australia is managing project schedule to deliver ahead of the contracted dates and achieve milestones 'early' and note this note this against all negative variances.
2	Release 2 has been 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.

3.2 Contractor Test and Evaluation Progress

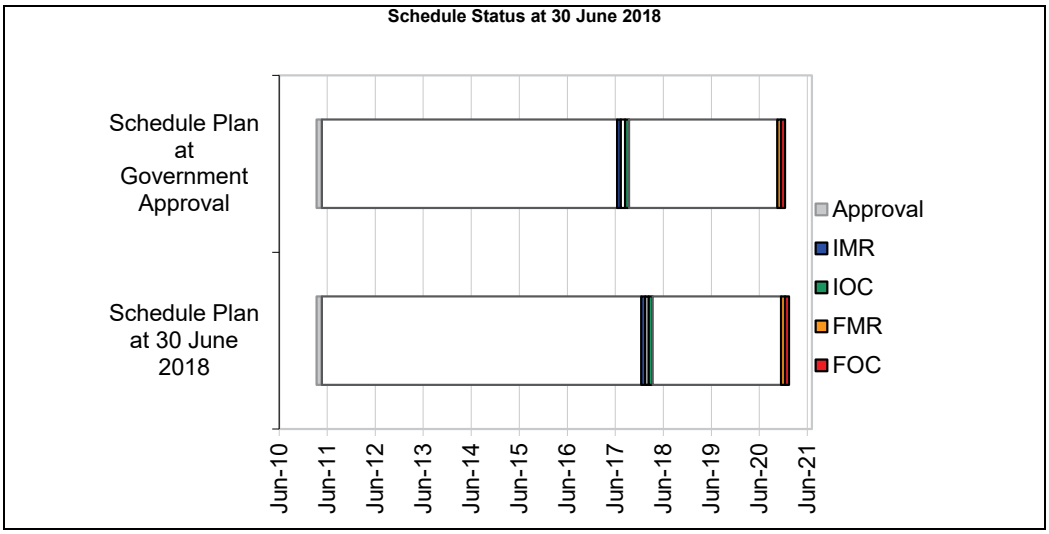
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Integration	Release 1 Mission System Integration & Interoperability Verification	Jul 17	Dec 17	Dec 17	5	1
	Release 2 Mission System Integration & Interoperability Verification	Apr 19	Nov 19	Sep 19	5	1
Acceptance	System Acceptance – R1	Aug 17	Feb 18	Dec 17	4	1
	System Acceptance - R2	Jun 19	Feb 20	Dec 19	6	1
	Final Acceptance (FA) - Acquisition Contract	Feb 21	NA	Nov 20	(3)	2

Notes	
1	Release 2 expands the capability of Release 1, and has been impacted by delays affecting interfacing projects
2	Boeing Defence Australia is managing project schedule to recover any schedule slip, and accumulated slip is within tolerance for Final Acceptance.

3.3 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	Feb 19	9	2
(Release 1) Materiel Release 3	Oct 18	May 19	7	2
(Release 2) Materiel Release 5	Dec 19	May 20	5	1, 2
(Release 2) Materiel Release 6	Oct 20	Oct 20	N/A	1, 2
I-BTN Final Materiel Release (FMR)	Nov 20	Dec 20	1	2
eDLAN				
eDLAN Materiel Release	Jul 18	Jun 19	12	3
I-BTN Final Operational Capability (FOC)	Sep 20	Sep 20	0	4

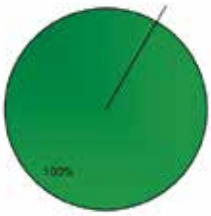
Notes	
1	Due to delays incurred to date with interfacing projects, alternative interim interface requirements for Release 1 were implemented and resulted in a six month slip to IMR 1A and IOC I-BTN. This also deferred the Release 2 Material Releases (Materiel Releases 5 and 6) by making Materiel Release 4 no longer used and introducing Materiel Release 6. There was no resultant slip to FMR.
2	Materiel Release (Release 1, Release 2) 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	The MAA v2.1 has consolidated the previous three separate eDLAN milestones into a single eDLAN Materiel Release, for which JC4ISPO is responsible. The variance is due to delays in the delivery of eDLAN through the JC4ISPO Contractor.
4	The planned FOC date is currently being reviewed to occur after FMR, and to align with the ADF major exercises.



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 expects to meet 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	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 IMR 1A was achieved in February 2018	Achieved
Final Materiel Release (FMR)	• 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	Not yet achieved

	• Mature Support Contract in place including delivery of Data Transfer Equipment (DTE); • Delivery of Hand Held Satellite Terminal (HHST) FMR is currently forecast for achievement in December 2020	

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.
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.
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.
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.
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 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.
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.
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

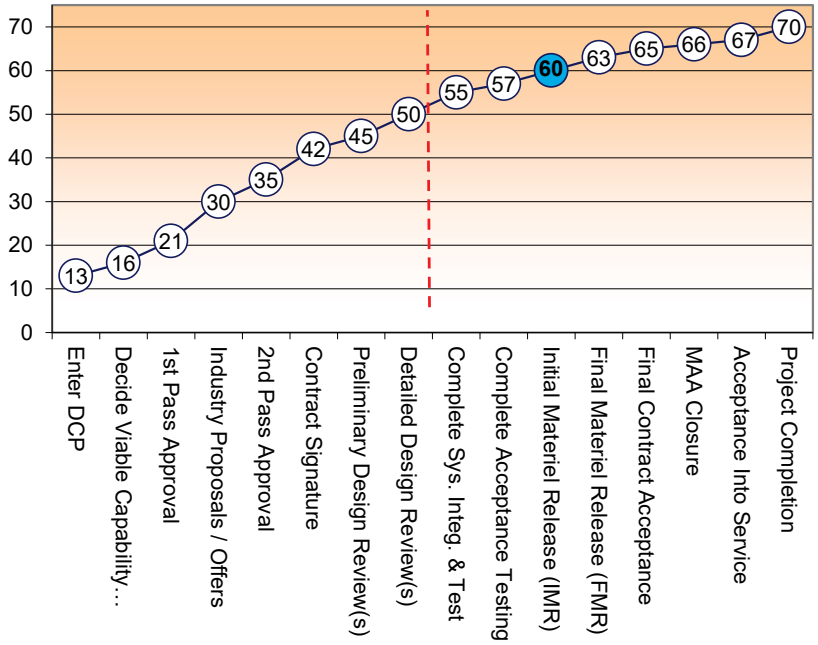
5.2 Major Project Issues

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.
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.
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.
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	**Schedule**. Whilst IMR 1A has been achieved, there remain schedule risks to the development of the Release 2 capability. **Cost**. The project has applied contingency to treat risks and issues. The budget estimate at completion remains within the approved budget and contingent allocation. **Requirement**. Whilst IMR 1A has been achieved, Release 2 is yet to complete design and testing requirements. **Technical Difficulty**. Whilst IMR 1A has been achieved, Release 2 is yet to complete design and testing requirements.							



2017-18 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	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 in 2017–18

Position	Name
Division Head	RADM Anthony Dalton (to Aug 17) Mr Ivan Zlabur (from Sept 17)
Branch Head	Ms Myra Sefton
Project Director	Mr Darren Lysenko (Acting to Jul 17) Mr Michael Peel (Acting Jul 17 – Sep 17) Mr Steven Blacker (Acting Oct 17 – May 18) Mr Michael Peel (Acting from Jun 18 - current)
Project Manager	Mr Steven Blacker (Jul 17 – Sep 17, from Jun 18) Mr Michael Peel (Oct 17 – May 18) Mr Steven Blacker (Jun 18 – Current)

Project Data Summary Sheet[135]

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 2nd Pass Approval	$681.9m
Total Approved Budget (Current)	$887.8m
2017-18 Budget	$149.4m
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, with the first additional MRTT aircraft delivered with associated spares and support equipment. 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, is undergoing 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 2018 has resulted in an underspend of $5.9m. This variance is primarily attributed to the rescheduling of payments for initial spares and support equipment procurements, the rescheduling of Foreign Military Sales payments and movement for contracted indices within the prime contract.

Project Financial Assurance Statement

As at 30 June 2018, 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.

The most significant milestones achieved in financial year 2017-18 include completion of MRTT#7 conversion (achieved in August 2017), commencement of the MRTT#7 GTC modification (achieved in September 2017), and MRTT#6 acceptance into service (achieved in September 2017).

Initial Materiel Release (IMR) was declared in February 2018 with Initial Operational Capability (IOC) achieved in April 2018.

Materiel Capability Delivery Performance

The project remains on schedule to deliver the two additional KC-30A MRTT aircraft to Air Force with MRTT#7, being the second additional KC-30A MRTT aircraft, modified to include GTC capability.

135 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.

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

1.3 Project Context

Background

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.

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.

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).

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.

Uniqueness

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.

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.

Major Risks and Issues

The project is currently mitigating the risks associated with accreditation and certification of the Information, Communications and Technology (ICT) equipment to be installed in the GTC aircraft as well as delivery of residual MRTT spares and GTC logistics products to support acceptance into service.

Principal **risks** associated with the modification of MRTT#7 to introduce a GTC capability include:

- **Potential delay in acceptance of the MRTT GTC capability should any significant rectification of either aircraft or aircraft systems be required during the GTC modification program, and**
- **Prime Contractor resource constraints impacting the ability to support final aircraft acceptance testing.**

Other Current Sub-Projects

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			
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 18	Exchange Variation		**23.0**	
Jun 18	**Total Budget**		**887.8**	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Airbus Defence and Space	(**414.9**)		3
	Other Contract Payments / Internal Expenses	(**31.9**)		4
			(**446.8**)	
FY to Jun 18	Contract Expenditure – Airbus Defence and Space	(**118.1**)		3
	Contract Expenditure – US Government	(**4.0**)		**3**
	Other Contract Payments / Internal Expenses	(**21.4**)		4
			(**143.5**)	
Jun 18	**Total Expenditure**		(**590.3**)	
Jun 18	**Remaining Budget**		**297.5**	

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 of Spare Engine Procurement ($21.4m), contractor, legal support, salaries, other capital expenditure including Discrete Tasking Orders and travel.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
132.2	149.9	149.4	PBS to PAES: The variation is primarily the result of enhanced prime contractor effort, the delivery of additional spares/inventory, additional support equipment and project management activities plus budgeted exchange rate adjustments from the PBS to the PAES plan. PAES to Final Plan: The variation is primarily the result of budget exchange rate adjustments from PAES at 2017-18 MYEFO Prices to 2018-19 PBS Prices.
Variance $m	17.7	(0.5)	Total Variance ($m): 17.2
Variance %	13.4	(0.3)	Total Variance (%): 13.0

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(3.4)	Australian Industry	The variance is primarily due to the rescheduling of payments for initial spares and support equipment procurements, the rescheduling of Foreign Military Sales payments and movement for contracted indices within the prime contract.
		(1.3)	Foreign Industry	
			Early Processes	
		(0.2)	Defence Processes	
			Foreign Government Negotiations/Payments	
		(1.0)	Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
149.4	143.5	(5.9)	**Total Variance**	
		(3.9)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
Airbus Defence and Space	Jun 15	408.8	532.8	Variable	ASDEFCON	1, 2
US Government	Mar 16	11.1	9.1	Fixed	FMS	1

Notes

1	Contract Value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	Price at 30 June 2018 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).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
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.

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	N/A	Oct 18	1	2

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.**

3.2 Contractor Test and Evaluation Progress

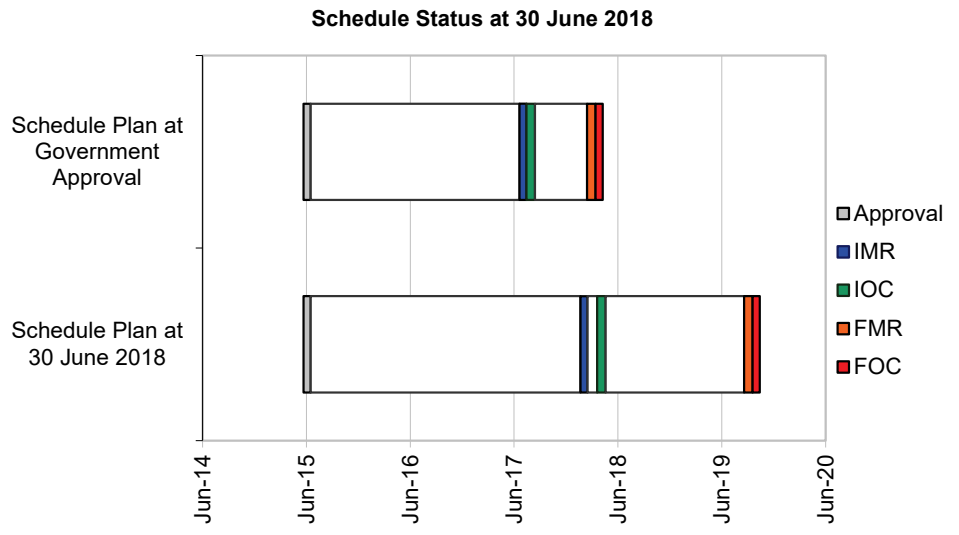
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Acceptance	Purchase of first additional A330-200 aircraft	Jul 15	N/A	Jul 15	0	
	Purchase of second additional A330-200 aircraft	Nov 15	N/A	Nov 15	0	
	Acceptance of MRTT# 6	May 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	N/A	**Nov 18**	**(1)**	2
	MRTT#7 GTC Final Acceptance	May 19	N/A	**May 19**	**0**	
	Contract Final Acceptance	Oct 17	Sep 19	**Aug 19**	**22**	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 current schedule forecast with work to refine the schedule being undertaken.
3	Variance is directly linked to the inclusion of the GTC modification and acceptance and introduction into service of the MRTT GTC aircraft.

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	**Oct 19**	**19**	1

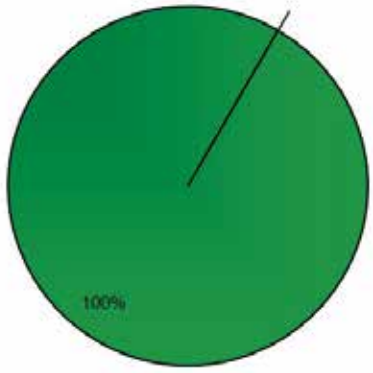
Notes	
1	Variance is directly linked to the inclusion of the GTC modification and acceptance and introduction into service of the MRTT GTC aircraft.



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** Materiel Capability Requirements as expressed in the Materiel Acquisition Agreement. **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)	KC-30A MRTT#6 delivered and accepted including the following: • Initial MRTT spares. • Initial Support equipment. **IMR was achieved in February 2018.**	**Achieved**
Final Materiel Release (FMR)	KC-30A MRTT#7 with GTC capability delivered and accepted including the following: • Final delivery of remaining MRTT spares and support equipment. • Delivery of MRTT GTC spares and support equipment • Delivery of Aircraft Stores Replenishment Vehicle. FMR is expected to be achieved in October 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
Differences between the baseline configuration of the two Airbus A330-200 aircraft and Air Force KC-30A fleet may affect spares and support and lead to integration issues during conversion of the aircraft to MRTT, that may require deviation to specification or replacement of components.	Actively engage with Airbus Defence and Space to undertake configuration analysis of both aircraft, documenting results to ensure the Commonwealth has a full understanding of any differences in configuration to support sustainment modelling and to address any supportability issues. **This risk has been retired following the MRTT modification being completed in MRTT#6 and MRTT#7 in June and August 2017 respectively.**
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.

The two additional A330-200 aircraft may not achieve the KC-30A fleet Planned withdrawal Date (PwD) of 2041 due to previously accrued flight hours and the significantly increased usage planned by Air Force.	Early engagement with Defence Technical Airworthiness Authority (DGTA) to assess previous commercial operations and their impact to KC-30A PwD. **This risk has been retired following the DGTA review of certification packages with both with the Spanish National Airworthiness Authority (INTA) and subsequently the ADF Military Airworthiness Authority (DASA). Both deemed the additional aircraft airworthy for intended Life of Type which will see it meet Planned Withdrawal Date.**
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.
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.
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
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.**

5.2 Major Project Issues

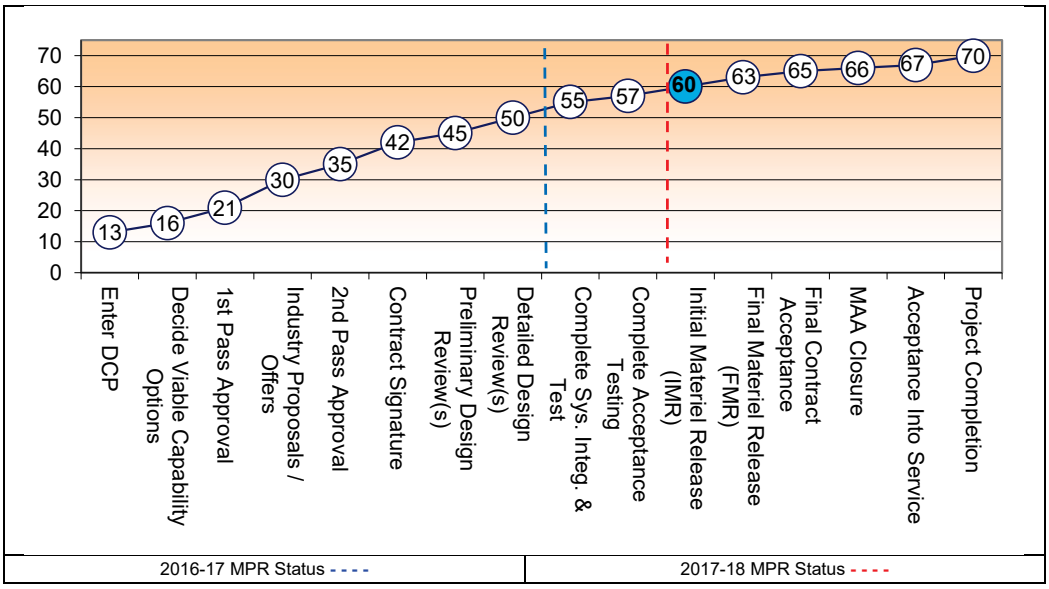
Description	Remedial Action
N/A	N/A

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**	**8**	8	8	**9**	8	**9**	**60**
Initial Materiel Release	Project Status	**8**	**8**	**8**	10	8	**8**	**9**	**59**
	Explanation	• Schedule: **IMR achieved in February 2018. The Government Transport and Communications (GTC) conversion is progressing ahead of schedule with full testing of military systems and aircraft delivery work packages to be fully planned out by Airbus Defence and Space and carried out on completion of GTC conversion.** • Technical Understanding: The GTC Satellite Communications solution **is** based on a fielded civil solution **which has been installed and confirmed functional. The interior design has taken into account all military systems providing confidence that final testing of the integrated solution will be successful.** • **Technical Difficulty: Both system designs and integration is well understood to support any issues identified during both MRTT regression testing and GTC system testing, providing confidence that final contract acceptance testing will be successful.**						



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 in 2017-18

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Phillip Tammen **(to Dec 17)** **AIRCDRE Graham Edwards (Dec 17–current)**
Project Director	Mr Wayne Bicket **(Acting to Dec 17)** **Mr Wayne Bicket (Dec 17–current)**
Project Manager	SQNLDR Damien Maldon **(Acting to Jan 18)** **WGCDR David Mackay (Jan 18–current)**

Project Data Summary Sheet[136]

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 2nd Pass Approval	**$248.8m**
Total Approved Budget (Current)	$678.7m
2017-18 Budget	**$5.5m**
Project Stage	**Final** Materiel Release
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 2018 the project achieved the budget for the Financial Year 17/18.

Project Financial Assurance Statement

As at 30 June 2018 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 **consistent with Navy direction.**

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 expects to submit the claim for Final Materiel Release (FMR) to the capability manager for consideration in July 2018 and the project expects Navy to be able to declare FOC by August 2018. The outstanding issue related to Navigation Radar obsolescence has been agreed by Navy to be addressed by the production of a remediation report which was due originally in March 2018 with funding for the actual remediation by SEA5014. This report has been subject to delay from the contractor due to various issues including Intellectual Property. It is now due in early August 2018. The issue regarding Demineralised Cooling Water System (DCWS) has been deferred as a re-design is already being undertaken by SEA1448**

136 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.

Ph4B on this system.

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.

Note

The capability assessments and forecasts by the project are not subject to the ANAO's assurance 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.

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:

- Obsolescence of Kelvin Hughes navigation radar necessitates replacement before the specified date **and requires application of contingency funding: and.**
- **Demineralised Cooling Water System causes increased support requirements of CEAFAR and/or SPS-49 radars.**

Both of these issues have been agreed by Navy, as being addressed via a report on Navigation Radar remediation due August 2018 and by SEA1448 4B redesign of the DCWS. Contingency funding and unallocated funds access to remediate these issues has not been approved.

Other Current Sub-Projects

SEA 1448 Phase 2A – This initial phase of the ASMD Project is to upgrade all eight of the ANZAC Class Ship's existing ANZAC Class Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.

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	
Jul 10	Price Indexation		76.1	4
Jun 18	Exchange Variation		(9.6)	
Jun 18	**Total Budget**		678.7	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – CEA Technologies (PAR Production)	(189.3)		5
	Contract Expenditure – BAE Systems Australia (Follow On Ships)	(179.0)		
	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	(48.7)		7
			637.0	
FY to Jun18	Contract Expenditure – BAE Systems Australia (Follow On Ships)	(2.0)		
	Contract Expenditure – CEA Technologies (PAR Production)	(2.0)		5
	Other Contract Payments / Internal Expenses	(1.5)		7
			(5.5)	
Jun 18	**Total Expenditure**		(642.5)	
Jun 18	**Remaining Budget**		(36.2)	

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 *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.
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
5.7	6.3	5.5	PBS – PAES: **The variation of $0.6m to the PBS estimate was due to the provision of budget for the Navigation Radar tasking.** PAES - Final Plan: **The funding requirement for the provision of the Navigation Radar tasking in 17/18 was significantly reduced, due to the preliminary study taking longer than anticipated.**

Variance $m	0.6	(0.8)	Total Variance ($m): (0.2)
Variance %	10.5	(12.7)	Total Variance (%): (3.5)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The remaining variance is the aggregation of minor variances in project office and low level support activities.
			Foreign Industry	
			Early Processes	
		(0.1)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
5.5	(5.5)	(0.1)	**Total Variance**	
		(0.2)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 2018 $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	185.7	Variable	Alliance	1

Notes

1	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 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 18		
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 18

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

	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 *Stirling*)	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 *Stirling*)	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

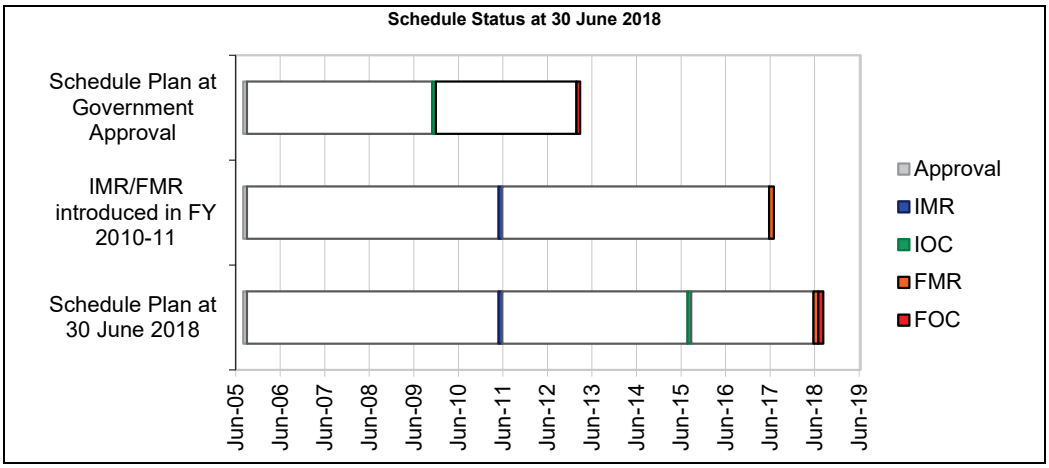
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Phased Array Radar System/Navigation Radar System - Harbour Phase)	Dec 08	Aug 10	Aug 10	20	1
Acceptance (Initial Operational Capability)	HMAS *Perth* 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	**Jul 18**	**12**	2
Final Operational Capability (FOC)	Mar 13	**Aug 18**	**65**	3

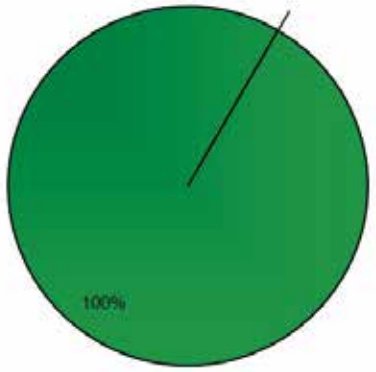
Notes	
1	Variance was directly linked to updated Materiel Acquisition Agreement which moved IOC until after Phased Array Radar System had been proven against Supersonic Targets.
2	**The project is expecting to submit a claim for the achievement of FMR from the Capability Manager in July 2018. The delay is due to the approval of ships 2-8 by Government and to plans to remediate navigation radar support deficiencies. Declaration of this milestone is dependent on Capability Manager agreement to the resolution of the navigation radar and DCWS issues noted in Section 5.2. Given the extensive discussions already held with Navy regarding the resolution of these issues, It is not expected that the DCWS and Nav Radar outstanding issues will cause any problems to the final acceptance.**
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.**



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 meeting capability requirements 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:** 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)	Provisional acceptance of the ASMD upgraded HMAS *Perth*.	Achieved
Final Materiel Release (FMR)	The final ship achieved Materiel Release in October 2017. FMR represents acceptance of all ASMD upgraded ships and associated supplies is expected to be achieved in July 2018.	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 2017-18)	
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).	Given the stage of the project (FMR claimed) the current resource allocation is considered adequate to achieve FOC and project closure as long as no new requirement emerge. Consequently Issue has been placed on retired list.
MAA closure is delayed as activities have not been planned and costed	Resolution of planning and costing of final MAA deliverables is expected to be agreed by the capability Manager when FMR is declared (expected for July 2018).
Obsolescence of Kelvin Hughes Navigation Radar necessitates replacement before specified date	Nav Radar report is now due 20 August 18 followed by review end of August. Any decision on way ahead awaits this report but project has been informed, that access to contingency or unallocated budget is not approved and radar will need to be sustained by CN02 Sustainment Funding until SEA5014 is funded.
Project is unable to use unallocated budget or contingency to remediate project deficiencies.	Stakeholders have been made aware of the expected need to access these funds and the consequences for project progression if they are not available when requested. FMR will be claimed on this basis
Budgeted Cost Model (BCM) and Assets under construction are not correctly maintained and rolled out	Radar Test Sets are expected in July 2018 and will be receipted into the stores system for issue to ships. Final CoA assets (3 items) held by BAe are expected to be returned to Naval Stores in August 2018. This will complete the outstanding AUC issue.
Demineralised Cooling Water System causes failure or limits operation of CEAFAR and/or SPS-49	Further DCWS remediation remains on hold following HMS Budget Estimate review. DGSCA accepted this position). Monitor for changes from COMSURF. Intention is for SEA14484B to remediate issues with DCWS in their required re-design process for the new radar.

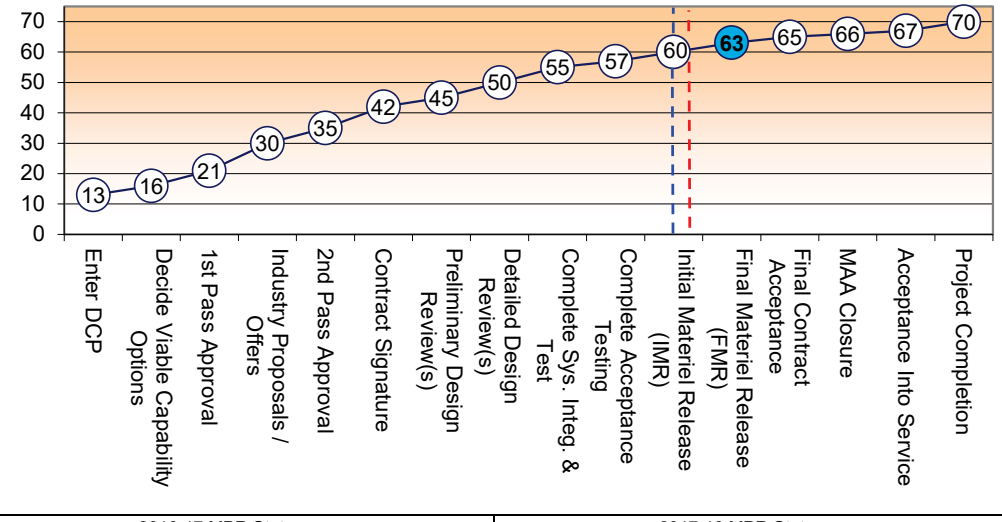
Note
Major risks and issues in Section 5 are excluded from the scope of the review.

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	9	9	9	8	9	63
Final Materiel Release	Project Status	8	7	10	9	10	8	9	61

	Explanation	• **Schedule:** Schedule is mature with **all ships completed but is delayed and at further risk due to the impact of remediation activities**. **Cost:** **Cost of the Navigation Radar Remediation is not yet known and is unable to be funded by project contingency or unallocated budget. The radar is intended to be sustained within the Sustainment Organisation until SEA 5014 ANZAC Class Capability Assurance Program is approved, expected to occur in Financial Year 21-22.** • **Requirement:** Based on the completion of OT&E **and in-service experience**, the requirements of Phase 2B are clearly understood. • **Technical Difficulty:** Successful OT&E completed in August 2013 **and in-service experience confirms design meets operational requirements**.



2016-17 MPR Status - - - - 2017-18 MPR Status - - - -

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**

Section 8 – Project Line Management

8.1 Project Line Management in 2017-18

Position	Name
Division Head	RADM Adam Grunsell, RAN
Branch Head	CDRE Steve Tiffen **(to Jun 18)** **CDRE Rob Elliott, RAN (Jun 18 to current)**
Project Director/Manager	Mr Ian MacKinnon **(to Apr 2018)** **CMDR Mark Whitehouse, RAN (Apr 2018 to current)**

Project Data Summary Sheet[137]

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 2nd Pass Approval	$504.5m
Total Approved Budget (Current)	$501.2m
2017-18 Budget	$27.7m
Project Stage	Detailed Design Review
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

SEA 3036 Phase 1 – Pacific Patrol Boat Replacement will acquire 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 2018, the project has an overspend of $1.0m against the year to date budget. This is due primarily to early achievement of the first vessel launch milestone, due to be achieved June 18 and paid in July but achieved in May and paid in June 2018.

Project Financial Assurance Statement

As at 30 June 2018 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 construction of the first four vessels is underway. The first vessel was launched on 28 May 2018.

To date the prime contractor key milestones have been met in alignment with the contract schedule. All expected delivery windows specified within the Project Materiel Acquisition Agreement (MAA) and Government project approval have also been met. Aspects of the project involving Pacific Island Country Infrastructure upgrades and disposal of the existing Pacific Patrol Boats are also progressing in alignment with project needs.

Notwithstanding the risks identified within section 1.3 the project is well placed to deliver the first vessel in October 2018 as originally planned.

To date, the project has achieved the following Key Milestones on time:

137 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.

- Detailed Design Review (DDR) conducted in February 2017.
- Support System Detailed Design Review (SSDDR) conducted in November 2017.
- Vessel 2 construction, cut steel, commenced slightly ahead of schedule in November 2017 with Keel Laying achieved in January 2018.
- Vessel 3 construction, cut steel, commenced ahead of schedule in March 2018 with Keel Laying achieved in May 2018
- Vessel 1 Launched in May 2018.
- Vessel 4 construction, cut steel, commenced in June 2018 with Keel Laying planned in August 2018.

As a result of equipment supply chain delays and first of class issues with set-to-work activities, the commencement of Harbour Acceptance Trials (HATs) for the first vessel, planned for June 2018, has been delayed to July 2018 and is expected to conclude in August 2018.

Initial Material Release (IMR) and Initial Operational Capability (IOC) are expected to be achieved in October 2018.

Materiel Capability Delivery Performance

The Project has not delivered any materiel capability to date. The first vessel is expected to be delivered in October 2018. The project is on track to deliver all vessels and meet 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 October 2018. Final Materiel Release/Final Operational Capability will be achieved when the last vessel is accepted by the Commonwealth currently planned for October 2023.

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.

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, disposal requirements, the Prime Contractor's ability to deliver against configuration management requirements and project resourcing. There is currently only one Pacific Maritime Surveillance Program (PMSP) Program-level issue, which relates to the scope of program infrastructure

upgrade work exceeding the allocated Project funding. This is a PMSP issue not a Project-level issue because; from a Project perspective this aspect of scope is approved for execution on a cost-capped basis.
Other Current Sub-Projects 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 18	Jun 18 Exchange Variation		(3.3)	
Jun 18	**Total Budget**		501.2	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Austal	(16.4)		
	Other Contract Payments/Internal Expenses	(5.2)		3
			(21.6)	
FY to Jun 18	Contract Expenditure – Austal	(25.7)		
	Other Contract Payments/Internal Expenses	(3.0)		4
			(28.7)	
Jun 18	**Total Expenditure**		(50.3)	
Jun 18	**Remaining Budget**		450.9	

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 office costs not associated with the prime contract.
4	Other contract payments and expenditure includes infrastructure costs of ($0.5m), project support contracted staff costs of ($2.2m) and other direct project costs of ($0.3m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
28.9	31.4	27.7	PBS – PAES: The increase from $28.9m to $31.4m was primarily associated with application of unallocated funds for project procurement activities in the areas of infrastructure and training. PAES – Final Plan: The revised cash forecast of $27.7m has decreased from $31.4m as a result of reprogramming project activities to current expected timeframes.
Variance $m	2.5	(3.7)	Total Variance ($m): (1.2)
Variance %	8.7	(11.8)	Total Variance (%): (4.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		1.0	Australian Industry	The variance is primarily due to early achievement of the first vessel launch milestone, due to be achieved June 2018 and paid in July 2018 but achieved in May and paid in June 2018.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
27.7	28.7	1.0	**Total Variance**	
		3.6	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
Austal Ships Pty Ltd	May 16	321.1	356.4	Fixed	ASDEFCON (Complex)	1

Notes	
1	Contract Value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
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 18
Nil

Notes	
1	Two additional PPB-R vessels have been included into the scope of supply in April 2018 following acceptance by the Timor-Leste Government of the offer from the Australian Government to receive two boats as a new member of the PMSP 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 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	Oct16	0	
	Support System	N/A	May 17	May17	0	1
Detailed Design Conduct	Mission System	Feb 17	N/A	Feb17	0	
	Support System	N/A	Nov 17	Nov17	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	Aug 18	1	1
	PPBR Boat 2-5	Aug 19	N/A	Aug 19	0	
	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	Oct18	N/A	Oct18	0	2,3
	PPBR Boat 2-5	Nov 19	N/A	Nov 19	0	3
	PPBR Boat –6-9	Nov 20	N/A	Nov 20	0	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	Oct 23	N/A	2

Notes

1	The variance of one month 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 will accept the vessel from the contractor and then gift the vessel to the receiving nation.

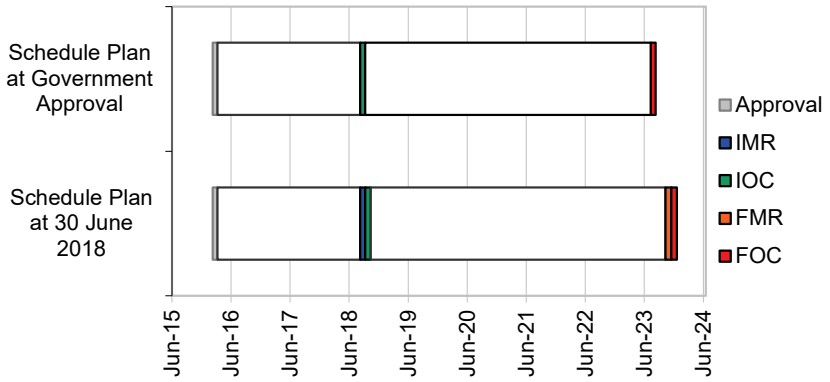
3.3 Progress towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Oct 18	N/A	1,2
Initial Operational Capability (IOC)	Oct18	Oct 18	0	3
Final Materiel Release (FMR)	N/A	Nov 23	N/A	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.
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.
4	The variance of two months is a result of the now contracted delivery dates for the two additional vessels for Timor-Leste.

Schedule Status at 30 June 2018



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 expects to meet capability requirements as expressed in the Joint Project Directive and Materiel Acquisition Agreement. **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)	First vessel and associated support system technical documentation, initial spares and logistics documentation delivered and accepted by the Commonwealth. IMR is forecast to be achieved in October 2018.	Not yet 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 of transition tasks in accordance with the PPB-R Transition Plan. FMR 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 PIC will not be completed prior to the arrival of the replacement vessels leading to an impact on reputation.	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. There are options for decoupling less critical aspects of upgrades to ensure critical upgrades (to ensure safe and secure berthing of the new GCPBs) are completed in time. Tender documentation for construction works will detail the dates by which construction is required and responses assessed and evaluated against these. PICs currently have infrastructure in place for PPB.
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.
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.
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 and PSG
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

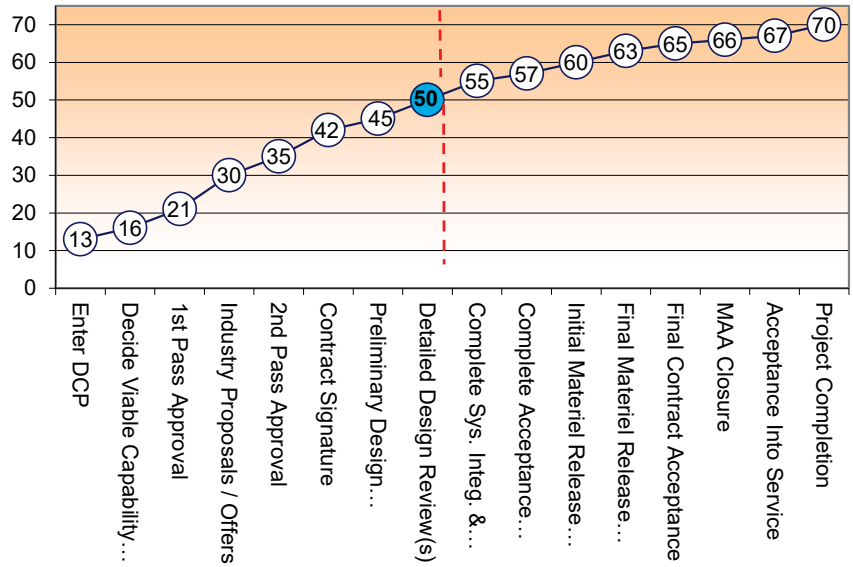
5.2 Major Project Issues

Description	Remedial Action
The scope of Pacific Maritime Security Program infrastructure works required exceeds those to be implemented by the SEA3036-1 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 SEA3036-1 to execute upgrades in addition to those funded by the project, with funds from other sources such as International Policy Division.
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							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	7	7	8	8	7	7	51
	Explanation	• **Technical Difficulty:** The design has now matured into a build which is undergoing set-to-work and preparation for testing.							



2017-18 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

Section 8 – Project Line Management

8.1 Project Line Management in 2017–18

Position	Name
Division Head	Mr. Patrick Fitzpatrick (Acting Feb 2017-Aug 2017) RADM Anthony Dalton (Aug 2017 – Current)
Branch Head	CDRE John Chandler (to Jun 2018) Mr. Peter Croser (Jun 2018 – Current)
Project Director/Manager	Mr. David Kingston

Project Data Summary Sheet[138]

Project Number	**JP 9000 Phase 7**[139]
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 2nd Pass Approval	**$483.8m**
Total Approved Budget (Current)	**$481.5m**
2017-18 Budget	**$93.4m**
Project Stage	**Initial Materiel Release**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

JP (AIR^2) 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 2018** the Project **had an underspend of $0.4m mainly driven by lower than forecast price variation and exchange rate fluctuation, reduced requirements for Contractor Support and Legal Expenditure.**

Project Financial Assurance Statement

As at 30 June 2018, 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 continued to challenge all parties throughout the year. **Notwithstanding these challenges, the Pilot and Aircrewman Trial Courses commenced on schedule in January 2018, and the Aviation Warfare Officer Trial Course commenced on schedule in February 2018.**

Two of the three Flight Simulators were accepted, and the third has completed testing and is due to be accepted in July 2018.

All other 17 synthetic training devices **were accepted during the period.**

Initial Materiel Release was achieved in May 2018.

Materiel Capability Delivery Performance

During the reporting period delivery and acceptance of all training mission systems, with the exception of Flight Simulator 3, was completed. Training courseware development and Contractor testing was also completed and the Pilot, Aircrewman and Air Warfare Officer Trial Courses, facilitating Commonwealth testing, commenced. The Sensor Operator Trial Course cannot commence until completion of the Aircrewman course.

Note

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

138 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.

139 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.

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 will deliver a total aircrew training solution based around 15 Airbus EC135T2+ helicopters, three Thales Flight Simulators and numerous other synthetic training devices. BDA is responsible for the development and set to work of a training delivery and management system which includes Training Management Plans based on Defence identified competencies and competency levels. Training development is being 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
During pre-contract testing Flight Simulator auto-rotational performance modelling was identified as a risk, as rectification may have required unplanned modification of Simulator software resulting in schedule delay. The first two Flight Simulators received Level B qualification for initial rotary wing training and Installation Operating Permits were issued in October 2017. The third Flight Simulator received Level B qualification in May 2018. Qualification of the Simulators for initial rotary wing training retired the risk identified in pre-contract testing.
The project continued to manage, and subsequently closed the one significant issue, schedule compression, achieving commencement of the trial course (Pilot) in January 2018, through collegially and pragmatically working with BDA to identify and leverage efficiencies in program delivery.

Other Current Sub-Projects
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 Jun 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
Jun 18	Exchange Variation		(4.7)	
Jun 18	**Total Budget**		481.5	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Boeing Defence Australia (BDA) – Acquisition Contract	(170.2)		
	Contract Expenditure – BDA – Support Contract Phase In	(12.6)		
	Contract Expenditure – Jacobs Australia	(5.1)		
	Other Contract Payments/Internal Expenses	(12.4)		4
			(200.3)	
FY to Jun 18	Contract Expenditure – BDA – Acquisition Contract	(64.2)		
	Contract Expenditure – BDA – Support Contract Phase In	(25.4)		
	Contract Expenditure – Jacobs Australia	(2.0)		
	Other Contract Payments/Internal Expenses	(1.4)		5
			(93.0)	

Jun 18	**Total Expenditure**	(293.3)
Jun 18	**Remaining Budget**	188.2

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 ($6.4m), Salaries ($2.9m), Legal ($1.5m), Travel and Training ($1.4m).
5	Other expenditure comprises: Contractor Support ($1.3m), Travel and Training ($0.1m).

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	93.2	93.4	PBS – PAES: Variation is due to reprogramming of Boeing Milestone and Price Adjustment payments offset by reduced requirement for Contractors. PAES – Final Plan: Variation is due to Global Foreign Exchange Update.
Variance $m	3.4	0.2	Total Variance ($m): 3.6
Variance %	3.8	0.2	Total Variance (%): 4.0

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	As at 30 June 2018 the Project had an underspend of $0.5m mainly driven by lower than forecast price variation and exchange rate fluctuation, reduced requirements for Contractor Support and Legal Expenditure.
			Foreign Industry	
			Early Processes	
		(0.5)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
93.4	93.0	(0.5)	Total Variance	
		(0.5)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
BDA – Acquisition	Nov 14	311.6	272.2	Firm	ASDEFCON	1
BDA – Support Phase In	Nov 14	68.6	61.3	Firm	ASDEFCON	1
Jacobs Australia ISC	Dec 14	10.2	8.7	Firm	ASDEFCON	2

Notes	
1	Contract value as at 30 Jun 18 is based on actual expenditure to 30 Jun 18 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 Dec 19.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
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 Jun 18

15 EC 135 Helicopters.
2 Full Flight Simulators.
17 Synthetic Training Devices, comprising:

- **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	Jan16	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

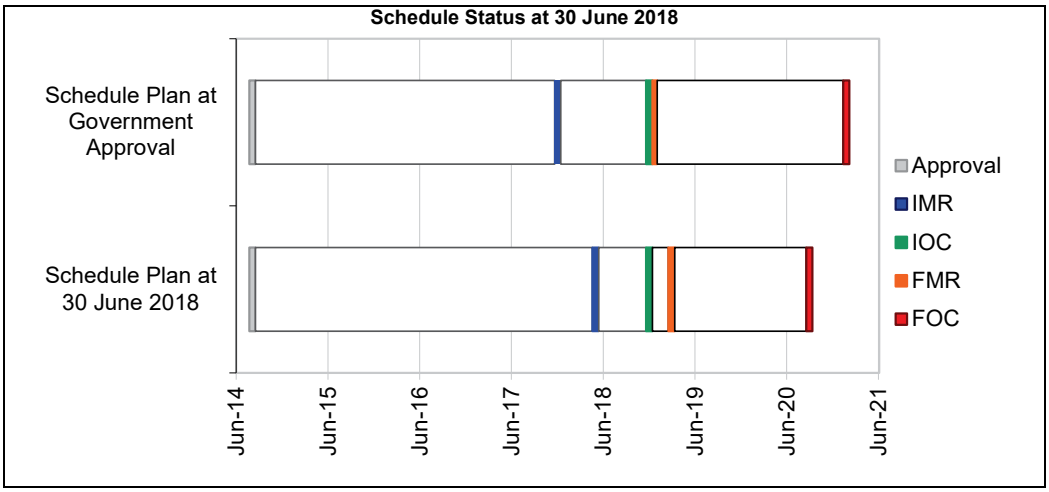
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	Piloting Course Readiness – Pilot	Dec 17	N/A	Dec 17	0	1
Acceptance	First EC135T2+ helicopter	Mar 16	N/A	May 16	2	
	Final EC135T2+ helicopter	Feb 17	N/A	Dec 17	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.
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 are being 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	Dec 18	(1)	
Final Materiel Release (FMR)	Dec 18	Mar 19	3	2
Final Operational Capability (FOC)	Dec 20	Sep 20	(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.

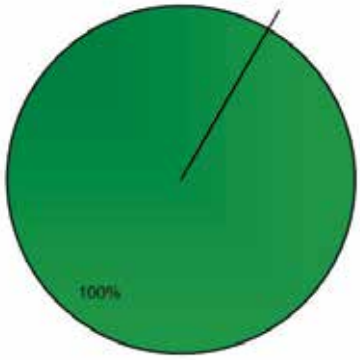


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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 expects to meet capability requirements as expressed in the MAA 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)	• 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

Final Materiel Release (FMR)	• 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. • Forecast to be achieved in **March 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
Flight Simulator Auto-rotation modelling deficiency may require unplanned modification of Simulator software resulting in schedule delay.	Optimisation of modelling by the Original Equipment Manufacturer. Review and optimisation of device handling responses during post installation and qualification testing. **This risk has been retired with achievement of Level B qualification for ab initio training in October 2017.**
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	**N/A**

5.2 Major Project Issues

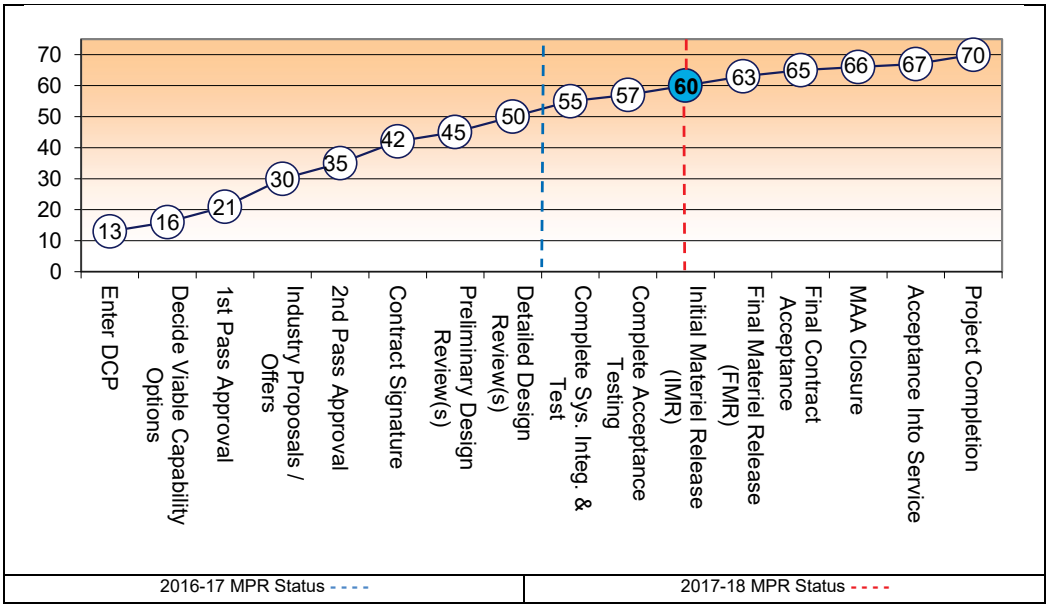
Description	Remedial Action
The body of work required prior to commencement of the Trial Course (Pilot) in January 2018 is placing significant pressure on the available Commonwealth and BDA resource base.	**The Pilot, Aircrewman and Aviation Warfare Officer Trial Courses commenced in January 2018 as scheduled. This issue has now been retired.**

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							
		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**	**9**	**8**	**9**	8	**8**	**9**	**60**
	Explanation	• **Schedule: The schedule continues to be actively managed. FMR/FA is expected to be achieved in March 2019.** • **Cost: Cost risk has been retired to a stage where unused contingency can be written back.** • **Technical Understanding: Knowledge necessary to operate and support the solution is well understood.** • **Technical Difficulty: To meet the Benchmark of 9, system integration and necessary final contract acceptance testing should be completed. Mission system testing has been completed and training delivery testing is progressing well to completion at FA (as designed).**							



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 in 2017-18

Position	Name
Division Head	MAJGEN Andrew Mathewson **(to Nov 17)** **Mr Shane Fairweather (Nov 17–current)**
Branch Head	CDRE Scott Lockey
Project Director	Mr Stuart Harwood
Project Manager	CMDR Darren Murphy **(to Jul 17)** **Mr Christopher Langmaid (Jul 17–current)**

PDSS Data Summary Sheet[140]

Project Number	**SEA 1439 Phase 4A**
Project Name	**COLLINS REPLACEMENT COMBAT SYSTEM**
First Year Reported in the MPR	2007-08
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 02
Budget at 2nd Pass Approval	**$455.3m**
Total Approved Budget (Current)	$450.5m
2017–18 Budget	**$1.0m**
Project Stage	Initial Materiel Release
Complexity	ACAT IV

Section 1 – Project Summary

1.1 Project Description

The SEA 1439 Phase 4A Replacement Combat System (RCS) project was established to provide each of the six Royal Australian Navy (RAN) Collins Class submarines with an initial installation of the United States (US) Navy (USN) AN/BYG-1 Combat and Weapon Control System, minor improvements to the combat system augmentation sonar, and shore facilities for integration, testing and training. Shore based systems are located at the Submarine Training and Support Centre at HMAS *Stirling* (WA) and a reference laboratory in the US at the Naval Undersea Warfare Centre. The project required the development of system commonality between the RAN and USN.

1.2 Current Status

Cost Performance

In-year

The overspend of $0.8m is due to difference between estimates and actual costs for work conducted by **Australian Submarine corporation (ASC Pty Ltd) on HMAS *Collins*.**

Project Financial Assurance Statement

As at 30 June 2018, project SEA 1439 Phase 4A 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

Project submarine installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program. Consequently, completion dates vary according to submarine availability. The RCS schedule has also been impacted by emergent work during each submarine docking. The final submarine installation **was completed** in 2018, following the decision to defer the HMAS *Collins* FCD, with Final Materiel Release (FMR) forecast for October 2018 (33 months behind schedule).

Materiel Capability Delivery Performance

CS04

140 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.

The RCS Project managed the development, installation and integration of the CS04 baseline. The installation in HMA Ships *Waller* and *Farncomb* was approved for Initial Operational Release (IOR) by Chief of Navy (CN) in May 2008 and September 2009 respectively. CN subsequently approved Operational Release (OR) of that baseline in December 2009. The capability delivered in HMA Ships *Waller* and *Farncomb* is consistent with that identified in the project requirement.

CS05

The RCS Project managed the development, installation and integration of the CS05 baseline. Installations and Harbour Acceptance Testing for the upgraded combat system baseline installed in HMA Ships *Dechaineux* and *Sheean* are complete. Sonar towed array trials scheduled for HMA Ships *Dechaineux* and *Sheean* were completed with OR of the Collins Towed Array Processor (CTAP) being awarded on 20 January 2011. IOR approval of the upgraded baseline as installed in HMAS *Dechaineux* occurred on 8 March 2011. OR of the CS05 baseline was achieved on 13 July 2016.

CS06

Installation of the upgraded baseline in HMAS *Rankin* was completed by the RCS Project in May 2014. The development and integration of this baseline is being managed by Sustainment.

Technical Insertion (TI)14

Installation in HMAS *Collins* was completed by the RCS Project in conjunction with the FCD program in June 2018. Note: This baseline adopts the new TI naming convention beyond CS06. Development, installation and integration of all further combat system upgrades is being managed by Sustainment.

Note

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

1.3 Project Context

Explanation

Background

Risks associated with rapid technology change have been treated by adopting a project management strategy that aligns with the US continuous update program and its two-year update cycle.

The then standard acquisition approach was adapted to enable the project office to establish itself as prime contractor with a series of Integrated Project Teams working at various levels within Defence and industry. This role has required close collaborative relationships to be formed between Defence, the USN and industry partners in Australia and the US.

In July 2001 the Minister for Defence terminated the original tender process for the Collins Class RCS.

In September 2002 the Government approved the project based on the procurement of the following off-the-shelf sub-systems:

- the US Combat and Weapon Control sub-system, consisting of the Combat Control System and the Virginia Class Weapons Integration Panel, to be acquired by Foreign Military Sales (FMS);
- minor improvements to the sonar processing solution currently installed in HMA Ships *Sheean* and *Dechaineux* as part of the Combat System Augmentation initiative; and
- other system support infrastructure and project support.

The USN Combat and Weapon Control System is being supplied under an Armaments Cooperative Project (ACP) which provides for system upgrades developed on a bi-annual basis, whereas the Commonwealth is adopting every second baseline with a four year update cycle. This project provides one system baseline for the first two submarines and later baselines for the remaining four submarines. These initial baselines installed by the RCS Project will be upgraded at some later date as a sustainment activity.

Australian systems are provided under a combination of contracts. The main Australian contractors included ASC Pty Ltd, Raytheon Australia, Thales Australia and Sonartech Atlas Pty Ltd. Installation was undertaken in conjunction with SEA 1429 Phase 2 – Replacement Heavyweight Torpedo at locations in South Australia and Western Australia. Installation in all submarines was coordinated with the FCD program.

The combat system capability enhancement required a significant change to submarine infrastructure that could only be achieved during a major docking. Furthermore, to ensure the required submarine availability was not impacted adversely and to work within the existing workforce at ASC Pty Ltd, it was necessary to couple the installation program to the existing submarine docking program. Although there are significant benefits in coupling the RCS installation schedule to the submarine docking program, that coupling has dictated the delivery schedule of the RCS capability.

Uniqueness

The Commonwealth has undertaken the functions of a prime systems integrator. This role required the Commonwealth project team to manage and coordinate a number of separate contracts and ultimately the integration, installation and testing of the delivered products.

The Project is participating in a Joint Development Program with the USN to introduce hardware and software upgrades for Combat and Weapon Control System and implementing that evolving system baseline into the Collins combat system.

Major Risks and Issues

The project has retired or transferred all risks.

Other Current Sub-Projects

- **SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability:** SEA 1439 Phase 3 is a program of upgrades to Collins Class platform systems to improve the Fleet's reliability, sustainability, safety and capability.

- **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. Stage One includes purchasing two boat sets and completion of the first installation.
- **SEA 1439 Phase 4B Weapon and Sensor Enhancement Program:** Acquire endorsed supplies to address deficiencies identified in the area of Submarine weapons and sensors.
- **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 02	Original Approved **(Second Pass Approval)**		455.3	
May 03	Real Variation – Transfer	(0.9)		1
Aug 04	Real Variation – Budgetary Adjustment	(0.8)		2
			(1.7)	
Jul 10	Price Indexation		56.5	3
Jun 18	Exchange Variation		(59.6)	
Jun 18	**Total Budget**		450.5	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Raytheon Australia	**(101.8)**		**4**
	Contract Expenditure – US Government (FMS)	(79.3)		5
	Contract Expenditure – US Government (ACP)	(59.1)		6
	Contract Expenditure – Thales Australia	(26.9)		
	Contract Expenditure – Sonartech Atlas Pty Ltd	(26.8)		
	Other Contract Payments/Internal Expenses	**(143.1)**		7
			(437.0)	
FY to Jun 18				
	Other Contract Payments/Internal Expenses	**(1.8)**		8
			(1.8)	
Jun 18	Total Expenditure		**(438.8)**	
Jun18	**Remaining Budget**		**11.7**	

Notes	
1	Transfer to the then Defence Science Technology Organisation (DSTO).
2	Administrative savings harvest.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $55.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $1.0m having been applied to the remaining life of the project.
4	**The previous Major Projects Report incorrectly classified $0.1m of Raytheon expenditure as Other Contract expenditure.**
5	The FMS case value is $79.3m (written back from $143.9m - see Note 1 in Section 2.3 below). The supplies remaining under the FMS case would then be delivered under the ACP.
6	The ACP is the main vehicle for supplying equipment and services for the Combat and Weapon Control hardware and software development.
7	Other expenditure of **$143.1m** includes an amount of **$53.09m** to ASC Pty Ltd for platform design and installation; a total of $33.6m on supplies and services provided by other Contractors, and $10.2m to Engineering and Scientific Systems for engineering and testing support. The remaining $46.**3**m of expenditure comprises operating expenditure, consultants, and contingency used in 2009-10.
8	The amount of $1.8m comprises of $1.3m to ASC Pty Ltd and $0.5m to Raytheon Australia for platform installation.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
2.4	0.8	1.0	PBS to PAES: The variance is due to the difference between estimates and actual costs for work conducted by ASC Pty Ltd on HMAS *Collins*.
Variance $m	(1.6)	0.2	Total Variance ($m): (1.4)
Variance %	(66.7)	25.0	Total Variance (%): (58.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.8	Australian Industry	The overspend of $0.8m is due to the difference between estimates and actual costs for work conducted by ASC Pty Ltd on HMAS *Collins*.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operation	
			Additional Government Approvals	
1.0	1.8	0.8	**Total Variance**	
		80	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
US Government (FMS)	Jun 03	143.9	79.3	Fixed	FMS	1, 6
Sonartech Atlas Pty Ltd	Jun 03	22.5	35.8	Variable	ASDEFCON Strategic	2, 6
Raytheon Australia	Aug 03	53.9	101.8	Variable	ASDEFCON Strategic	3, 6
Thales Australia	Oct 03	22.9	26.9	Variable	ASDEFCON Strategic	4, 6
US Government (ACP)	Nov 04	51.8	60.9	Fixed	ACP	5, 6

Notes

1	Included on-going involvement in the Combat and Weapon Control hardware and software development process for the duration of the ACP. The FMS Case valued at $143.9m was written back to $79.3m with the introduction of the ACP.
2	The Sonartech Atlas Pty Ltd contract value as at 30 June 2018 includes a Sustainment component of $9.0m.
3	Includes on-going involvement in the Combat and Weapon Control hardware and software development process for the duration of the ACP. This contract also provided for the integration of Electronic Chart Display Information System (ECDIS) master navigation into the combat system at a cost of $2.8m which was not funded by SEA 1439 Phase 4A.
4	The Thales Australia contract valued at $27.3m was written back to $26.9m following delivery of the final contracted supplies.
5	The US Government (ACP) 30 June amount was reported as $121.0m in previous MPRs (to 2012-13), however this figure included sources of funding other than SEA 1439 Phase 4A. SEA 1429 Phase 2 and Sustainment were the other contributors to the ACP costs. The Price Base at Signature has also been revised to reflect only SEA 1439 Phase 4A.
6	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
US Government (FMS)	7	7	US Combat and Weapon Control sub-system	
Sonartech Atlas Pty Ltd	4	7	Sonar sub-system equipment	1
Raytheon Australia	7	7	Tactical System sub-systems and components	
Thales Australia	7	7	Scylla Sonar and associated sub-systems	
US Government (ACP)	7	7	US Combat and Weapon Control sub-system	

Major equipment received and quantities to 30 Jun 18

Six RCS Ship Sets delivered. Installation of the RCS in all six submarines has been completed. Category 5 Sea Acceptance Testing completed. Engineering and maintenance arrangements established.

Notes

1	The RCS project was funded originally for four Submarine Acoustic Transitory Event Processing System units. The in-service support organisation took advantage of an option in the RCS project acquisition contract with Sonartech Atlas Pty Ltd to replace the ageing Submarine Acoustic Transitory Event Processing System units fitted to the existing submarine combat system. Although the contract value was increased, the additional sets were not funded from project funds.

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	Combat System	Nov 04	N/A	Nov 04	0	1
System Design	Combat System	May 05	N/A	May 05	0	1
Preliminary Design	20 Separate sub-systems or major components	Oct 03 – Oct 06	N/A	Nov 03 – Oct 06	1	1
Critical Design	20 Separate sub-systems or major components	Nov 03 – Apr 07	N/A	Nov 03 – Apr 07	0	1, 2

Notes	
1	The above data represents rolled up information as the project consists of many sub-systems each of which have independent Preliminary Design Review, Critical Design Review, or associated activities. Additionally, these system engineering activities were applied across two system baselines. As a result, there were many individual events within each of the above activities where the schedule was allowed to move provided the critical path for the delivery of capability was not impacted adversely. The critical path was based on the FCD program. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the FCD program. In some instances schedule slip has occurred as a result of project management intervention to delay finalisation of sub-system and major component design until the evolving US Combat and Weapon Control system baseline was mature. The project schedule has been re-baselined following significant events. To progress the Preliminary Design Review and Critical Design Review activity ahead of the US system development would have incurred significant cost. Preliminary Design Review and Critical Design Review slip has not impacted capability delivery because of the dependency on the FCD program to install the RCS equipment.
2	Some sub-systems or major components have several Critical Design Reviews or US equivalent.

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	Combat System - System Integration Test Phase 1-6	Jun 06 – Apr 08	N/A	Jun 06 – Apr 08	0	
	Combat System - Harbour Acceptance Trials Stage 1-3	Nov 06 – May 08	N/A	Nov 06 – May 08	0	
	Combat System - Sea Acceptance Trials Stage 1-2	Dec 07 – Jun 08	N/A	Dec 07 – Jun 08	0	
	Category 3 System Integration Testing Combat System CS05.00.01 (TI06/APB06)	Apr 09	N/A	Apr 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.00 (TI06/APB06)	Nov 09	N/A	Dec 09	1	1
	Category 3 System Integration Testing Combat System CS05.01 (TI06/APB06)	Jan 09	N/A	Jan 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.01 (TI06/APB06)	Feb 10	N/A	Feb 10	0	
	Category 5 Sea Acceptance Trials Combat System CS05.01 (TI06/APB06)	Apr 10	N/A	Aug 10	4	2, 3

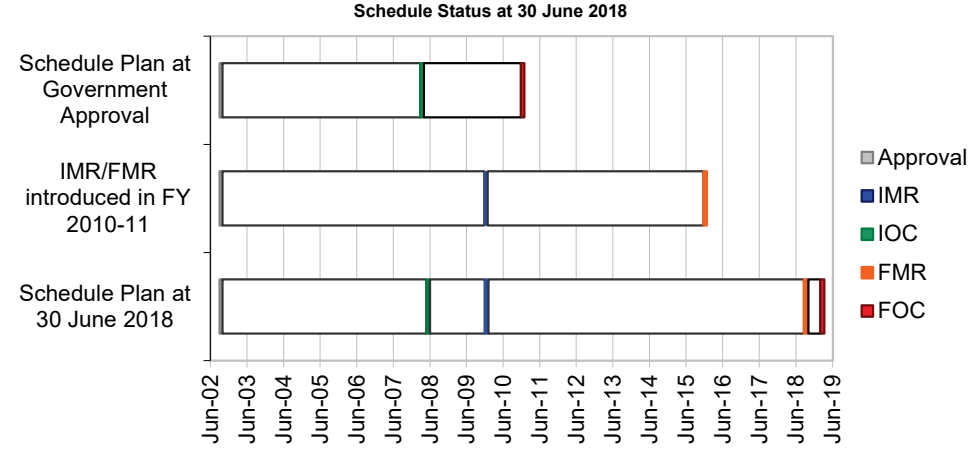
Notes	
1	Combat System CS05 baseline Harbour and Sea Acceptance Trial tests were conducted in two stages to account for weather, submarine defects and support vessel defects. In general, the project test and evaluation program was carried out in conjunction with other post docking activities and the planned testing schedule has been impacted to some extent.

2	Combat System CS05.01 baseline Sea Acceptance Trials and associated shore based analysis were completed in August 2010. The variance for testing is due to HMAS *Dechaineux's* FCD schedule delays and the need to complete additional testing of the Towed Array (TA) (previously delayed because of non project related equipment malfunction) and the ECDIS. The ECDIS and the TA increased the scope of the subsequent sea trials. The outcome of the CS05.01 trials including the ECDIS and TA were successful, with some minor trouble reports noted but not affecting capability. The CS05.01 System Design Certificate was issued 10 September 2010. CS05 Initial Materiel Certification for HMAS *Dechaineux* was achieved 22 September 2010. OR of the CS04 CTAP was awarded on 20 January 2011. CS05 IOR was awarded by CN on 8 March 2011. Additional testing of CS05 (TI06) minor software upgrades were conducted by the Project in 2010 and 2012. CS05 OR was awarded on 13 July 2016.
3	The CS05 Acceptance trials were the last acquisition related testing activity managed by the Project. All further development and testing of the CS06 and TI14 combat system upgrades and beyond is the responsibility of Sustainment. SEA 1439 Phase 4A performed the installation for CS06 on HMAS *Rankin* and the installation for TI14 on HMAS *Collins*.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Dec 09	N/A	1
Initial Operational Capability (IOC)	Mar 08	May 08	2	1
Final Materiel Release (FMR)	Jan 16	Oct 18	33	2
Final Operational Capability (FOC)	2010	Dec 18	96	3

Notes	
1	The RCS baseline (CS04) installed in HMA Ships *Waller* and *Farncomb* was approved for IOR by CN in May 2008 and September 2009 respectively. CN subsequently approved OR of that baseline on 9 December 2009.
2	FMR date was set at project approval before the submarine FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the RCS installation schedule has been delayed, with final installation to be completed in HMAS *Collins* in 2018.
3	FOC date was set at project approval before the submarine FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the RCS installation schedule has been delayed.



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:** Replacement combat systems are being delivered in accordance with the project's approved scope. CN has approved OR for the CS04 baseline installed in HMA Ships *Waller* and *Farncomb* and OR for the CS05 baseline installed in HMA Ships *Dechaineux*, *Waller* **(installed by sustainment)** and *Sheean*. The CS06 baseline installed in HMAS *Rankin* **and the TI14 baseline in HMAS *Collins*** is to be certified by Sustainment (i.e not subjected to IOR or OR). **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)	Provisional acceptance of RCS on HMAS *Waller* achieved December 2009, incorporating completion of CS04 sea trials and CS04 OR.	Achieved
Final Materiel Release (FMR)	Completion of CS04 and CS05 OR and installation of a RCS on each of the six submarines. FMR is planned for October 2018.	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 2017–18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

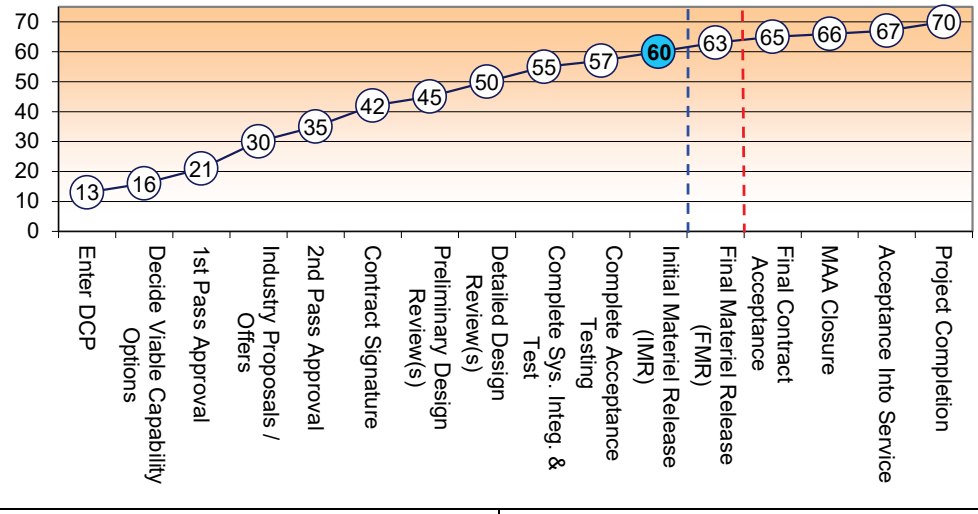
Description	Remedial Action
N/A	**N/A**

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	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	**10**	9	9	8	**10**	**64**
	Explanation	• **Schedule:** The last boat installation for the project to achieve FMR is HMAS *Collins*. FCD timings have changed substantially in the past. However, with the introduction of a configuration controlled Collins IMS, the project is now confident that schedule will be met. • **Cost:** The costs for the remaining project work on HMAS *Collins* are known, and the remaining Project budget and contingency is considered adequate to cover reasonable remaining project cost risk. • **Requirement** and **Technical Understanding:** The CS05 baseline has been at sea on operational submarines since 2010. Transitioning of the final baseline on HMAS *Collins* **was achieved** in **June** 2018. • **Operations and Support: The performance of the Combat System has been proven in other submarines. Installations, including logistic support, is at a mature state.**							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing and resources are available, in particular if Defence is to be both the prime systems integrator and Project Authority.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule 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.	Requirements Management
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.	First of Type Equipment
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.	Requirements Management
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.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2017–18

Position	Name
Division Head	Mr Stephen Johnson
Branch Head	Mr. David Cochrane **(to Aug 17)** **CAPT Adam Lindsay (Aug 17–current)**
Project Director	Mr Tony Hodson **(to Aug 17)** **Mr. Damien McGinnes (Aug 17–current)**
Project Manager	CMDR Ian Jimmieson **(to Jan 18)** **CMDR Rod Horsburgh (Jan 18–current)**

Project Data Summary Sheet[141]

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 2nd Pass Approval	**$436.4m**
Total Approved Budget (Current)	**$438.0m**
2017-18 Budget	**$9.0m**
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 $**6.2**m against a budget of $**9.0**m **(YTD)** with the **underspend due to reduction in requirements for Mission System Equipment for Communications Nodes and delays in developing architecture for the Battlefield Communications System (Land).**

Project Financial Assurance Statement

As at 30 June 2018, 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 major focus for schedule performance is to achieve FMR by **November 2018** and then commence project closure activities.

Materiel 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 effectively complete according to the approved Basis of Issue (the schedule which identifies equipment entitlements by unit); with some specialised ancillaries still being finalised and/or pending technical certification prior to release.

[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.

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 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.

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 materiel 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 will also transition 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

While the equipment components are already introduced into service, the specific configurations or 'Nodes' for dismounted voice communications roles are subject to user requirements validation with Army and RAAF. This user validation of the baselined Nodes has resulted in the need for some reconfiguration (limited within approved scope) to address fitness for purpose and weight considerations.

The project has very high exposure to risk of key personnel loss and with limited resources is increasingly reliant on contractor support to achieve approved scope.

Other Current Sub-Projects

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	
Oct 17	Real Variation – Real Cost Decrease		(25.6)	1
Jun 18	Exchange Variation		27.2	
Jun 18	Total Budget		438.0	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Harris Corp – Acquisition	(240.1)		
	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	(76.5)		2
			(366.5)	
FY to Jun 18				
	Other Contract Payments / Internal Expenses	(6.2)		3
			(6.2)	
Jun 18	**Total Expenditure**		(372.7)	
Jun 18	**Remaining Budget**		65.3	

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 (8.4), Key Loader Cryptographic devices (5.1), test sets (4.2), training racks (2.7), contractor support (2.2), engineering studies (1.7), freight and minor procurements and travel (0.2), Harris Corp standing offer (0.1).
3	Other expenditure comprises: Minor material acquisitions (5.3), contractor support (1.7), material support activities (0.1), travel and freight (0.1).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
5.2	12.5	9.0	PBS – PAES: Variation relates to additional equipment required to complete communication nodes, additional contractor support to conduct studies and provide engineering support for the development of the Battlespace Communications System (Land) architecture and test and integration facility.

			PAES – Final Plan: Variation relates to finalisation of communication nodes and delays to contractor support to conduct studies and provide engineering support for the development of the Battlespace Communications System (Land) architecture and test and integration facility.
Variance $m	7.3	(3.5)	Total Variance ($m): 3.8
Variance %	140.4	(28.0)	Total Variance (%): 73.1

2.2 B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Underspend due to reduction in requirements for Mission System Equipment for Communications Nodes and delays in developing architecture for the Battlefield Communications System (Land)
			Foreign Industry	
			Early Processes	
		(2.8)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
9.0	6.2	(2.8)	**Total Variance**	
		(31.1)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $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	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: 1. Order for acquisition of Phase 2A equipment; 2. 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 3. 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 2018 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 18		
Harris Corporation	11,638	11,638	Combat Net Radios, ancillaries and interim support.	1

Major equipment received and quantities to 30 Jun 18
11,638 radios (100 per cent of total Phase 2A radios) comprising: - 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).

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

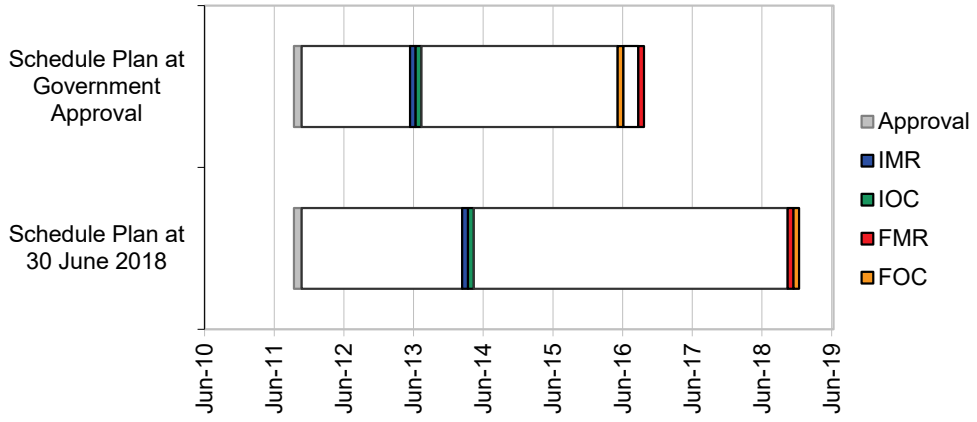
Notes	
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1. Both Harris and Raytheon equipment come complete with full test and evaluation data based upon extensive testing within the Department of Defense (US) and has been given Technical Certification via Capability, 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	**Nov 18**	**26**	2
Final Operational Capability (FOC)	Apr – Jun 16	**Dec18**	**30**	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 to **January 2018, achievement of Technical Certification in April 2018 and availability of key personnel**. **This is an administrative process and does not adversely affect capability.**

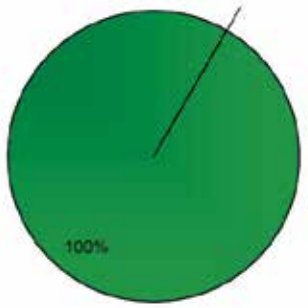
Schedule Status at 30 June 2018



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 Materiel Acquisition Agreement (MAA) 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)	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
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 is forecast to be achieved in November 2018.	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.	Introduction Into Service was delayed as far as allowable within defined IMR and FMR timeframes to alleviate pressure on staff. Contractor personnel were engaged and liaising with other projects for potential access to Integrated Support Contracts. Management of the Support Contracts and Specialist Military Equipment has transitioned to sustainment. Responsibilities are shared within Battlespace Communication Systems Program Office to promote cross skilling and reduce reliance on key persons.
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

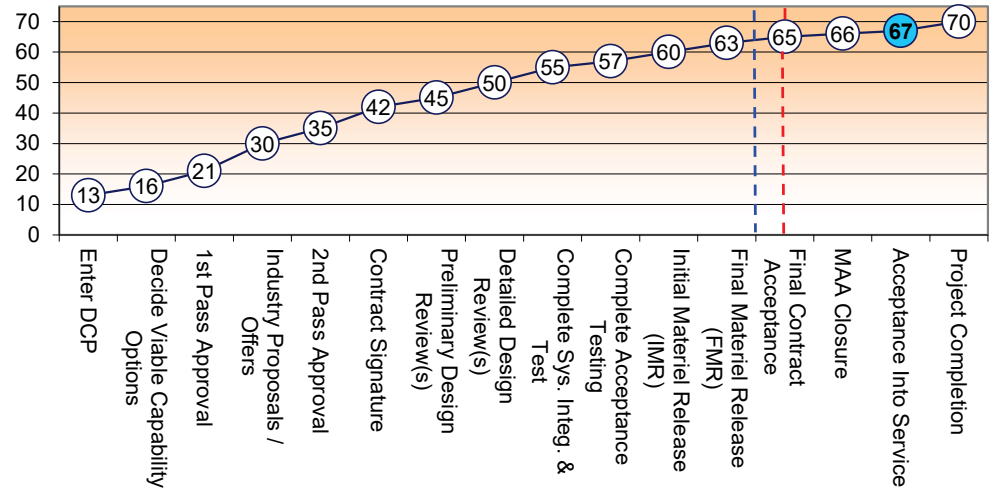
Description	Remedial Action
Some nodes need reconfiguration to address fitness for purpose and safety considerations as part of validation and verification processes.	The project has consulted with the Capability Manager to consider the necessary node reconfigurations concerned with weight and manpower distributions resulting from the system integration assessment report by Diggerworks and the dismounted RTX amplifier. The project has raised an Application for Deviation as part of the Technical Certification process. Any necessary changes will be endorsed by the Capability Manager.

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	10	10	9	9	67
Acceptance Into Service	Project Status	8	9	10	10	**10**	9	9	**65**
	Explanation	Schedule: FMR and FOC dates have **been reviewed. The maturity score will be adjusted on achievement of FMR, and declaration of FOC**.							



2016-17 MPR Status - - - - 2017-18 MPR Status - - - -

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 JP2072 phase reviews to ensure overarching alignment with the BCS(L).	Governance

Section 8 – Project Line Management

8.1 Project Line Management in 2017-18

Position	Name
Division Head	RADM Anthony Dalton (**to Aug 17**) **Mr Ivan Zlabur (Sep 17 - current)**
Branch Head	Ms Myra Sefton
Program Director	**Mr Darren Lysenko (Acting Jul 17 current)**
Project Manager	Mr Jason Cooke **(to Feb 18)** **Mr Greg Reardon (Acting Feb 18 – current)**

Project Data Summary Sheet[142]

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 2nd Pass Approval	$385.7m
Total Approved Budget (Current)	$437.7m
2017–18 Budget	$17.5m
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 $9.3m of a budget of $17.5m. The $8.2m underspend is **due to delay in Shore Integration & Test Facility Acceptance milestones and costs associated with the ANZAC ship program activities.**

Project Financial Assurance Statement

As at 30 June 2018, 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) **and 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 and accepted by the Commonwealth in the form of additional goods and services provided by the contractor.**

The SEA1442 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 July 24 with no impact to Navy ship availability.**

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.

[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.

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 Gen5 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, inadequate power and platform services, 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 changes to the AMCAP Program, a change to the installation baseline as a result of the SEA1448 Phase 4B Mast being incorporated into HMAS *Arunta*, as well as incomplete analysis of the sustainment budget.

Other Current Sub-Projects

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	374.3		
	Total at Second Pass approval		385.7	
Jun 18	Exchange Variation		52.0	
Jun 18	**Total Budget**		437.7	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Leonardo MW	(130.9)		1
	Contract Expenditure – US Government	(14.3)		1
	Other Contract Payments / Internal Expenses	(13.2)		2
			(158.4)	
FY to Jun 18	Contract Expenditure –Leonardo MW	(6.1)		1
	Contract Expenditure – US Government	(0.8)		1
	Other Contract Payments / Internal Expenses	(2.4)		3
			(9.3)	

Jun 18	**Total Expenditure**	(167.7)
Jun 18	**Remaining Budget**	270.0

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, $2.1m 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 $2.1m for other minor contract expenditure, project management costs and travel.
3	Other expenditure comprises **$2.2m for technical and engineering support** and $0.2m 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
24.6	19.9	17.5	PBS to PAES decrease due to the re-scheduling of spares procurement from 2017-18 **to later years to align with deferred support requirements which resulted from the alignment with AMCAP for installation of capability.** PAES to Final Plan – estimate decrease can be attributed to a revised FMS schedule and advice from the US Government that the radios were cheaper than originally budgeted. **Requirement for acquisition of additional radios is yet to be determined and funding associated with any future acquisition has been deferred to later years.**
Variance $m	(4.7)	(2.4)	Total Variance ($m): (7.1)
Variance %	(19.1)	(12.1)	Total Variance (%): (28.9)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(1.9)	Australian Industry	**The underspend is due to the Training Readiness Review and Shore Integration & Test Facility Contract Milestones being deferred to prioritise and focus on design and installation works relating to the Mission System and to maintain schedule for First of Class.**
		(6.3)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
17.5	9.3	(8.2)	Total Variance	
		(46.9)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
Leonardo MW	Nov 2013	187.7	229.8	Variable	ASDEFCON Strategic	1, 2, 3
US Government (AT-P-BSH)	Dec 2014	17.0	20.4	Firm	FMS	1, 3

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 Proposals (CCP-010 & CCP-011) that were executed** as at **30 June 2018**. CCP-010 **incorporated a range of additional goods and services to be provided to the Commonwealth as part of agreed Liquidated Damages resulting from the delay in DDR, with the majority of goods and services being provided at no cost to the Commonwealth. CCP-011 aligned the Contract with the planned AMCAP schedule.**
2	In addition to Note 1 above, the increase in Leonardo MW contract price at **30 June 2018 is due to fluctuations in exchange rates**.
3	The scope of this contract is explained further below.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
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	131	ARC-210 Gen 5 radios, technical data, and technical support.	
Major equipment received and quantities to 30 June 18				

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/Forecast	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/Forecast	Variance (Months)	Notes
System Integration	NewGen MCS	Jun 18	Dec 19	Nov 19	17	1
Acceptance	MTWAN Secondary Gateway	Apr 15	N/A	Mar 15	(1)	
	Training System	Jun 17	Nov 18	Nov 18	17	2
	Shore Integration and Test Facility (SITF)	Dec 16	Mar 19	May 19	29	3
	Ship #1	Jun 18	Dec 19	Nov 19	17	1, 4
	Ship #2	Apr 19	Aug 20	Apr 20	12	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

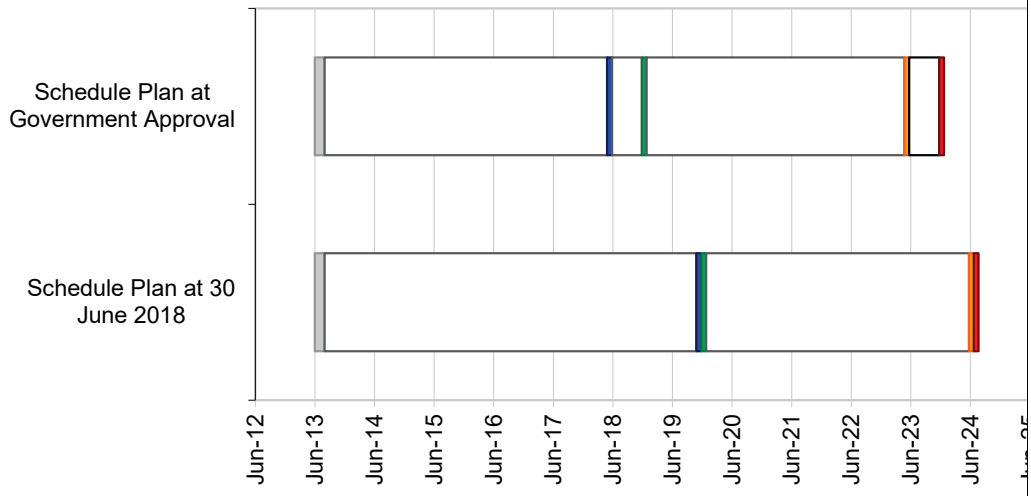
Notes	
1	The Contract Master Schedule (CMS) dated 25 Jun 2018 indicated that the Ship #1 Acceptance Date would occur in November 2019 (one month earlier than the updated Contract Date). This revised forecast reflects the alignment of SEA1442 Phase 4 with the planned AMCAP dates as at December 2017.
2	The CMS dated 25 Jun 2018 indicates the achievement of this Milestone is now in accordance with the updated Contract Date. On 25 June 2018, a Contract Change Proposal (CCP-011) included an adjustment of the schedule for this Milestone.
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 25 Jun 2018 indicated a May 2019 achievement date for this Milestone, being two months later than the updated Contract Date.
4	Ship availability and schedule is driven by AMCAP. The Current Planned dates reflect CCP-011 changes to the Contract Dates. Whilst the availability dates for Ship #1 and Ship #2 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 December 2017, which is seeking to deliver earlier than contracted. The Materiel Acquisition Agreement will need to be updated to align with current planned and forecast dates. Leonardo MW to be advised 90 days prior to commencement of each ship installation period.

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	Dec 19	12	1

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	Jul 24	7	1

Schedule Status at 30 June 2018



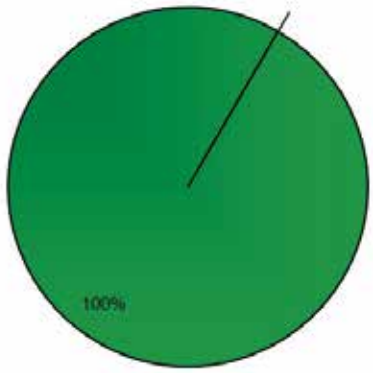
Notes	
1	See Section 3.2 Note 4 for detail.

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 expects to meet capability materiel requirements as per the Joint Project Directive, Materiel Acquisition Agreement and relevant Technical Regulatory Authority.

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)	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 Dec 19.	Not yet achieved.
Final Materiel Release (FMR)	All 8 ships accepted and all support arrangements in place. FMR is expected to be achieved in Jun 24.	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 will be affected by site or platform issues such as insufficient power, heat and ventilation.	• Work collaboratively with the ANZAC System Project Office (SPO) and the AMCAP (previously known as the Life of Type Assurance Program - LOTAP) to develop and maintain the Integrated Master Schedule (IMS) • Continue to liaise closely with ANZAC SPO and the AMCAP through established working groups and regular meetings to monitor the progress of the installation • Align designs accordingly and in compliance with ANZAC SPO's engineering change processes. • **This risk has been downgraded to Medium due to the reduced likelihood of occurrence as a result of confidence in the AMCAP Project Management process.**
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.	• Work collaboratively on the IMS with the Contractor, ANZAC 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.	• 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 performance may be affected by integration into the complex electromagnetic environment of the Anzac Class Frigates.	• The Contractor has conducted an Electromagnetic 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.	• 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.
Obsolescence – There is a chance that some mission system equipment may become obsolete prior to system acceptance.	• Continue to work with the Contractor to ensure that equipment selected is contemporary and supported from the period of acquisition through to integration, support and sustainment. • Change design if necessary and where feasible. Spare appropriately. • **This risk has been downgraded to Medium following a re-evaluation of the likely equipment cost.**
Resourcing – There is a chance that the project will be affected by a lack of staff.	• Continue to monitor human resource requirement through the life of the SEA1442 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.	• 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.
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.	• Continue to work with the WAMA to expedite the allocation of this task.
Emergent Risks (risk not previously identified but has emerged during 2017–18)	
Description	Remedial Action
CCMS – There is a chance that the CCMS may not be delivered with full functionality, which may result in a loss of schedule and Performance.	• **Continue to work with the Contractor to ensure sufficient resources are allocated to supplying the CCMS with the prescribed level of functionality as scheduled.**
Training system is not delivered in time – There is a chance that an adequate training system is not delivered in time to train the Ship 1 crew.	• **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.**
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 and performance.	• **Continue to liaise with NAVY to lock in training dates as early as possible.** • **Contract an additional resource within the Project Team to manage the Training function.**

5.2 Major Project Issues

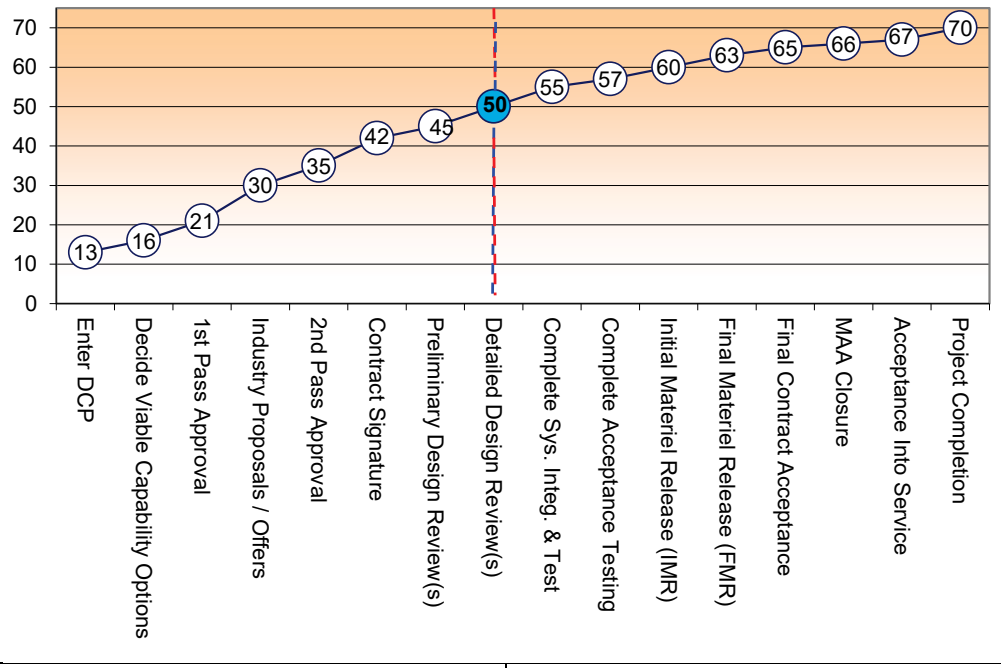
Description	Remedial Action
Non-recurring Sustainment Costs not yet defined - Analysis of non-recurring sustainment costs is incomplete.	• Project Office will raise a submission seeking additional sustainment budget of non-recurring services. • **Remedial action has been deferred to align to other SEA projects.**
The AMCAP planning for ship availability has resulted in a change of ship for Ship #1, a change of AMCAP maintenance scope and extension of the period Ship #1 is in production.	• The Contractor **is carrying** out necessary analysis and modifications to designs. • A Contract Change Proposal **has been implemented** to include new dates in the contract. • **The resolution of** this issue **aligned** schedule, however **it did** incur additional cost to the project. • **This issue is now closed, following implementation of the CCP.**
The installation baseline will change as a result of the SEA1448 Ph4B mast change being incorporated into the ship program.	• The Project Team is working with the ANZAC SPO and AMCAP to manage this change. • The Contractor **is preparing** revised installation plans. • This issue is not expected to impact schedule, however will incur additional cost (minor) to the project.
Delay in exiting SSDDR milestone – The Contractor has been unable to meet the SSDDR Milestone exit criteria due to unforeseen amount of detailed design work required for the Support System.	• Most of the high priority Support System Detailed Design was completed prior to the SSDDR Milestone. In agreement with the Project Team, the remainder of the design work will be completed by the end of July 2017. The SSDDR exit criteria are expected to be met at this point. • **This issue is now closed, following successful completion of the Milestone.**
Delay in exiting IDDR milestone - The milestone for exiting Integration Detailed Design Review (IDDR) will slip beyond scheduled date.	• The Project Office and Contractor have agreed that IDDR event will take place in July, however to enable a satisfactory review and acceptance of all IDDR documentation, IDDR exit will not occur until all exit criteria have been met. • The assessment of the Contractor and the Project Office is that delay in exiting IDDR will not impact meeting AMCAP Ship #1 installation dates. • **This issue is now closed, following successful completion of the Milestone.**

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							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	7	8	7	7	7	7	50
	Explanation	• **Requirement**: An Equipment Demonstration has been completed and detailed design indicates all operationally critical requirements as per the Operational Concept Document and Function and Performance Specification can be met. • **Technical Understanding**: **The necessary logistics data and arrangements for its employment in support of the capability are not yet in place.**							



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
Pay close attention to schedule and ensure all work is captured, logical and can form a basis for sound management post contract award. Alignment of multiple schedules in a complex multi contractor environment, such as between SEA1442 Phase 4 and AMCAP, can be a source of additional and unnecessary effort if not closely monitored and aligned.	Schedule Management
Access to appropriately skilled and experienced resources is critical to achieving project planning and management objectives.	Resourcing Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management in 2017–18

Position	Name
Division Head	RADM Anthony Dalton (to Aug 17) Mr Ivan Zlabur (Sep 17–current)
Branch Head	Ms Myra Sefton
Project Director	Mr Peter Henrick
Project Manager	Mr Steve Arundel (to Jun 18) Mr Simon Russel (Acting June 18 - current)

Project Data Summary Sheet[143]

Project Number	**SEA 1429 Phase 2**
Project Name	**REPLACEMENT HEAVYWEIGHT TORPEDO**
First Year Reported in the MPR	2009-10
Capability Type	Replacement
Acquisition Type	MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jul 01
Budget at 2nd Pass Approval	**$238.1m**
Total Approved Budget (Current)	**$427.6m**
2017–18 Budget	**$8.8m**
Project Stage	Initial Materiel Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project has acquired a Heavyweight Torpedo (HWT) for the six Collins Class submarines to replace the United States (US) Navy's (USN) Mk48 Mod 4 HWT previously in service with the Royal Australian Navy (RAN). The torpedo has been supplied by the US Government under a Memorandum of Understanding (MOU), with work performed by Raytheon US and the US Naval Undersea Warfare Center. The project is also acquiring associated logistic support, weapon system interface equipment, and operational support and test equipment. ASC Pty Ltd is undertaking integration to the Collins Class submarine platform.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2018 there was an over spend against the in-year budget of $1.6m due to the difference between the estimates given by ASC Pty Ltd and the actual costs for work conducted on HMAS Collins

and Project PAMMANDI Year 9 Quarter 4 of the Follow-On MOU requirements for the Armaments Cooperative Project payment for Shared MK48 Heavyweight Torpedo Development (PAMM 245) being processed earlier than originally planned.

Project Financial Assurance Statement

As at 30 June 2018, project SEA 1429 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.

Contingency Statement

The project has not applied contingency in the financial year.

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.

Schedule Performance

The HWT project consists of two separate components to deliver the full HWT capability to the RAN. The first component is the modification of each submarine to accommodate and launch the HWT; the second component is the spiral development of the HWT software.

Submarine installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program. Consequently completion dates vary according to submarine availability. The HWT schedule has also been impacted by emergent work, during each submarine docking. As a result of these non-project related delays, completion of the submarine modification program has slipped from 2010 to 2018.

The final weapons were delivered to Australia in January 2012. Final Materiel Release (FMR) is forecast for achievement in October 2018 (59 months behind schedule).

Materiel Capability Delivery Performance

The replacement HWT with Spiral 1 software and the integration modifications to Collins Class Submarines were approved for Operational Release (OR) by the Chief of Navy (CN) on 10 March 2010.

The replacement HWT with Advanced Processor Build (APB) 4 software was approved for Initial Operational Release (IOR) by CN on 8 March 2011. APB Spiral 4 OR was approved by CN in March 2014.

Platform modifications have been completed in all submarines with modifications in HMAS *Collins* completed in June 2018 in conjunction with the FCD program. As first of class specific testing was carried out for HMAS *Waller*, all subsequent testing for platform modifications was undertaken in conjunction with standard post docking testing.

Note

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

1.3 Project Context

Background

Project SEA 1429 Phase 1 was approved in December 1997 to investigate the acquisition of an enhanced torpedo capability including, weapon performance, integration, risk, costs, through-life support, intellectual property and Australian Industry Involvement. In September 1998 the US Government invited the Defence Capability Committee (DCC) to consider pursuing a collaborative development program for the Mk48 Advanced Capability (ADCAP) HWT as the replacement HWT for the RAN. The DCC, although noting the potential benefits, decided against the collaborative program in favour of a competitive tender process.

The solicitation process, which included a Project Definition Study commenced in 1999, but was subsequently abandoned when the Government decided in July 2001 to terminate the competitive tendering process in favour of entering into a cooperative agreement with the US Government.

A Statement of Principles outlining the strategic alliance between the RAN and USN on submarine related issues was signed in Washington DC in September 2001. At the same time, negotiations began with the US Government on a MOU to develop an Armaments Cooperative Project (ACP) for the joint development of the Mk48 ADCAP HWT.

Under the MOU, the Commonwealth and the US Government joined in a partnership for the cooperative development, production, and through-life support of the Mk48 ADCAP torpedo. A Joint Project Office was then established in Washington, DC. Spiral development of the Mk48 ADCAP resulted in the current baseline Mk48 Mod 7 Common Broadband Advanced Sonar System (CBASS) torpedo, incorporating a broadband sonar capability for enhanced target acquisition.

In March 2003, following a Submarine Integration Study, Government approved the scope of the project and delivery of the supplies; including submarine integration with ASC Pty Ltd, a Torpedo Analysis Facility (TAF) at the Defence Science and Technology Group (DSTG), and upgrades to the Torpedo Maintenance Facility (TMF). The TAF has been formally transitioned to DSTG. Upgrades to the TMF and the management responsibility for torpedo maintenance, has been transitioned to Navy Maritime Explosive Ordnance Program Office. A Portable Tracking Range was completed in December 2006 and responsibility formally transitioned to Maritime Ranges System Program Office. The MOU has been extended for a period of ten years to 2019 following successful negotiation with the US Government.

Uniqueness

Commonwealth participation in a Joint Program with the US Government to develop, produce and support the Mk48 ADCAP torpedo, through an ACP, including evolving capability enhancements, introduced additional complexity to the project. The additional complexity included requiring effective coordination of requirements management, integration, testing, torpedo deliveries and their installation in each submarine according to their respective FCD schedule. The performance of the ACP is overseen by an Executive Steering Committee with senior executives from both partners.

Major Risks and Issues

The project is currently managing two issues:
There is a manual handling hazard associated with the weight of the Torpedo Mounted Dispenser (TMD). The project is investigating replacing the copper guidance wire with fibre optic cable which will reduce the weight of the TMD.

Torpedo performance has been endorsed by Navy with the OR of APB Spiral 4, with a caveat that very shallow water performance required further testing which was completed by May 2016. DSTG completed a draft report in December 2016 and a request to remove the test coverage limitation was submitted to Navy in March 2018 and the recommended approach endorsed in May 2018. Training and simulation facilities requirements are currently being met.

Other Current Sub-Projects

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			
Jul 01	Original Approved **(Second Pass Approval)**		238.1	1
May 03	Real Variation – Scope	213.3		
Aug 04	Real Variation – Budgetary Adjustment	(0.2)		2
Sep 04	Real Variation – Transfers	1.0		3
			214.1	
Jul 10	Price Indexation		99.4	4
Jun 18	Exchange Variation		**(124.0)**	
Jun 18	**Total Budget**		**427.6**	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – US Government Initial MOU	(194.9)		
	Contract Expenditure – US Government Follow-on MOU	**(54.1)**		
	Other Contract Payments/Internal Expenses	**(72.2)**		5
			(321.2)	
FY to Jun 18	Contract Expenditure – US Government Follow-on MOU	**(9.8)**		
	Other Contract Payments/Internal Expenses	(0.**6**)		6
			(10.4)	
Jun 18	**Total Expenditure**		**(331.6)**	
Jun 18	**Remaining Budget**		**96.0**	

Notes	
1	Heavyweight Torpedoes purchase under the ACP with the US.
2	Administrative Savings Harvest.
3	Transfer from SEA 1429 Phase 1.
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $91.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $7.9m having been applied to the remaining life of the project.
5	Other expenditure of **$72.2m** includes an amount of **$29.3m** to ASC Pty Ltd for platform design and installation (under the Through Life Support Agreement and In Service Support Contract), $10.0m to L3 Nautronics Pty Ltd, $5.0m RCS/MOU USN, $4.6m paid to DSTO (now DSTG) and $3.2m to FMS Case (AT-P-GZU). The remaining expenditure of **$20.1m** covered sundry operating expenditure.
6	The amount of $0.**6**m is for ASC Pty Ltd for platform installation.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
12.0	**8.7**	**8.8**	PBS to PAES: The variance reflects increased cost estimate accuracy for US development work associated with the fibre optic Torpedo Mounted Dispenser **and revised lower estimates from Australian Submarine Corporation (ASC) for work conducted on HMAS *Collins*.** PAES to Final Plan: **The variance is due to Foreign Exchange supplementation.**
Variance $m	**(3.3)**	0.**1**	Total Variance ($m): **(3.2)**
Variance %	**(27.5)**	**1.1**	Total Variance (%): **(26.7)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.2	Australian Industry	
			Foreign Industry	
			Early Processes	
			Defence Processes	

		1.4	Foreign Government Negotiations/Payments	Mainly due to the difference between the estimates given by ASC Pty Ltd and the actual costs for work conducted on HMAS Collins and Project PAMMANDI Year 9 Quarter 4 of the Follow-On MOU requirements for the Armaments Cooperative Project payment for Shared MK48 Heavyweight Torpedo Development (PAMM 245) being processed earlier than originally planned.
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
8.8	10.4	1.6	**Total Variance**	
		18.2	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
US Government Initial MOU	Mar 03	336.7	194.9	Fixed	MOU	1, 2
US Government Follow-on MOU	Nov 09	43.8	71.1	Variable	MOU	2, 3, 4

Notes	
1	US Government Initial MOU was closed in March 2013 with variance attributable to positive exchange variation.
2	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
3	Contract value was increased in 2015-16 to undertake additional fibre optic development and trials support activities.
4	Contract type was changed in 2015-16 to reflect the use of both unique (variable) and shared (fixed) task funding arrangements available under the MOU.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
US Government Initial MOU	Classified	Classified	Heavyweight Torpedoes	
US Government Follow-on MOU	Classified	Classified	Heavyweight Torpedoes	

Major equipment received and quantities to 30 Jun 18
All weapon deliveries complete. Spiral 1 Software baseline achieved. Platform modifications in all six submarines completed. APB Spiral 4 software baseline achieved OR endorsement.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Final Design Review	Weapon Handling & Discharge Training Rig Modifications	Jun 05	N/A	Oct 05	4	1
	Submarine Weapon Handling & Discharge System Modifications	Jan 06	N/A	Nov 06	10	1
Acceptance	Weapon Handling & Discharge Training Rig Modifications	Nov 05	N/A	Nov 07	24	1
	Submarine Weapon Handling & Discharge System Modifications	Mar 06	N/A	Jun 07	15	1
Design Review	Mk48 ADCAP Torpedo Specification Compliance	Dec 07	N/A	Feb 08	2	1
	Explosive Ordnance Approval Process (Spiral 1)	Mar 08	N/A	Mar 08	0	1
	Explosive Ordnance Approval Process (APB 4 – Exercise)	Nov 12	N/A	Feb 11	(21)	1
	Explosive Ordnance Approval Process (APB 4 – Warshot)	Jul 13	N/A	Jul 13	0	
Incorporation Approval	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating Spiral 1	May 08	N/A	May 08	0	
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Exercise	Dec 12	N/A	Mar 11	(21)	
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Warshot	Jul 13	N/A	Jul 13	0	

Notes	
1	The above data represents rolled-up information as the project consists of many subsystems each of which has independent design review activities. As the critical path for these activities was defined by the FCD program, individual events within each of the above activities were allowed to move provided the delivery of the capability was not adversely impacted. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the FCD program. Additionally, the reported achieved dates are based on the signature of meeting minutes or reports by external organisations. As such, minor variance in the achievement dates can be attributed to the review and the subsequent approval process as recorded in meeting minutes and reports.

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 Tests	Weapon Handling and Discharge Systems Post Mk48 Mod 7 HWT Modification Test for HMAS *Waller*	Jan 07	N/A	Apr 07	3	1
Sea Acceptance Trials	Weapon Discharge System Mk48 Mod 7 HWT Modification for HMAS *Waller*	Oct 07	N/A	Dec 07	2	1

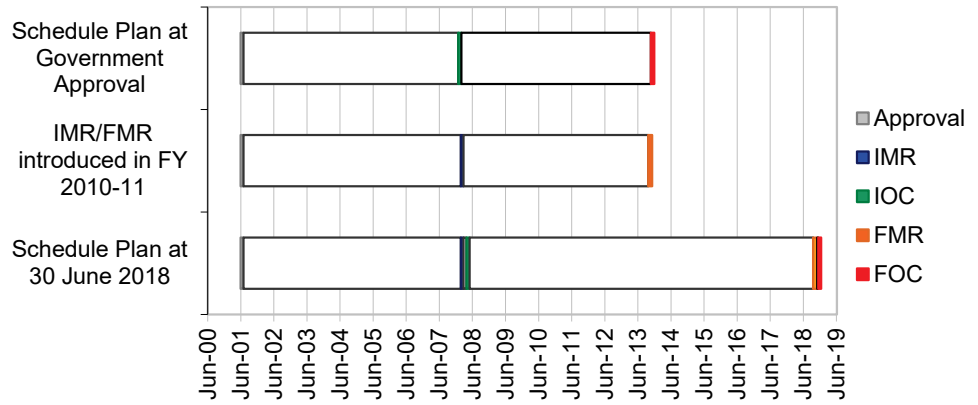
Notes	
1	Variance was attributable to the Navy Regulatory Review process and submarine program.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Mar 08	N/A	
Initial Operational Capability (IOC)				
Platform Modifications and Spiral 1	Feb 08	May 08	3	1
APB 4	Nov 12	Mar 11	(20)	2
Final Materiel Release (FMR)	Nov 13	Oct 18	59	3
Final Operational Capability (FOC)				
Platform Modifications and Spiral 1	Jan 10	Mar 10	2	4
Project FOC	Nov 13	Dec 18	61	5

Notes	
1	Variance was attributable to the Navy Regulatory Review process.
2	Dependent upon US Government acquisition process.
3	FMR date was set before the FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the HWT installation schedule has been delayed.
4	Variance was attributable to the Navy Regulatory Review process.
5	Achievement of FOC is dependent on Navy. The capability delivered by the project is consistent with the MAA and FOC will be achieved when the Capability Manager confirms all other Fundamental Inputs to Capability are complete.

Schedule Status at 30 June 2018



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:** Torpedo performance has been endorsed by Navy with the OR of APB Spiral 4, with a caveat that very shallow water performance required further testing which was completed by May 2016. DSTG completed a draft report in December 2016 and a request to remove the test coverage limitation was submitted to Navy in March 2018 and the recommended approach endorsed in May 2018. Training and simulation facilities requirements are currently being met. **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)	Modification of one Collins Class Submarine and Mk48 Mod 7 CBASS HWT Initial Materiel Certification (awarded under the acceptance system in place prior to the introduction of IMR and FMR).	Achieved
Final Materiel Release (FMR)	Delivery of the approved number of Mk48 Mod 7 CBASS torpedoes, with supporting infrastructure, and acceptance of modifications to all six submarines. FMR is planned for October 2018.	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 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

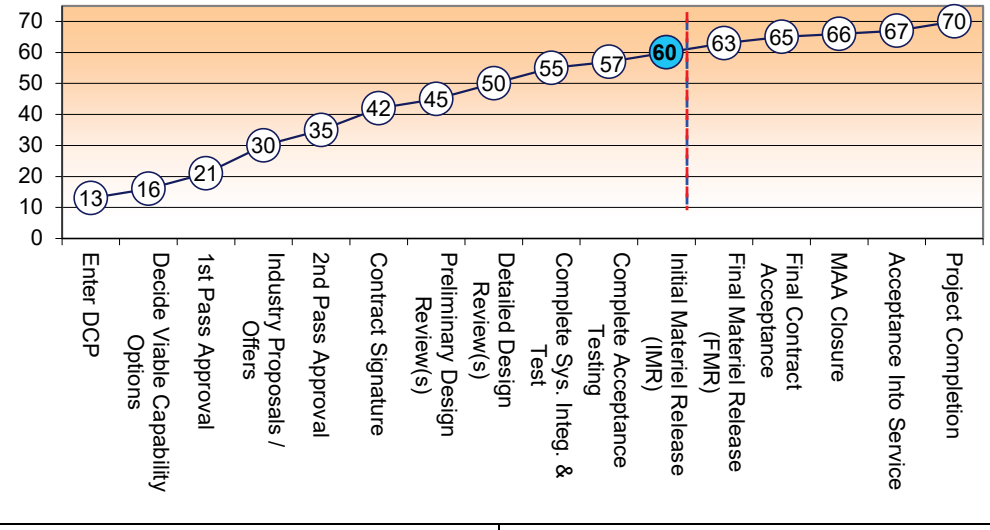
Description	Remedial Action
Weight of the Mk10 Mod 3 Torpedo Mounted Dispenser has created a manual handling hazard when dispensers are not attached to torpedoes.	The feasibility of replacing the guidance wire with fibre optic cable to reduce weight is being investigated.
As a result of the test coverage limitation declared at OR of APB Spiral 4, more information needs to be collected to fully populate the weapon software model.	Additional testing was completed in May 2016. DSTG completed a draft report in December 2016 and a request to remove the test coverage limitation was submitted to Navy in March 2018 and the recommended approach endorsed in May 2018

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							
		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	8	9	9	9	9	8	9	61
	Explanation	• **Schedule:** FMR date was set before the FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the HWT installation schedule has been delayed. • **Cost:** The completion of APB 4 software operational testing completes a major deliverable. The remaining Project budget and contingency is considered adequate to cover any remaining project cost risk. • **Requirement:** System integration and testing processes have verified the platform modification requirements and those modifications apply to later Spiral baselines. The APB 4 baseline has also been accepted for IOR. • **Technical Understanding:** APB 4 software has completed operational testing.						



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing is available to execute the project particularly in the start up phase.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule 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.	Requirements Management
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 and schedule risk that needs to be addressed.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2017–18

Position	Name
Division Head	Mr Stephen Johnson
Branch Head	Mr David Cochrane **(to Aug 17)** **CAPT Adam Lindsay (Aug 17–current)**
Project Director	Mr Tony Hodson **(to Aug 17)** **Mr Damien McGinnes (Aug 17–current)**
Project Manager	CMDR Ian Jimmieson **(to Jan 18)** **CMDR Rod Horsburgh (Jan 18–current)**

Project Data Summary Sheet[144]

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	**Deputy Chief Information Warfare**
Government 1st Pass Approval	Mar 09
Government 2nd Pass Approval	Mar 09 and Mar 10
Budget at 2nd Pass Approval	**$460.9m**
Total Approved Budget (Current)	**$419.9m**
2017–18 Budget	**$17.4m**
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 **the end of June 2018, the project is recording an underspend of $9.2m against a planned FY 2017/2018 Budget of $17.4m. This was due to delays in achieving Contract Milestones for Software Deployment Readiness Review (SDRR) and Test Readiness Review (TRR) and subsequently Stop Payment under the provisions of the Viasat contract have been imposed.** This **has also resulted in Contract Milestones being rescheduled; resulting from delay in delivery of Government Furnished Materiel and prolonged development of Mission System software.**

Project Financial Assurance Statement

As at **30 June 2018**, project JP 2008 Phase 5A 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 project risks that relate to independent software review and actions that support the system security accreditation.

Schedule Performance

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, additional Network Control System (NCS) design review and test and evaluation milestones were added to the project. In December 2013 a Contract Change Proposal (CCP) was signed causing Final Materiel Release (FMR) for the NCS to move to September 2014. CCP2 was signed in December 2015 after Viasat experienced delays in software development which resulted in a further slip to FMR (NCS), forecast to be achieved in April 2018 (49 months behind schedule). To minimise the capability impacts caused by the schedule delays, CCP2 introduced two new milestones; the NCS Manager Software Readiness Review (NSWRR) and Software Deployment Readiness Review (SDRR).

CCP3 was signed in March 2017 to introduce architectural enhancements to the NCS supporting security requirements.

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.

In August 2017, delay in the provision of Government Furnished Material triggered the need to raise CCP4. After a number of technical workshops and capability delivery discussions, the Contractor provided a revised schedule in April 2018, which indicated that the Contractor will be a further ten months late with their software development. Since April 2018, the parties have engaged in evaluation and negotiation of a revised delivery baseline (addressing both contracted schedule and scope), taking into account both the delays in provision of GFM and the Contractor's software development.

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 (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. An issue with the modification of Commercial Off The Shelf (COTS) software caused delay. While the COTS software that is being modified is currently used in other defence departments around the world, it is now considered developmental for this project. To partially mitigate the impact of the delay, part of the final deliverable, IW will be introduced under an interim capability state.

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.

With the signature of the NCS contract with Viasat Inc in May 2012, additional design review and test and evaluation milestones were added to the project. Additional software readiness reviews NSWRR and SDRR were introduced as well as an Interim Capability state that will introduce IW. These milestones relate to the development and procurement of the UHF Channel Control System.

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.

Major Risks and Issues

The timeframe for building works at HMAS Stirling that would impact the project's installation timeframes has been established. The timeframe is assessed as not impacting the project's installation timeframes; however, the risk will remain under ongoing watch.

There is an emergent risk that the Project Office may exhaust contingency before the final delivery of the program. In the past twelve months the Project has undergone schedule slippage and therefore will not achieve delivery of capability under the approved timeframes of the remaining two Operational Capability releases.

Other Current Sub-Projects

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 18	Exchange Variation		(41.0)	
Jun 18	**Total Budget**		419.9	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Intelsat	(294.4)		
	Contract Expenditure – Viasat	(28.9)		4
	Other Contract Payments / Internal Expenses	(30.7)		
	Adjustment due to movement from Accrual to Cash	0.9		
			(353.1)	
FY to Jun 18	Other Contract Payments / Internal Expenses	(8.2)		5
			(8.2)	
Jun 18	**Total Expenditure**		(361.3)	
Jun 18	**Remaining Budget**		58.6	

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 from December 2017 with this ongoing.
5	The main contributor to this spend is SME Purchases ($8.2m)

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
22.3	19.1	17.4	PBS to PAES: Underspend due to delay in completing contract milestones. PAES to Final Plan: There has been a requirement for Contract Milestones to be rescheduled due to the delay in delivery of Government Furnished Materiel and prolonged development of Mission System software.
Variance $m	(3.2)	(1.7)	Total Variance ($m): (4.9)
Variance %	(14.3)	(8.9)	Total Variance (%): (22.0)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	
			Foreign Industry	
			Early Processes	
		(9.2)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	

			Effort in Support of Operations	Figures are as per the end of June 18. Current underspend is due to delay in achieving the Contract milestones, Software Deployment Readiness Review (SDRR) and Test Readiness Review (TRR); remaining milestones have slipped to FY18/19 and FY19/20.
			Additional Government Approvals	
17.4	8.2	(9.2)	**Total Variance**	
		(52.8)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $m			
Intelsat	Mar 09	202.5	294.4	Firm	ASDEFCON (COMPLEX)	1, 3
Viasat	May 12	36.5	46.3	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 for support of the CMS in April 2014.
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.
3	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
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 18
All 20 channels were delivered successfully on 25 May 2012 and are now operational.

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	
NCSM Software Readiness	NCS	Jul 16	N/A	**Oct 18**	**27**	2, 3
Software Deployment Readiness	NCS	May 17	N/A	**Jan 19**	**20**	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	Additional milestones introduced following the signing of CCP2 in December 2015.
3	Review re-scheduled under CCP3 signed in March 2017. **Delay to NCSM Software Readiness and Software Deployment Readiness milestones result from delay in delivery of Government Furnished Materiel at August 2017 and ongoing software development Review dates to be re-scheduled as an outcome of CCP4 negotiations.**

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

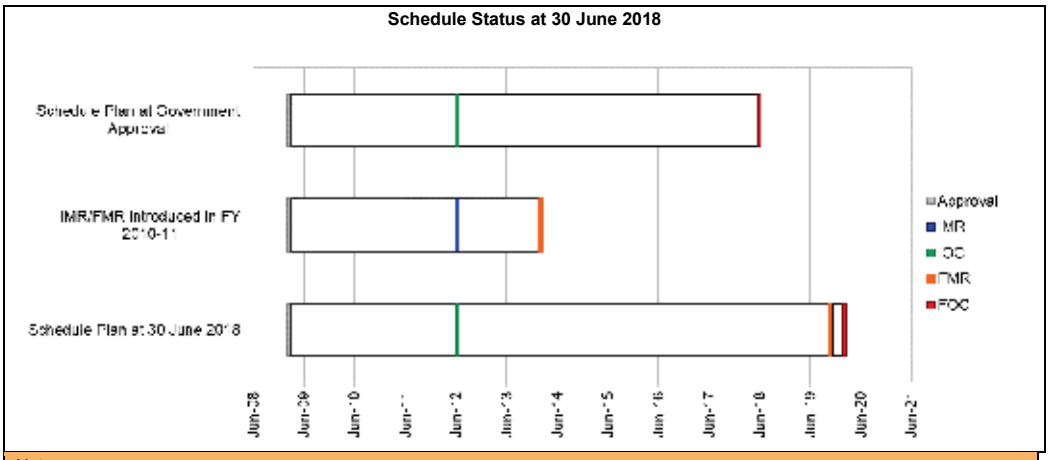
	NCS	Nov 13	Sep 14	**Sep 19**	**70**	3,**5**
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	May 12	(1)	
	CSM	Jul 12	N/A	Jun 12	(1)	
	NCS	Mar 14	Sep 14	**Oct 19**	**67**	3,4,**5**

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 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 software development at August 2017.**

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	**Sep** 18	**72**	**5**
Final Materiel Release (FMR) # 2 (Network Control System)	Mar 14	**Dec 19**	**69**	2
Final Operational Capability (FOC) (Pacific Ocean)	Jun 18	**Mar 20**	**21**	3, 4

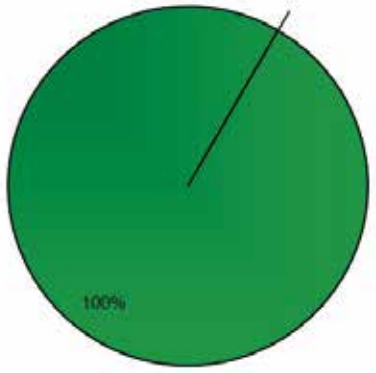
Notes	
1	MR was claimed on 28 September 2012. Chief Information Officer Group (CIOG) requested additional information which was supplied and MR was achieved on 21 December 2012.
2	Software delays noted in Section 3.2 Note 3 impacted FOC; however, the magnitude of the delay is yet to be determined.
3	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-scheduled to **December** 2019.
5	**FMR IOR was claimed on 28 September 2012; the ADF has been fully utilising the capability defined under the Operational Capability Indian Ocean (OC IOR) milestone since this time. Absence of an appropriate Technical Regulatory Framework (TRF) has limited the project to fully meet the Material Acquisition Agreement requirements. The project has amalgamated outstanding OC IOR actions with an interim capability state defined by CIOG to be claimed in September 2018.**



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 overall performance requirements which are determined by the hosted payload. **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. In Orbit Test of hosted payload 2. IMR was achieved in July 2012	Achieved
Final Materiel Release (FMR #1)	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. Upgrade of legacy NCS 3. CSM and initial training for CSM 4. FMR#1 was achieved in December 2012	Achieved
Final Materiel Release (FMR #2)	1. NCS comprising three channel control sites, and NCS/NCS Manager (IW) training package 2. FMR#2 is forecast 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 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 program to undertake works has not been established; although it has been identified it will not occur during the project's installation periods.**
There is a risk that current facilitates 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.**
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
There is an emergent risk that the Project Office may exhaust contingency before final delivery of the program. This has been identified as there is delay in delivery of supplies under the Viasat Contract whilst the project has been required to maintain a contracted workforce.	**The Project Office is re-baselining the Viasat contract that will underpin future costing requirements, enabling the program to develop strategies to work within current budgetary constraints.**

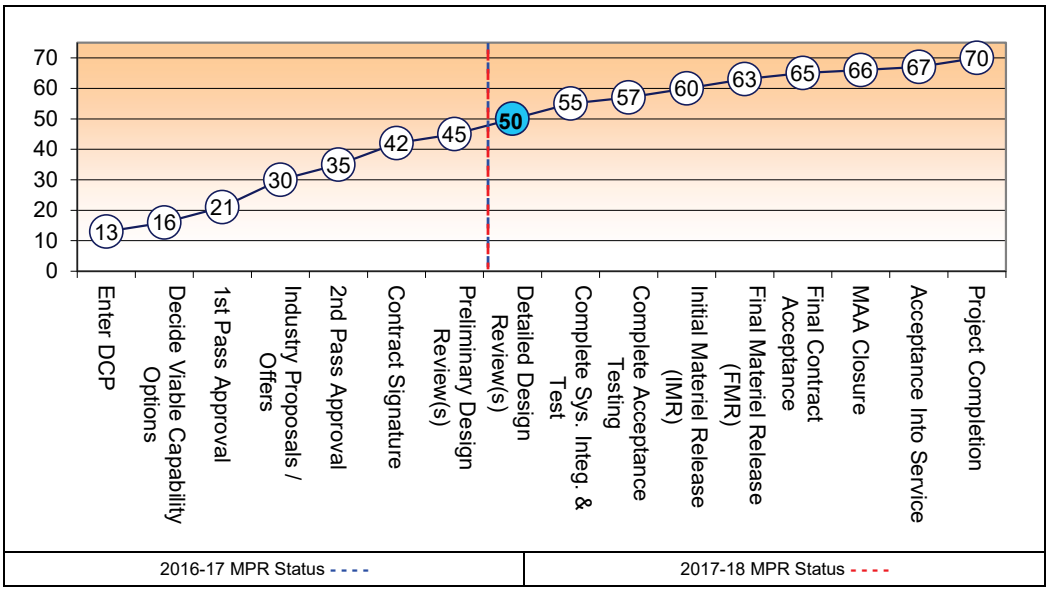
5.2 Major Project Issues

Description	Remedial Action
The project has undergone schedule slippage, causing delay in achieving the program's remaining operational milestones.	**A Project Control Board (PCB) was established to review the outstanding capability requirements of the program against schedule and remaining budget. Outcomes of the PCB are being used as the basis to negotiate a contract change proposal with Viasat Inc. Outcomes of the negotiation will be used in a proposal to for Government approval to extend the Operational Release milestone the Final Operational Capability (FOC) (Pacific Ocean).**
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	8	8	7	6	6	7	48
	Explanation	• **Schedule:** The schedule for the NCS has slipped **70** months. • **Cost:** IS-22 and the NCS are on firm fixed price contracts. Overall costs have increased due to additional work required by the Project Office following signing of CCP2 and CCP3. • **Requirement:** IS-22 has been launched and the NCS is expected to fulfil requirement. • **Technical Understanding:** Interim operation and support of the capability has been established with a long term Through Life Support contract to be established. • **Technical Difficulty:** Core software product previously under development with sub-contractor has ceased. Software development has restarted with Prime Contractor using alternative base product. • **Commercial:** Services are being delivered as contracted.							



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 in 2017-18

Position	Name
Division Head	RADM Anthony Dalton **(to Aug 17)** **Mr Ivan Zlabur (Sep 17 – Current)**
Branch Head	Ms Myra Sefton
Project Director	Ms Michelle Liu-Aves
Project Manager	Mr David Dixon

Project Data Summary Sheet[145]

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 2nd Pass Approval	**$72.0m**
Total Approved Budget (Current)	$411.6m
2017-18 Budget	$**6.9m**
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 overspend of **$2.6m against the 2017-18 cash budget of $6.9m. The overspend is predominantly due to growth work on the developmental elements of the project i.e. Special Forces and Fire Fighting Activation Panels.**

Project Financial Assurance Statement

As at **30 June 2018**, 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

Project SEA 1439 Phase 3 does not have a formal contingency allocation.

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.

Schedule Performance

The project consists of 22 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.

In November 2017, Government approved the transfer of 2 additional sub-projects to SEA1439 Phase 3 (refer to section 1.3 for further details).

Installation of **all** engineering enhancements **is** progressing within schedule tolerance as part of the High Level Work Program for the In-Service Support Contract (ISSC) Performance Period **Three** (**PP3**). Project scope implementation on HMAS *Collins* in FCD **was completed** in **June** 2018 and HMAS ***Dechaineux*** in **Certification Extension** Docking (**CED**) **is** expected to be completed in **July 2018**. **Planning for the next installations: HMAS *Waller* FCD (June 2018 to May 2020) and HMAS *Rankin*** Mid Cycle Docking **(MCD) (January 2019 to December 2019) is underway.** Final Materiel Release (FMR) is expected to be achieved in **December** 2022. **Final Operating Capability (FOC) is expected to be achieved in June 2023**.

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 Initial OR expected to be achieved by December 2018.**

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. **Two additional engineering enhancements transferred from Projects SEA 1114 Phase 3 and SEA 1439 Phase 5B1 (refer table 4.2) will also be implemented progressively until 2022**.

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, two were removed due to one being technically infeasible and the other overlapping with another project. The remaining 22, consisting of two new capabilities and 20 engineering enhancements, have been identified for action under the project. Fourteen engineering enhancements have been completed and the two new capabilities are being implemented. However, completion of the remaining six engineering enhancements are priority driven and will be continually reassessed throughout the project.

The two new capabilities and core engineering enhancements managed by the SEA 1439 Phase 3 project, which represent 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 project SEA 1114 Phase 3 and project SEA 1439 Phase 5B1 into SEA 1439 Phase 3 to realise project management, reporting and workforce efficiencies in the Collins Class Submarine Program. As at 30 June 2018 the financial transfers had not taken place within the Defence financial systems, hence as at 30 June 2018 Project SEA 1114 Phase 3 continued to manage the SEA 1114 Phase 3 scope, schedule and budget, while Project SEA 1439 Phase 5B1 continued to manage the SEA 1439 Phase 5B1 scope, schedule and budget. In the months following 30 June 2018, the remaining budgets of SEA 1114 Phase 3 and SEA1439 Phase 5B1 will be transferred to SEA 1439 Phase 3 thus allowing SEA 1439 Phase 3 to deliver the remaining scope of the three projects in accordance with the November 2017 Government approval.

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.

Major Risks and Issues

Engineering enhancements are managed on a prioritised basis within the funding and skilled resources available, with implementation aligned to the **submarine Integrated Master Schedule** (IMS) which is not controlled by the project. Where **IMS** slip occurs, there is the potential for impact on project cost and schedule performance**, however the likelihood of realisation has been reduced due to overall improvements in Collins Class Submarine maintenance and upgrade activities as evidenced by the removal of Collins Class Sustainment Product (CN10) from the Projects of Concern list in October 2017.**

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 Sub-Projects

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. Stage One includes purchasing two boat sets and completion of the first installation. Stage Two includes the procurement of the residual boat sets and implementation of the remaining submarines.

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.

SEA 1439 Phase 4B Weapons and Sensor Enhancements: Acquire endorsed supplies to address deficiencies identified, in the area of Submarine weapons and sensors.

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

			271.2	
Jul 10	Price Indexation		74.4	7
Jun 17	Exchange Variation		(6.0)	
Jun 17	**Total Budget**		411.6	8
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – ASC Pty Ltd	(251.6)		
	Other Contract Payments / Internal Expenses	(113.7)		
			(365.3)	
FY to Jun 18	Contract Expenditure – ASC Pty Ltd	(9.3)		
	Other Contract Payments / Internal Expenses	(0.2)		
			(9.5)	
Jun 18	**Total Expenditure**		(374.8)	
Jun 18	**Remaining Budget**		36.8	8

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 will be increased in FY18/19 to $445.4m, following the transfer of scope from Projects SEA 1114 Phase 3 and SEA 1439 Phase 5B1. Refer Section 1.3 for further information.**
9	Other expenditure comprises $54.7m 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.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
7.6	6.0	6.9	PBS-PAES: Revised down by ($1.6m) due to **amended (lower) FY17/18 estimate received from the prime contractor.** PAES-Final Plan: **Revised upwards by $0.9m based on the project's re-estimation of the FY16/17 payment to the prime contractor.**
Variance $m	(1.6)	0.9	Total Variance ($m): (0.7)
Variance %	(21.1)	15.0	Total Variance (%): (9.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		2.6	Australian Industry	**The $2.6m overspend is predominantly due to growth work on the developmental elements of the project i.e. Special Forces upgrades and Fire Fighting Activation Panels.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support in Operations	
			Additional Government Approvals	
6.9	9.5	2.6	**Total Variance**	
		37.7	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 18 $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 18		
ASC Pty Ltd	N/A	N/A	See 1.3 Project Context: Background for further information.	

Major equipment received and quantities to 30 Jun 18

A total of 22 platform upgrades (consisting of two new capabilities and 20 engineering enhancements) continue to be progressed for each of the six submarines - subject to the IMS.

Responsibility for two additional engineering enhancements will be transferred to SEA 1439 Phase 3 in FY18/19. The two engineering enhancements continued to be progressed in FY17/18 by Projects SEA1114 Phase 3 and SEA 1439 Phase 5 B1.

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 (DECHAINEUX)	Sep 22	N/A	May 22	(4)	6
	Sewage System Upgrade (COLLINS)	Mar 17	N/A	**Jun** 18	1**5**	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 is expected to be 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 expected to be 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 *Dechaineux* **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 *Rankin* 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.

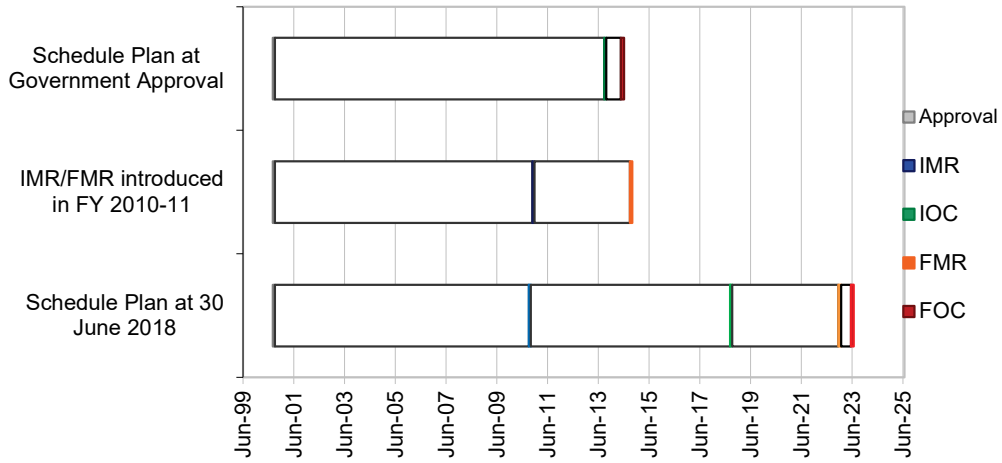
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Jan 11	N/A	
Initial Operational Capability (IOC)				
Initial Operational Release Special Forces Upgrade	Nov 10	**Dec 18**	**97**	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)				
Operational Release of Special Forces Upgrade	Jun 07	Feb 20	153	7
Operational Release of Torpedo Decoy	Jun 14	**Dec 18**	**54**	8
Fire Fighting Upgrade (DECHAINEUX)	Jun 14	May 22	95	9
Sewage System Upgrade (COLLINS)	Jun 14	**Jun** 18	4**8**	**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	Special Forces Upgrade modifications have been delayed due to the requirement to implement safety modifications identified during the manned Sea Verification Trial. These safety modifications have been installed and harbour and sea acceptance testing was completed in June 2015. The project completed Sea Verification Trials in 2017. The results of the trial demonstrated the capability successfully, **however formal IOR has been delayed due to the November 2017 transition of the authorities that previously endorsed IOR under the Navy Regulatory System (NRS) to the authorities that perform the equivalent role within the new Defence Seaworthiness Management System (DSwMS).**
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.
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. The delay was further influenced by contractor workforce constraints and the phased delivery of capability enhancements to the Special Forces systems. Operational Test and Evaluation estimated to take twelve months dependent on submarine availability and other resources. Forecast date is February 2020.
8	Delay in achieving IOR for the Torpedo Decoy has caused a delay to OR to allow for Navy to conduct the required Operational Test and Evaluation Period. Operational Test and Evaluation (OT&E) **planning** is underway **with Navy advising that the necessary firings will occur in 2018 in conjunction with other firings. Forecast OR date is December 2018.**
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 COLLINS 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 will be transferred to SEA 1439 Phase 3 in FY18/19.**

Schedule Status at 30 June 2018



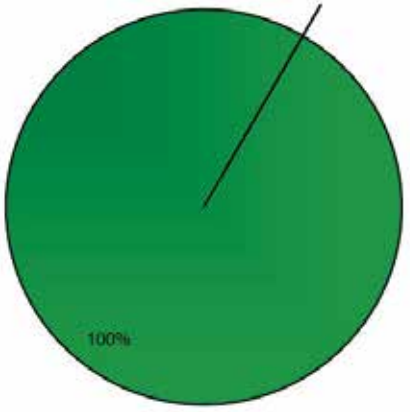
Note

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 now physically complete with Initial OR expected to be achieved by December 2018.** 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: • Special Forces Upgrade: **Two of the three capabilities;** • Torpedo Countermeasures; • Fire Fighting Upgrade: HMA Ships *Waller, Dechaineux and Sheean*; • Sewage System Upgrade: HMA Ships *Waller* and *Dechaineux*; • Fast-Track modifications: HMA Ships *Collins, Farncomb*, *Waller* and *Rankin*; and • Other remaining subordinate projects relating to platform build deficiencies in a holistic get-well program.	Achieved
Final Materiel Release (FMR)	Completion of previous Materiel Releases (Refer Section 1) and dockings up to and including HMA Ships *Waller* and *Dechaineux* FCD consisting of: • Special Forces Upgrade – **All nominated Submarines, all capabilities;** • Diesel Engine Upgrades: All Submarines (expected end HMAS *Waller* FCD (May 2020); • **Dived Safety Modifications to HMA Ships *Waller* and *Dechaineux; and*** • **Communications Antenna Capability Enhancement to HMAS *Waller.*** FMR is planned for **December** 2022.	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 Wormald HALON actuation solution does not meet the required discharge time due to system integration issues or capacity.	• Compliance requirement flowed to Wormald who have to demonstrate how this can be achieved. • System engineering (Preliminary and Detailed Design Reviews etc) will be adhered to ensure adequate review and acceptance is carried out during the design process. **This risk has been reduced to Medium (post-mitigation) due to reduced likelihood of risk realisation.**
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 the MX1 Fire Panel prototype presented requires an adaptation of backlighting solution to be effective and function appropriately in operating environment.	• 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 the Conning Tower (CT) Upper Hatch (UH) becomes jammed ajar with divers present within the CT because of the CT UH mechanism becoming jammed or blocked.	• Improvements of a removable link in the outboard mechanism has been installed which can be removed by the diver in the fin to allow direct operation of the hatch. • Improvement in the regular maintenance regime on the hatch will improve its operation. **This risk has been reduced to Low (post-mitigation) due to reduced likelihood of risk realisation.**
There is a chance that the Diver Air Breathing System (DABS) will require maintenance and repair on each occasion the system is utilised because of limited schedule maintenance of the DABS system.	• 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.**
There is a chance that required spares to conduct Special Forces activities will be delayed due to insufficient allowance or availability.	• Work with the nominated stock item owner to ensure that sufficient sparing is procured and serviceable in accordance with operational & maintenance requirements. **This risk has been re-assessed (pre-mitigation) from High to Medium and reduced to Low (post-mitigation) due to reduced likelihood of risk realisation.**
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	**N/A**

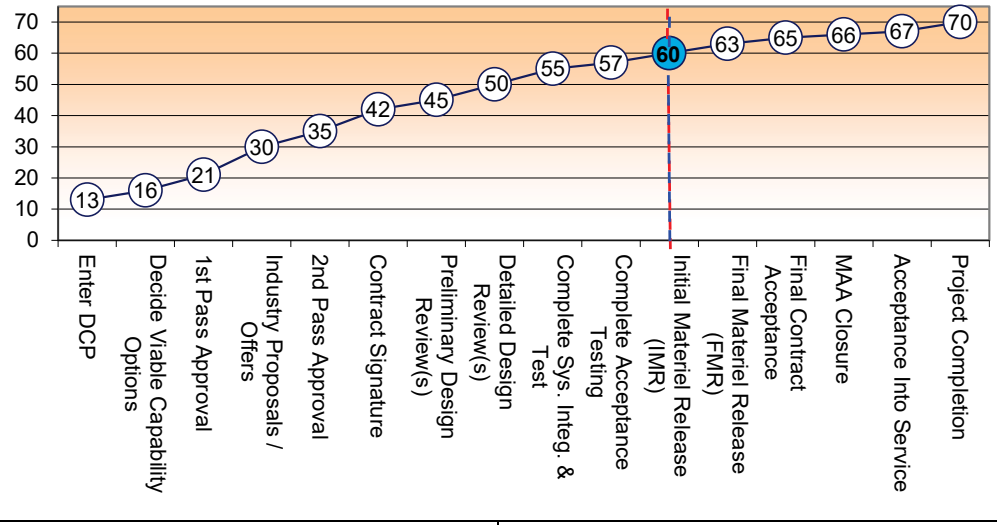
5.2 Major Project Issues

Description	Remedial Action
A Special Forces manned sea verification Trial was not conducted 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.**	• Update all Special Forces documentation associated with the operation and support of the Special Forces capability. • Engage SUBSAFE Board to ensure expectations are being managed and stakeholders are aligned. • Ensure configuration change instructions are approved for the design. • Assist ASC where possible in rectifying the compressible volume curtain defect and facilitate boat access to conduct required repairs and testing.
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							
		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	8	9	9	8	9	60
	Explanation	• Schedule: Stability in the Integrated Master Schedule has improved confidence in the project to meet its schedule delivery targets. • Technical Understanding: Majority of the project modifications are in operation and support solutions have been transferred to end users.							



2016-17 MPR Status - - - - | 2017-18 MPR Status - - - -

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 in 2017-18

Position	Name
Division Head	Mr Stephen Johnson
Branch Head	CDRE Richard Fitzgerald
Project Director	Mr Brad Hajek
Project Manager	Mr Brad Hajek **(to Sep 2017)** **Mr George Paragios (Sep 2017–current)**

Project Data Summary Sheet[146]

Project Number	**SEA 1448 Phase 2A**
Project Name	**ANZAC ANTI-SHIP MISSILE DEFENCE**
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	Nov 03
Budget at 2nd Pass Approval	**$449.0m**
Total Approved Budget (Current)	$386.8m
2017- 18 Budget	$**4.7m**
Project Stage	**Final Materiel Release**
Complexity	ACAT II

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 2A of the ASMD Project, **upgraded** all eight of the ANZAC Class Ship's existing 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.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2018 the project has achieved its budget for this Financial Year (FY).

Project Financial Assurance Statement

As at 30 June 2018, project SEA 1448 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 **(including the remediation of the IRST support deficiency),** 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 systems being provided under Phase 2A are being delivered to current schedule **with the IRST Reference Set due in December 2018**. Overall, due to the interdependence of Phase 2A with Phase 2B, the Government approving a change of acquisition strategy for Phase 2B in August 2009 and the Real Cost Increase for Phase 2B for the follow on ships 2-8 in November 2011, there is now a **80** 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 package of work, a revised schedule was developed for ships four onwards. **Project will be claiming Final Materiel Release (FMR) from the Capability Manager in July 18. The TI-338 has been submitted for regulatory review and the project expects Navy to be able to declare Final Operating Capability by August 2018. The outstanding issue regarding IRST support has been addressed by the provision of an in-country facility which is on contract, under Maritime Cross-Platform Support Programme Office (MCPSPO), and due for delivery in December 2018.**

Materiel Capability Delivery Performance

The Initial Materiel Release 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

[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.

systems on 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.

Note

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

1.3 Project Context

Explanation

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 2A is the initial phase of the ANZAC ASMD Program, performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Australia **(previously Saab Systems)**, to provide ship systems capable of integrating missile defence systems.

Phase 2A was approved by Government in November 2003 for $449.0m (December 2003 prices). This included an element for the Very Short Range Air Defence (VSRAD) System (two per ship) of $155.4m, which was quarantined pending the outcome of investigations into an active Phased Array Radar system (PAR) (referred to as CEAFAR) and its Sea trials conducted in 2004, which was subsequently approved in the SEA 1448 Phase 2B Second Pass Approval.

SEA 1448 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Phase 2A represents a low risk due to its in-service equipment.

As a result of technical issues in the integration of the phased array radar into the Class with Phase 2B of the ASMD Project in 2007, a change to the Phase 2B Project acquisition strategy caused delays in the installation of the equipment being purchased under Phase 2A. These delays do not impact on the delivery of the Phase 2A equipment, which is being delivered into store and appropriately maintained until the Phase 2B acquisition strategy calls on the equipment for installation.

To support the upgraded Mk3E Combat Management System and Infra-Red Search and Track (IRST), a combined ASMD Integration and Training Centre was built by the then Defence Support Group (DSG) in 2006. This building was added to the existing ANZAC System Support Centre located at HMAS *Stirling* in Western Australia. This facility was made available for lead ship training between September 2010 and April 2011 and was formally handed to Navy in August 2011.

The support for the Mk3E Combat Management System is already in contract as there is an existing sustainment support contract with Saab Australia (Australia) for the existing Saab Mk3 Combat Management System that is already installed in the ANZAC Class.

The IRST will be supported through the current ANZAC Alliance arrangements.

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.

Uniqueness

The Phase 2A Combat Management System upgrade is the next generation of the Mk3E system initially installed on the final ANZAC Class Frigate (HMAS *Perth*). The Mk3E was the first Windows XP based Commercial-Off-The-Shelf combat management system in the RAN and was initially installed in HMAS *Perth* as part of a de-risking trial.

This Phase of the ASMD Project is currently fully contracted through the ANZAC Ship Alliance.

Major Risks and Issues

An issue for SEA 1448 Phase 2A relates to delays in establishing a contract to remediate IRST system support deficiencies which have resulted in delay to project Material Acquisition Agreement closure and preceding major milestones. The solution to the support issue was to procure two additional sensor heads and a test bed. The two sensor heads have been procured and the test bed contract has been established with a delivery expected to occur in December 2018.

MAA closure has been delayed but with project now about to claim FMR, the process for moving forward should be routine for a project of this complexity.

Finally, the Budgeted Cost Model (BCM) and Assets Under Construction (AUC) are not correctly maintained and rolled out **in time for FMR/FOC is understood and will be finalised when the IRST Test bed is delivered in Dec 18.**

Other Current Sub-Projects

SEA 1448 Phase 2B - This Phase completes the ASMD Upgrade by delivering a Phased Array Radar (PAR) System consisting of a target indication and tracking radar titled CEAFAR and a missile illuminator system, titled CEAMOUNT which will provide mid-course guidance and terminal illumination to the Evolved Sea Sparrow Missile (ESSM). This phase also replaces the existing ANZAC Class navigation radar.

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			
Jan 04	Original Approved **(Second Pass Approval)**		449.0	
Aug 04	Real Variation – Budgetary Adjustments	(0.1)		
Mar 06	Real Variation – Transfers	(155.4)		1
Feb 07	Real Variation – Transfers	(4.4)		2
			(159.9)	
Jul 10	Price Indexation		101.3	3
Jun 18	Exchange Variation		(3.6)	
Jun 18	**Total Budget**		386.8	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Saab Australia Pty Ltd (CMS)	**(109.3)**		4
	Contract Expenditure – BAE Systems Australia (IRST)	**(93.5)**		
	Contract Expenditure – BAE Systems Australia (Follow On)	**(81.6)**		4
	Contract Expenditure – BAE Systems Australia (First of Class)	**(37.6)**		4
	Contract Expenditure – Saab Australia Pty Ltd (First of Class)	**(24.0)**		4
	Other Contract Payments / Internal Expenses	**(23.4)**		4, 5
			(369.4)	
FY to Jun18	Contract Expenditure – BAE Systems Australia (Follow On)	**(3.6)**		
	Other Contract Payments / Internal Expenses	**(1.1)**		5
			(4.7)	
Jun18	**Total Expenditure**		**(374.1)**	
Jun18	**Remaining Budget**		**12.7**	

Notes	
1	$155.4m transferred to Project SEA 1448 Phase 2B for phased array radar procurement with procurement of VSRAD capability as directed by Government.
2	Transferred to the then DSG for facilities funding of the ASMD Systems Integration and Training Centre.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $88.8m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $12.5m having been applied to the remaining life of the project.
4	The amounts for each contract differ from prior years due to a revalidation of life to date expenditure.
5	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, 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
4.5	**4.7**	**4.7**	PBS - PAES: The variation of **$0.2**m is due to **the provision of additional budget for the IRST Contractor.** PAES - Final Plan: **No change**
Variance $m	**0.2**	**0.0**	Total Variance ($m): **0.2**
Variance %	**4.4**	**0.0**	Total Variance (%): **4.4**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Nil
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
4.7	4.7	0	**Total Variance**	
		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 18 $m			
Saab Australia Pty Ltd (CMS)	Apr 05	123.1	109.3	Variable	Alliance	1
BAE Systems Australia (IRST)	Apr 05	104.9	93.5	Variable	Alliance	2
BAE Systems Australia (First of Class)	May 06	26.0	37.6	Variable	Alliance	1, 2, 3
Saab Australia Pty Ltd (First of Class)	May 06	6.8	23.9	Variable	Alliance	1, 3
BAE Systems Australia (Follow on Ships)	Jan 12	74.9	86.7	Variable	Alliance	1, 2

Notes

1	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 and remaining commitment at current exchange rates.
2	These contracts are listed with BAE Systems Australia, formerly Tenix Defence.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
Saab Australia Pty Ltd (CMS)	8	8	Combat Management Systems and Fire Control System upgrades	1
BAE Systems Australia (IRST)	8	8	Infra-red Search and Track Systems	1
BAE Systems Australia (First of Class)	1	1	First of Class Installation	
Saab Australia Pty Ltd (First of Class)	1	1	First of Class Installation	
BAE Systems Australia (Follow on Ships)	7	7	FON Ships 2-8 Installation	

Major equipment received and quantities to 30 Jun 18

Installation has been completed for **all ships**

Notes

1	$155.4m transferred to Project SEA 1448 Phase 2B for phased array radar procurement with procurement of VSRAD capability as directed by Government

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/Fire Control Director/Infra-Red Search and Track – Stage 1 (Requirements Review)	Feb 04	N/A	Aug 05	18	1
	Mk3E Combat Management System/Fire Control Director – Stage 1 (Functional Review)	Apr 05	N/A	Aug 06	16	1
	Mk3E Combat Management System/Fire Control Director – Stage 1 (System Performance Review)	N/A	N/A	Nov 06	N/A	
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	May 06	N/A	
Preliminary Design	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track System – Stage 1	Nov 05	N/A	Aug 07	21	1
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	Nov 06	N/A	
Critical Design	Stage 1 Critical Design Review – Part 1 (All except Phased Array Radar in the AFT mast)	Sep 06	N/A	May 08	20	1

	Stage 1 Critical Design Review – Part 2 (Remaining components of AFT mast)	N/A	N/A	Aug 08	N/A	
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	Jun 07	N/A	

Notes	
1	Variances indicated are directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.

3.2 Contractor Test and Evaluation Progress

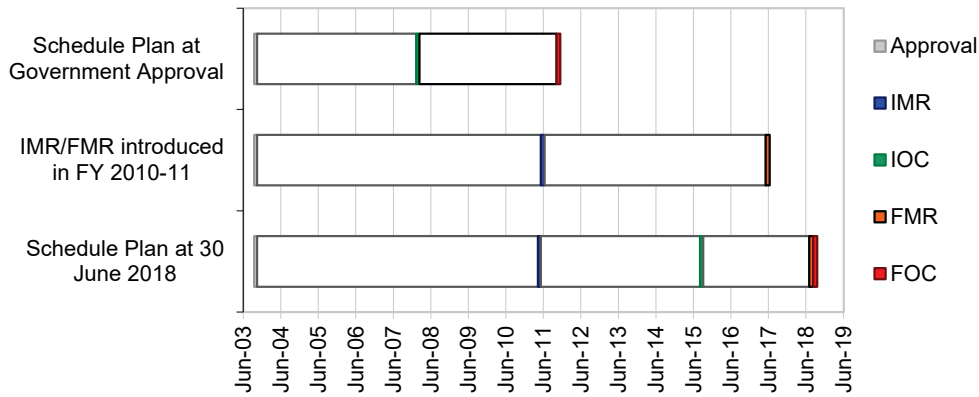
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Nov 07	N/A	Mar 11	40	1, 2
Acceptance	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Apr 08	Jun 11	Jun 11	38	1

Notes	
1	Variance indicated was directly linked to the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.
2	Additional variance of one month due to production completion delay of one month in lead ship HMAS *Perth*.

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)	Mar 08	Sep 15	**90**	1
Final Materiel Release (FMR)	Jul 17	**July 18**	**12**	2
Final Operational Capability (FOC)	Dec 11	**Aug 18**	**80**	3

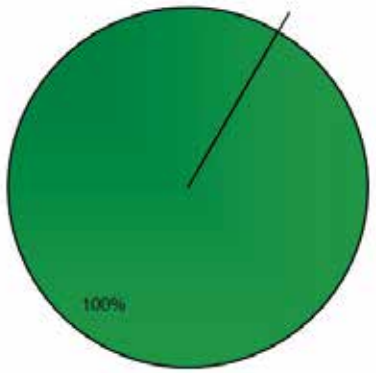
Notes	
1	Variance was directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform. The previous variance was linked to the updated Materiel Acquisition Agreement (MAA) which moved IOC until after PAR System has been proven against Super Sonic Targets.
2	**The project is expecting to submit a claim for the achievement of FMR from the Capability Manager in July 2018. The delay is due to the approval of ships 2-8 by Government and the implementation of the IRST support equipment contract Declaration of this milestone is dependent on Capability Manager agreement to the resolution of the IRST logistics issue noted in Section 5.2**
3	Variance is a result of the ASMD Project Management Stakeholder Group agreeing to link the completion date of this Phase of the Project with that of Phase 2B and the approval of ships 2-8 by Government **and the implementation of the IRST support equipment contract Declaration of this milestone is dependent on Capability Manager agreement to the resolution of the IRST logistics issue noted in Section 5.2.**



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:** The Project is meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities. **The one outstanding issue has been addressed by the contract for the delivery of the IRST test bed due in December 2018. FMR will be claimed on this basis in July 2018 and is consistent with Navy Sponsor Minute** **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)	Provisional acceptance of the ASMD upgraded HMAS *Perth*.	Achieved
Final Materiel Release (FMR)	**The final ship achieved Materiel Release in October 2017. FMR represents acceptance** of all ASMD upgraded ships and associated supplies **and will be claimed by CASG in July 2018**.	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 2017-18)	
Description	Remedial Action
N/A	N/A

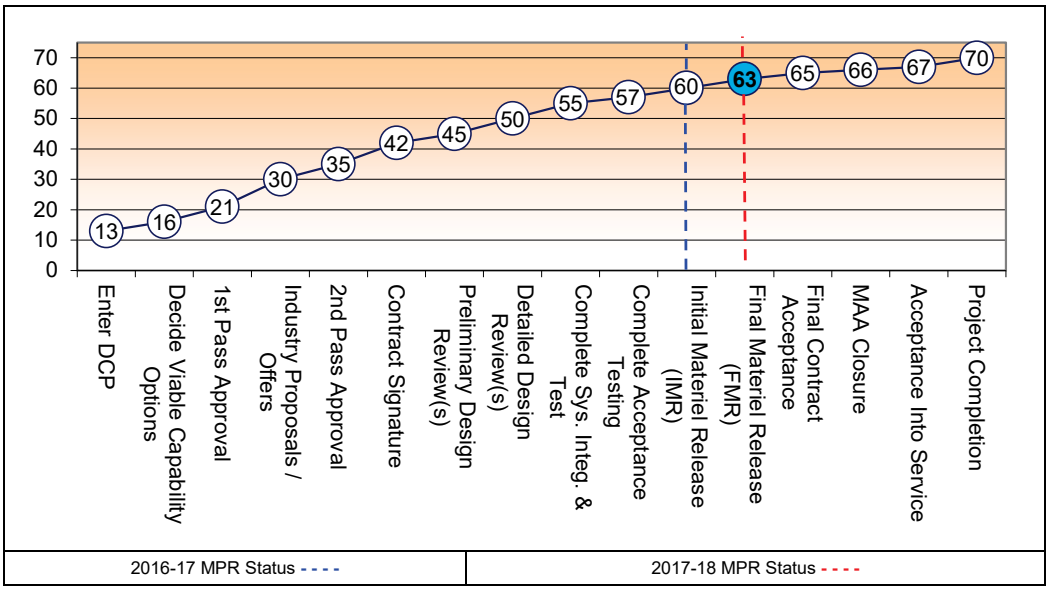
5.2 Major Project Issues

Description	Remedial Action
Incorrect estimates of IRST support requirements require purchase of additional spares	IRST capability does not achieve expected MTBF performance as agreed under the contract. Remediation of this issue is the procurement of additional sensor heads and a test bed to allow deeper maintenance without having to return items to France. The two sensor heads have been procured and the contract is in place for the test bed, delivery expected in December 2018.
MAA closure is delayed as activities have not been planned and costed	Resolution of planning and costing of final MAA deliverables is expected to be agreed by the Capability Manager when FMR is declared (expected for July 2018).
Budgeted Cost Model (BCM) and Assets Under Construction (AUC) are not correctly maintained and rolled out.	AUC rollout of major assets is almost completed. Rollout of final deliverables is expected to occur in Dec 2018 with delivery of the IRST Test Rig.
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	9	9	9	8	9	63
Final Materiel Release	Project Status	8	9	10	9	10	8	9	63
	Explanation	1. **Schedule:** Schedule is mature with all ships completed but is delayed and at further risk due to linkage with SEA1448 Ph2B for claiming remaining milestones. 2. **Requirement:** Based on the completion of OT&E and in-service experience, the requirements of Phase 2A are clearly understood. 3. Technical Difficulty: Successful OT&E completed in August 2013 and subsequent in-service experience confirms design meets operational requirements.							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.	Requirements Management
Ensuring that stakeholder engagement at all levels (engineering and strategic) is culturally embedded within the Project Team.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2017-18

Position	Name
Division Head	RADM Adam Grunsell, RAN
Branch Head	CDRE Steve Tiffen **(to June 18)** **CDRE Rob Elliott, RAN (June 18-current)**
Project Director/Manager	Mr Ian MacKinnon **(to April 2018)** **CMDR Mark Whitehouse, RAN (April 2018-current)**

Project Data Summary Sheet[147]

Project Number	**LAND 75 Phase 4**
Project Name	**Battlefield Command Systems**
First Year Reported in the MPR	2015-16
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Army
Government 1st Pass Approval	Aug 13
Government 2nd Pass Approval	Aug 13 (Work Package A)
Budget at 2nd Pass Approval	**$319.0m**
Total Approved Budget (Current)	**$367.9m**
2017–18 Budget	**$30.6m**
Project Stage	**Final Contract Acceptance**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

LAND 75 Phase 4 **increased** and **enhanced** Army's networked force acquired under LAND 75 Phase 3.4. The Battle Management System Command and Control (BMS-C2) **provides** tactical and operational commanders with enhanced situation awareness tools, evolved command and control, extend the capability into the armoured fighting vehicle fleets and enrich training and simulation to provide a collaborative approach to complex warfighting.

LAND 75 Phase 4 was initially divided into four work packages consisting of:

- Work Package Alpha (WP-A) - Approved. This work package **expanded** the basis of provisioning for M113AS4 (Armoured Personnel Carriers), Protected Mobility Vehicles and G-Wagon.
- Work Package Bravo (WP-B) - **Approved**. This work package seeks to integrate the BMS-C2 into additional vehicle platforms.
- Work Package Charlie (WP-C) - **Approved**. This work package seeks to implement a mature BMS-C2 training solution.
- Work Package Delta (WP-D) - **Approved**. This work package seeks to extend the functionality of the BMS-C2 to support formation headquarters and enhance the **interoperability with joint and coalition systems.**

Land 75 Phase 4 Work Packages B, C and D are **now** considered under Land 200 Tranche 2 **which was approved by Government in September 2017**. LAND 75 Phase 4 Work Package Alpha is a continuation of LAND 75 Phase 3.4 from the Major Projects Report of 2014-15. Under LAND 75 Phase 3.4, the Commonwealth implemented the core Battle Group and Below – Command, Control and Communications (BGC3) system capability for the Australian Defence Force's Land Force.

LAND 75 Phase 4 WP-A **provided** additional quantities of BGC3 to:

- 294 M113AS4 (Armoured Personnel Carriers),
- 255 Protected Mobility Vehicles,
- 401 G-Wagon Vehicles, and
- 10 Engineering kits.

LAND 75 Phase 4 WP-A **has** also:

- **Designed and integrated the** BGC3 into the Protected Mobility Vehicle Air Defence Variant (PMADV), and
- **Enhanced** the BGC3 capabilities through extension of the BGC3 Variable Message Format (VMF).

In October 2014, Government approved project closure arrangements for LAND 200 Tranche 1 that finalised the transfer of M113AS4 BGC3 installation activities to LAND 75 Phase 4 from LAND 75 Phase 3.4 that was originally agreed by Government as part of the 2012 Federal Budget.

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.

Following Government 1st Pass approval in August 2013, the Commonwealth conducted a series of Risk Reduction Activities (RRA). These activities allowed further development, refinement and validation of key requirements and operational concepts through the use of Concept Demonstrators to inform future Government consideration. These activities concluded in November 2015.

1.2 Current Status

Cost Performance

In-year

In-year expenditure of $28.4m resulted in an underspend of $2.2m against a budget of $30.6m. The underspend against phasings is due to the delay in the delivery of a Milestone assessment report for the Specific Absorption Rate Survey and Quote.

Project Financial Assurance Statement

As at 30 June 2018, project LAND 75 Phase 4 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, 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 completion of risk reduction activities related to the M1A1 Tank Weapons Integrated Battle Management System to reduce technical and commercial risk to LAND 200 Tranche 2 and LAND 400 Phase 2. This work concluded in May 2018.

Schedule Performance

In the 2012 Federal Budget, the Government moved Battle Management System (BMS) installation into M113AS4 Armoured Personnel Carrier (APC) from LAND 75 Phase 3.4 to the then unapproved LAND 75 Phase 4 WP-A, leaving design activities with LAND 75 Phase 3.4. In the Government Approval of WP-A in 2014 the remaining M113AS4 APC design work was transferred from LAND 75 Phase 3.4 to LAND 75 Phase 4 WP-A.

LAND 75 Phase 4 WP-A has achieved Initial Materiel Release (IMR), with the completion of 36 Bushmaster Command Variant vehicles. The project has completed all installations of the BGC3 system into vehicles in accordance with the materiel release milestones.

The project has conducted design and system testing on the full scope of VMF messages delivered under WP-A. System level regression testing (Conformance to standard testing) was completed as a single test Program synchronised with In Service Support Release.

The installation of the Bushmaster Air Defence Variant was completed in July 2017.

In the 2013 Government Approval of LAND 75 Phase 4 there is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 WP-A. IOC and FOC are linked to WP-B-D, which is now an element of LAND 200 Tranche 2.

The now approved scope of Land 75 Phase 4 Work Packages B, C and D are considered under Land 200 Tranche 2 which was approved by Government in September 2017. Final Materiel Release (FMR), achieved in December 2017, constituted the final deliverable for the Project.

Materiel Capability Delivery Performance

The project achieved Initial Materiel Release (IMR) of 36 PMCV BGC3 installed vehicles in June 2016.

The project achieved Final Materiel Release (FMR) in December 2017.

Note

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

1.3 Project Context

Background

LAND 75 Phase 4 WP-A received Government Combined First and Second Pass Approval in August 2013. LAND 75 Phase 4 WP-A is a Contract Change Proposal (CCP) to the BGC3 Contract. The CCP was executed with the Prime Contractor on 19 December 2013.

LAND 75 Phase 4 WP-A has delivered additional BGC3 installed into the following platforms:

- 36 Bushmaster Protected Mobility Command Vehicle (PMCV),
- 126 Bushmaster Protected Mobility Troop Vehicle (PMTV),
- 61 Bushmaster Protected Mobility Ambulance Variant (PMAV),
- 20 Bushmaster Protected Mobility Air Defence Variant (PMADV),
- 12 Bushmaster Protected Mobility Electronic Warfare (PMVEW) vehicle installation kits,
- 5 Bushmaster PMCV engineering vehicle installation kits,
- 5 Bushmaster PMTV engineering vehicle installation kits,
- 26 G-Wagon General Service Vehicles,
- 123 G-Wagon Manoeuvre Vehicles,
- 123 G-Wagon upgrades from General Service Vehicle to Manoeuvre Vehicle,
- 129 G-Wagon Command and Control vehicle installation kits, and
- 294 M113AS4 Armoured Personnel Carriers.

Uniqueness

The capability being delivered under LAND 75 Phase 4 WP-A is a continuation of the capability delivered under LAND 75 Phase 3.4. LAND 75 Phase 4 WP-A does contain design development for the PMADV variant of Bushmaster, which is based largely on the Command Vehicle design delivered under LAND 75 Phase 3.4. The software development of enhanced variable message format (VMF) BGC3 interoperability capability does introduce software engineering development scope.

Major Risks and Issues

Nil.

Other Current Sub-Projects

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 Battlefield Command System comprises of two major sub-systems:

- Battle Management System (BMS) – a digital military planning and monitoring system with an electronic battle map which displays combat related data; including navigation information, task overlays, orders and messages. Friendly force positions are automatically updated and enemy force positions are updated by staff and external systems, and
- Tactical Communications Network (TCN) – mobile, highly secure, communications infrastructure that provides voice services and data distribution for the BMS and other combat 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			
Nov 13	Original Approved (Combined Pass Approval)		319.0	1
Jun 15	Real Variation – Real Cost Increase		8.5	2
Jun 18	Exchange Variation		40.4	
Jun 18	**Total Budget**		367.9	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Elbit Systems Limited	(296.3)		3
	Other Contract Payment / Internal Expenses	(25.9)		4
			(322.2)	
FY to Jun 18	Contract Expenditure – Elbit Systems Limited	(22.6)		3
	Other Contract Payment / Internal Expenses	(5.9)		5
			(28.5)	
Jun 18	**Total Expenditure**		(350.7)	
Jun 18	**Remaining Budget**		17.2	

Notes	
1	This project's original budget amount represents a combined First and Second Pass for Work Package Alpha as well as a First Pass for Work Package Bravo to Delta.
2	Real Cost Increase for M113AS4 design effort from LAND 75 Phase 3.4.
3	Expenditure against LAND 75 Phase 4.
4	Other expenditure comprises: Contractor Support ($12.1m), Operating Expenditure ($6.9m), Consultants ($6.3m), Minor Capital ($0.6m) and expenditure not attributable to the Prime contract.
5	Other expenditure comprises: Contractor Support ($2.9m), Consultants ($2.2m), Operating Expenditure ($0.7m), Minor Capital ($0.1m) and expenditure not attributable to the Prime contract.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
24.6	30.0	30.6	PBS-PAES: The variation relates to later than expected WP-A final acceptance and physical configuration audit activities as mentioned in section PDSS 3.1 Physical configuration audit activities from the prior financial year, and paid for in this financial year, as mentioned in Section 3.1 of the PDSS. PAES-Final Plan: The Variation relates to a PRE-ERC and PBS exchange rate update. .
Variance $m	5.4	0.6	Total Variance ($m): 6.0
Variance %	22.0	2.0	Total Variance (%): 24.4

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The underspend against phasings is due to the delay in the delivery of a Milestone Assessment Report for the Specific Absorption Rate Survey and Quote.
		(2.2)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
30.6	28.5	(2.2)	Total Variance	
		(7.2)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
Elbit Systems Limited	Dec 13	204.3	337.4	Variable	ASDEFCON	1,2,3

Notes	
1	This includes escalation on the Milestone as the contract is in Base Date Quarter three 2007 prices.
2	The increase in contract value is due to the Survey and Quote 044 activities.
3	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
Elbit Systems Limited	666	960	BGC3 installed into M113, PMV and G-Wagons	1,2,3

Major equipment received and quantities to 30 Jun 18

Bushmaster Protected Mobility Vehicle Command Variant (PMCV) – 36
Bushmaster Protected Mobility Vehicle Troop Variant (PMTV) – 126
Bushmaster Protected Mobility Ambulance Variant (PMAV) – 61
Bushmaster Protected Mobility Air Defence Variant (PMADV) – 20
Bushmaster Protected Mobility Vehicle Electronic Warfare (PMEW) – 12
Bushmaster Protected Mobility Vehicle Command Variant (Engineering Quantities) – 5
Bushmaster Protected Mobility Vehicle Troop Variant (Engineering Quantities) – 5
G-Wagon General Service Variant – 26
G-Wagon Manoeuvre Variant –123
G-Wagon General Service Variant to Manoeuvre Variant Upgrade –123
G-Wagon Command and Control Variant – 129
M113AS4 Armoured Personnel Carrier –294

Notes	
1	CCP 019 executed on 19 December 2014 for the supply of BGC3 vehicle installation kits for M113AS4.
2	CCP 022 executed on 9 December 2015 for the installation of BGC3 vehicle installation kits into the M113AS4.
3	Survey and Quote 044 executed on 28 March 2017 for the installation of BGC3 vehicle installation kits into the PMADV.

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	PMADV	Jun 14	Sep 14	Jan 15	7	1
Detailed Design	M113AS4 APC	Dec 11	N/A	Feb 15	38	2
	PMADV	Dec 15	Nov 15	Mar 16	6	3
Functional Configuration Audit	M113AS4 APC	Sep 15	N/A	Oct 15	1	
	PMADV	Nov 15	Mar 17	Jun 17	19	4
	VMF Software	Mar 17	N/A	N/A		5
Physical Configuration Audit	M113AS4 APC	Sep 15	N/A	Oct 15	1	6
	PMADV	Nov 15	Apr 17	Jun 17	19	4
	VMF Software	Mar 17	N/A	N/A	4	5

Notes	
1	Delays due to the availability of Government Furnished Equipment.
2	Delays in LAND 75 Phase 3.4 due to complex design issues.
3	Delays by contractor not achieving entry criteria for Detailed Design PMADV.
4	Delays by contractor not achieving entry criteria for Functional Configuration Audit and Physical Configuration Audit for PMADV.
5	Final release to be synchronised with In Service Support Release.
6	Delays due to approval of user handbooks and manuals.

3.2 Contractor Test and Evaluation Progress

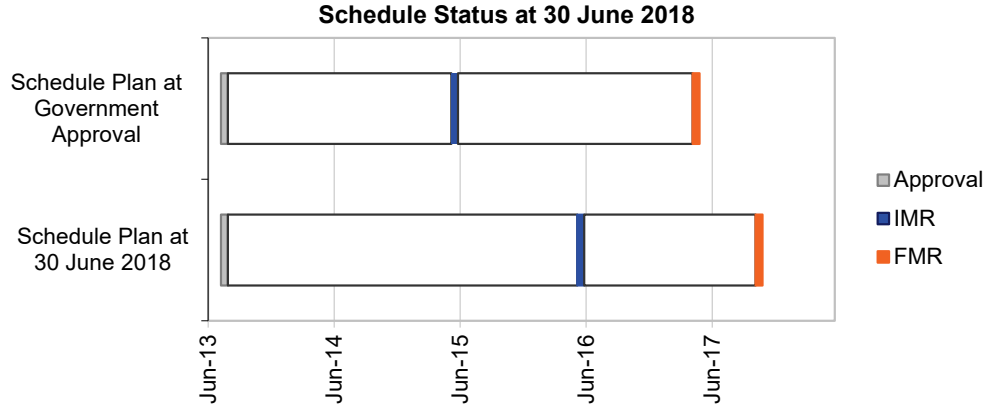
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Conformance to Standard Testing	VMF Software	Nov 16	N/A	N/A	(2)	1, 2
First Article Factory Testing	PMADV	Jul 16	N/A	Dec 16	5	3

Notes	
1	System integration was completed under LAND 75 Phase 3.4.
2	Conformance to standard testing **was completed** as a single test program synchronised with In Service Support Release.
3	Delays due to approval of acceptance test report.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jun 15	Jun 16	12	1
Materiel Release 2	Feb 16	**Dec** 17	**22**	2
Materiel Release 3	Mar 16	**Dec** 17	**21**	2
Materiel Release 4	Nov 16	**Dec** 17	**13**	3
Materiel Release 5	Dec 16	**Dec** 17	**12**	2
Materiel Release 6	Mar 17	**Dec** 17	**9**	4
Final Materiel Release (FMR)	Jun 17	**Dec** 17	**6**	4,5,**6**

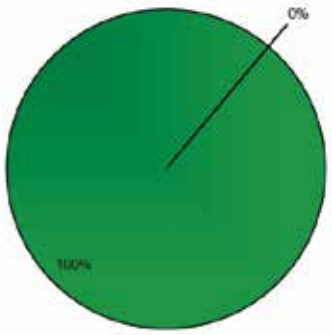
Notes	
1	Installations for IMR were delivered in July 2015, However the achievement of IMR did not occur until June 2016 after design acceptance was achieved.
2	Delayed due to provision of Government Furnished Equipment to Contractor. Delivery of Supplies achieved in June 2017. **Materiel Release achieved in December 2017.**
3	Delivery of Supplies achieved in February 2016. **Materiel Release achieved in December 2017.**
4	Delayed due to provision of Government Furnished Equipment to Contractor. Delivery of Supplies **was achieved** July 2017. **Materiel Release achieved in December 2017.**
5	**The now approved** scope of Land 75 Phase 4 Work Packages B, C and D **has been** transferred to Land 200 Tranche 2. FMR **achieved in December 2017 constituted** the final deliverable for the Project.
6	**There is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 Work Package A. IOC and FOC are linked to Work Packages B-D.**



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 **has met** capability requirements as expressed in the Material 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)	Delivery of 36 installed BGC3 **Bushmaster** PMCV vehicles. Installations for IMR were delivered in July 2015. However, the achievement of IMR did not occur until June 2016 after design acceptance was achieved.	Achieved.
Final Materiel Release (FMR)	FMR requires the following to be delivered: 36 installed BGC3 **Bushmaster** PMCV vehicles, **123** BGC3 G-Wagon upgrades from GSV to MNV vehicles, 123 installed BGC3 G-Wagon MNV vehicles, 26 installed BGC3 G-Wagon GSV Dual Cabin vehicles, 126 installed BGC3 **Bushmaster** PMTV vehicles, **61 installed BGC3 Bushmaster PMAV vehicles**, 12 BGC3 **Bushmaster** PMVEW vehicle installation kits, 5 BGC3 **Bushmaster** PMCV engineering vehicle installation kits, 5 BGC3 **Bushmaster** PMTV engineering vehicle installation kits, 129 BGC3 G-Wagon Command and Control vehicle installation kits, 294 installed BGC3 M113AS4 Armoured Personnel Carriers, additional VMF messages and 20 installed BGC3 **Bushmaster** PMADV vehicles. FMR achieved in **December** 2017.	**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 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

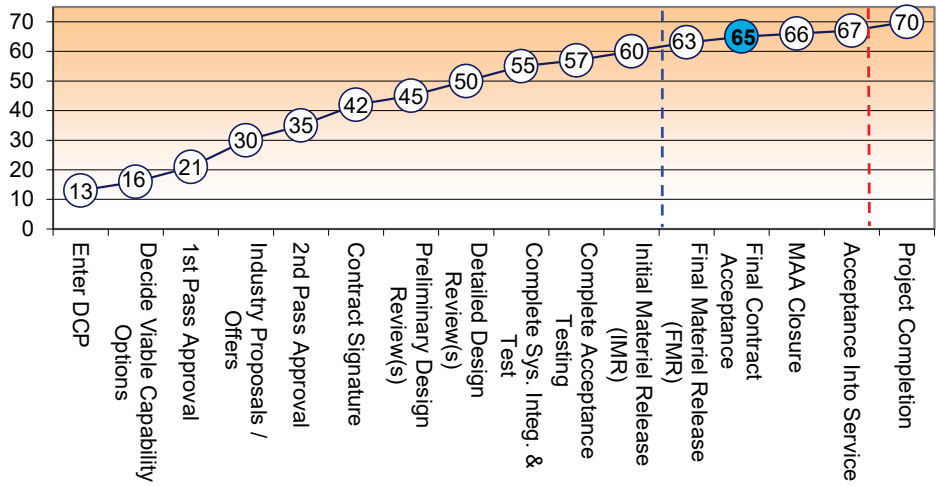
Description	Remedial Action
N/A	N/A

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	9	10	10	68
	Explanation	• Technical Understanding – Operational Test and Evaluation activities has confirmed the suitability of the design for its intended used with all supplies transitioned to in service support arrangements. • Commercial – The Contractor has achieved Contract Final Acceptance and selected as the Prime Contractor for LAND 200 Tranche 2 Battle Management System. • Operations and Support – The materiel and support system are fully operational.							



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 in 2017–18

Position	Name
Division Head	RADM Tony Dalton (to – Aug 17) Mr Ivan Zlabur (Sep 17 – current)
Branch Head	Ms Alison Petchell
Project Director/Manager	LTCOL Rob Gunn

Project Data Summary Sheet[148]

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 2nd Pass Approval	$235.7m
Total Approved Budget (Current)	$236.7m
2017-18 Budget	$2.0m
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 LLC was 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

In February 2018 the in year project budget was increased by $2m to examine options to improve carrying capacity. As at 30 June 2018 this work had not commenced and none of these funds had been expended. The work will now be undertaken in FY18/19.

Project Financial Assurance Statement

As at 30 June 2018, 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 not yet rescheduled the incomplete LHD/LLC interface trials of May 2016, for carriage of heavy loads,. 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.

148 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 testing, rescheduled for quarter 2 2018, did not occur and has not yet been rescheduled.

Other Current Sub-Projects

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 18	Exchange Variation		8.6	
Jun 18	**Total Budget**		236.7	
	Project Expenditure			
Prior to Jul 17	Contract Expenditure – Navantia	(150.3)		
	Other Contract Payments / Internal Expenses	(26.0)		5
			(176.3)	
FY to Jun 18	Contract Expenditure – Navantia	0.0		
	Other Contract Payments / Internal Expenses	0.0		
			0.0	
FY to Jun 18	**Total Expenditure**		(176.3)	
Jun 18	**Remaining Budget**		60.4	

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.

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).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
0.0	0.0	2.0	PBS–PAES: Nil variation. PAES–Final Plan: Variance is due to requirement to conduct studies and works to improve the vehicle carrying functionality and platform fatigue life.
Variance $m	0.0	2.0	Total Variance ($m): 2.0
Variance %	0.0	100.0	Total Variance (%):100.0

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(2.0)	Australian Industry	The in year project budget was increased by $2m to examine options to improve carrying capacity. As at 30 June 2018 this work had not commenced and none of these funds had been expended.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
2.0	0.0	(2.0)	Total Variance	
		(100.0)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 18 $m	Type (Price Basis)	Form of Contract	Notes
Navantia	Dec 11	148.9	150.3m	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 18 is based on actual expenditure to 30 June 18 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 18	Scope	Notes
Navantia	12	12	LHD Landing Craft and Support System	

Major equipment received and quantities to 30 Jun 18

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

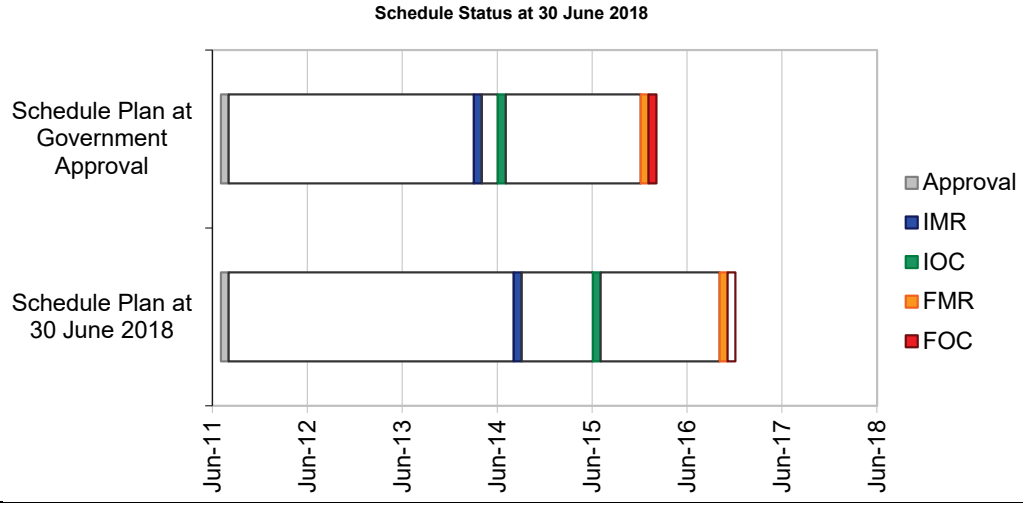
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LLC 01-04	Feb 14	N/A	Feb 14	0	1
	LLC 05-08	Dec 14	N/A	Dec 14	0	1
	LLC 09-12	Oct 15	N/A	Aug 15	(2)	1
Acceptance	LLC 01-04 Project Acceptance	Apr 14	N/A	Apr 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	TBA	-	4

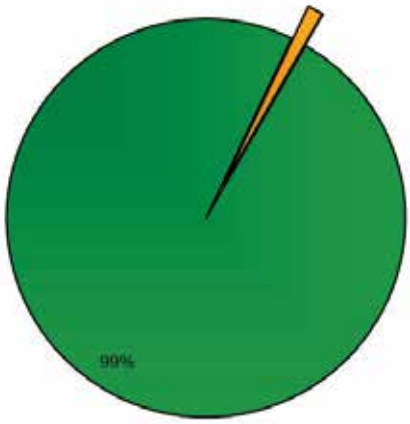
Notes	
1	IMR was submitted on 20 June 2014 and was accepted by Navy on 10 October 2014 following the review of Initial Operational Release (IOR) documentation. This has had a flow on effect to activities, including IOC.
2	Lessons learnt from IMR indicated that the MR2 schedule was too optimistic and 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 ~~has been~~ being deferred. The testing is expected to be rescheduled which will allow FOC to be forecast.**



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 Performance	
	**Green:** The designs' operational envelope has been certified by a Classification Society and the Contractor's acceptance test activities have been completed which has proven the Materiel Capability Performance. Navy **planning** to complete the LHD/LLC interface trials **is ongoing and will** support achievement of Final Operational Capability. An IFF capability for the LLC is not in the scope of JP2048 Phase 3 and will be addressed as part of Project SEA 2048 Phase 6 with funding being transferred from JP 2048 Phase 3 to SEA 2048 Phase 6 when the latter becomes an 'approved project'. In the interim the LLC will be accepted by Navy without the IFF capability noting that the vessels are fitted with the Army Battle Management System (BMS) and Automatic Identification System (AIS) which will provide situational awareness for the vessels. **Amber:** The **testing of heavy loads** in May 2016 was not completed as planned for safety reasons. **Navy Operational Testing is expected to be rescheduled.** **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)	• 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
Final Materiel Release (FMR)	• 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

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 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
Project Closure will not be achieved as forecast due to a delay in achievement of FOC leading to an impact on schedule.	Work with Navy to **complete Operational Testing.** Supply Contractor documentation such as Acceptance Test Reports (ATRs) of the LLC trials conducted in Spain; and

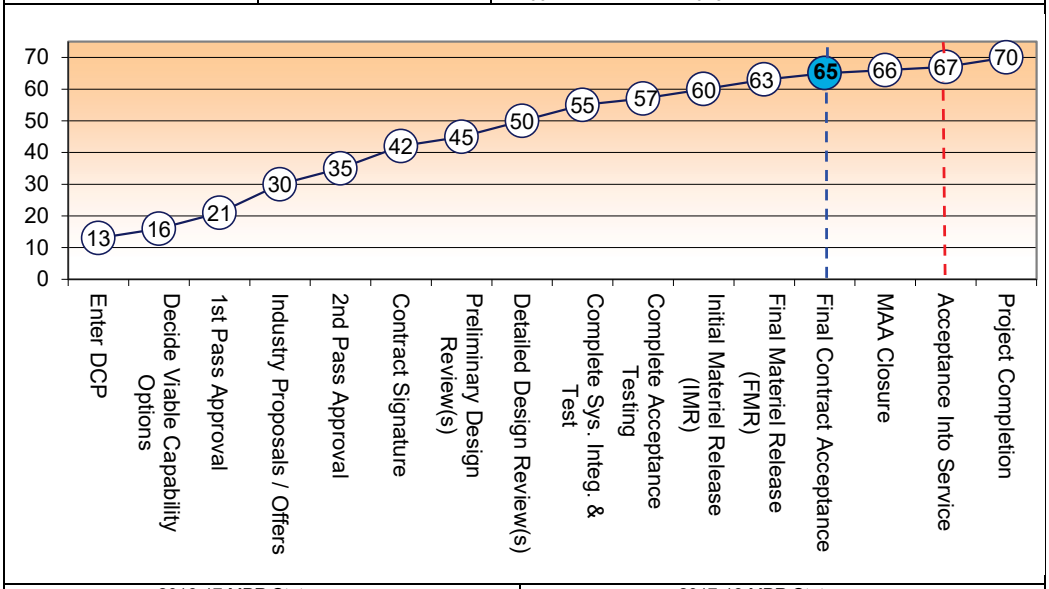
	Reschedule the incomplete LHD/LLC interface trials of May 2016 for carriage of heavy loads. The trial is yet to be rescheduled Completion of the trial will support Navy's decision on Final Operational Capability (FOC).

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

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	9	10	9	9	9	9	65
Final Contract Acceptance	Project Status	10	9	9	10	10	10	9	67
	Explanation	• **Requirement:** Operational Testing of heavy loads is yet to be declared complete by Navy. • **Technical Understanding:** Defence fully understands the solution and has the means necessary to operate, support and to make necessary modifications to meet changing operational needs. • **Technical Difficulty:** Operational Test and Evaluation has confirmed the suitability of the design for its intended use. • **Commercial**: All craft delivered and Prime Contract Final Acceptance achieved. Project acceptance of LLC 01-04 achieved in April 2014, LLC 05-08 in February 2015 and LLC 09-12 in November 2015.						



2016-17 MPR Status - - - - | 2017-18 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 in 2017-18

Position	Name
Division Head	**RADM Adam Grunsell**
Branch Head	**CDRE Steven Tiffen (Jul 17 – Jun 18)** **CDRE Robert Elliott (Jun 18 – current)**
Project Director	**Mr Terrence Stamp**
Project Manager	**Ms Donna Tobias (Jul – Nov 17)** **Vacant (Nov 17 – Mar 18)** **Mr Thomas Egan (Mar 18 – current)**

Part 4. JCPAA 2017–18 Major Projects Report Guidelines

Australian Government
Department of Defence

Australian National Audit Office

2017–18 Major Projects Report Guidelines

Endorsed by the Joint Committee of Public Accounts and Audit

September 2017

Contents

Introduction

1.1 The Defence Major Projects Report (Defence MPR) will form part of the Australian National Audit Office's (ANAO) 2017–18 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 2017–18 MPR will report on 26 projects as endorsed by the JCPAA. Since its inception, the number of projects included in the MPR 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		

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 that nothing 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:

(a) provide the criteria for project selection and the list of projects for inclusion in the 2017–18 MPR;

(b) outline the roles and responsibilities of Defence in the production and quality assurance of Defence's 2017–18 MPR[3];

(c) provide requirements for the preparation of the PDSSs;

(d) provide the PDSS template; and

(e) provide an indicative program schedule in support of a November 2018 tabling.

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1 The ANAO's 2017–18 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.

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.

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 Approval[4];

(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 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

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 2017–18 MPR will have been approved under the two-pass approval process.

5 MAAs are being phased out gradually by Product Delivery Agreements (PDAs). Projects in the 2017–18 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, April 2016,* Annex A, Definitions, p. 91.

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 and is developed in accordance with the exact parameters agreed by government. Department of Defence, *Interim Capability Life Cycle Manual*, April 2016, Annex A, p. 92. 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.

(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]

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.

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/dmo/aboutcasg/> [accessed 31 August 2017].

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.

2017–18 Project Selection

1.13 The following table reflects projects included in the 2017–18 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 2017–18 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
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	Replacement Replenishment Ships [1]
JP 2072 Phase 2B	Battlespace Communications System Phase 2B	Battle Comm. Sys. (Land) 2B [1]
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT
AIR 5431 Phase 3	Civil Military Air Management System	CMATS
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	PPB-R [1]
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 1439 Phase 4A	Collins Replacement Combat System	Collins RCS
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo
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 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2A
LAND 75 Phase 4	Battle Management System	BMS
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft

Note 1: SEA 1654 Phase 3 Maritime Operational Support Capability (Replacement Replenishment Ships), JP 2072 Phase 2B Battlespace Communications System Phase 2B (Battle Comm. Sys. (Land) 2B) and SEA 3036 Phase 1 Pacific Patrol Boat Replacement (PPB-R) are included in the MPR Program for the first time in 2017–18.

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.

9 The following projects were removed from the MPR program following achievement of FOC: AIR 87 Phase 2 Armed Reconnaissance Helicopter (April 2016); LAND 116 Phase 3 Bushmaster Vehicles (January 2017); LAND 121 Phase 3A Field Vehicles and Trailers (October 2016); and AIR 9000 Phase 5C Additional Medium Lift Helicopters (July 2017).

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.

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	Primary accountability for the completeness and accuracy of the Defence MPR. Sign off on the *Statement by the Secretary of Defence*, including Significant Events Occurring Post 30 June 2018.
Vice Chief of the Defence Force	Joint Force Authority/Chair of the Investment Committee	Responsible for the design, integration and assurance of the future joint force in accordance with strategic and resource guidance. Supporting the Defence Committee by overseeing implementation and integrity of the Integrated Investment Program and monitoring Defence's performance in delivering it. 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	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	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	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.
Assistant Secretary Business Management	CASG accountability for the MPR	Liaison with ANAO senior management. Advice to Deputy Secretary CASG and Secretary. Guidance to the Director Program Approvals and Agreements. Clearance of the unclassified PDSS suite and Defence MPR.
Director Program Approvals and Agreements	MPR management, coordination and liaison	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	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	Responsibility for confirming the project's status, particularly progress toward the Initial Materiel Release (IMR), Initial Operational Capability (IOC), FMR and FOC milestones. 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 Assistant Secretary Business Management.

1.18 An indicative schedule for the MPR program has been established (refer to page 424). 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 418).

(b) For repeat projects, changes from prior years are to be depicted in bold 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 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.
	Project Name	The name of the project as approved by government.
	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: • New; • Replacement; or • Upgrade.
	Acquisition Type	One of the following: • MOTS (Military-Off-The-Shelf); • Australianised MOTS; or • Developmental.
	Capability Manager	Either one or a combination of: • Chief of Navy; • Chief of Army; • Chief of Air Force; • 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.
	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.
	2017–18 Budget	The estimated project expenditure for 2017–18 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.
	Complexity	The Acquisition Categorisation (ACAT) level of the project.

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
	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	<u>In-year</u> 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. This statement should agree to the In-year Budget/ Expenditure Variance explanation in Section 2.2B. Note: For the pre 30 June PDSS, projects should use the part-year result. <u>Project Financial Assurance Statement</u> 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. <u>Contingency Statement</u> State whether the project has/has not applied contingency funds this financial year. Note that disclosure of contingency amounts is not required. Standard text: [positive case]: The project has applied contingency in the financial year primarily for the treatment of [a risk category[11]] risk [and where possible include linkage to Section 5 – Major Risks and Issues and specified remediation activities]; or [negative case]: The project has not applied contingency in the financial year. This section must be consistent with the data in Section 2 – Financial Performance.
	Schedule Performance	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. This section must be consistent with what is stated in Section 3 – Schedule Performance.
	Materiel Capability Delivery Performance	At a strategic level, provide a brief update on the materiel capability delivered to date, and expected future delivery.

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
		Detailed technical performance of systems is to be avoided and classified information is not to be disclosed. This section must be consistent with what is stated in Section 4 – Materiel Capability Delivery Performance.
Section 1.3 Project Context	Background	A succinct summary level statement that covers Government approvals history and any strategic changes that have occurred since approval. 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] Note: Stop payments or liquidated damages should be referred to here or elsewhere in Section 1 (disclosure of amounts is not required).
	Uniqueness	A brief explanation of the particular aspects that make the project unique.
	Major Risks and Issues	A succinct summary of the major risks and issues disclosed in Section 5 – Major Risks and Issues. In addition, where the project has achieved a milestone with caveats, a brief description of the caveats should be added.
	Other Current Sub-Projects	List the current approved projects (i.e. Second Pass has been achieved) relating to the same platform, 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	The approved estimated cost for the project element at Government Approval.
	Real Variation	The variations to be included are shown below where they are applicable to the project: **"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 changes to services to be provided which are accompanied by a corresponding budget adjustment. 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.

12 JCPAA, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, p. 25.

Heading	Data	Definition/Description
		"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. **"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. **"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. **"Real Cost Decreases"** attributed to any negotiated FMS or commercial contracts. These funds have been handed back to the Defence Portfolio. The elements above are to be subtotalled to give a single amount for all real variations (including Government Second Pass Approvals).
	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	The sum of the above. This should agree to the Project Header. Note: For the pre 30 June PDSS, this amount and its components noted above should reconcile to the current BORIS Project Approvals extract.
	Notes	For additional information as required, e.g. explanation for the reason for each Real Variation.
	Project Expenditure	
	Prior to Jul 17	This item comprises all amounts incurred in all periods prior to the current reporting period (i.e. expenditure up to 30 June 2017). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: **"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.

Heading	Data	Definition/Description
		"Other Contract Payments / Internal Expenses" which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. 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%. The two expenditure elements above are to be subtotalled to give a single amount for all prior period expenditure.
	FY to Jun 18	This item comprises all amounts incurred in the current reporting period (i.e. contract level expenditure from 1 July 2017 to 30 June 2018). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: **"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. **"Other Contract Payments / Internal Expenses"** which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. 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%. The two expenditure elements above are to be subtotalled to give a single amount for Financial Year (FY) expenditure. Note: For the pre 30 June PDSS, this amount should reconcile to the year to date expenditure in ROMAN and agree to the Actual in Section 2.2B In-year Budget/Expenditure Variance. In addition, any stop payments or liquidated damages should be referred to in the Notes (disclosure of amounts is not required).
	Total Expenditure	This item discloses total project expenditure as at the reporting date (i.e. 30 June 2018) 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. Note: For the pre 30 June PDSS, this amount should reconcile to the life to date expenditure in ROMAN.

Heading	Data	Definition/Description
	Remaining Budget	The subtraction of total expenditure from total budget, thus showing the unspent portion of the approved budget, as at 30 June.
	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 2017–18, as published in the PBS.
	Estimate PAES $m	The mid-year revised budget estimate for 2017–18, 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 2017–18. The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PAES. This amount should agree to the 2017–18 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 2017–18. 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 BORIS and the End of Financial Year Actual Expenditure. This amount should agree to the 2017–18 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. 2017–18). This amount should agree to the FY to Jun 18 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 ROMAN).
	Variance $m	Budget expenditure variances are to be disaggregated and disclosed separately as per the variance factors described below.

Heading	Data	Definition/Description
		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.
	Variance Factor	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: • Australian Industry; • Foreign Industry; • Early Processes; • Defence Processes; • Foreign Government Negotiations/Payments; • Cost Saving; • Effort in Support of Operations; and • Additional Government Approvals.
	Explanation	Explanations must address all of the variance factors noted above, where relevant. Material changes following the publication of the PAES may require an explanation. This explanation should agree to the In-year Cost Performance statement in Section 1.2.
Section 2.3 Details of Project Major Contracts	Contractor[13]	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). The top five contracts listed should agree to the contracts listed in Section 2.1 Project Budget (out-turned) and Expenditure History.
	Signature Date	The date the contract was signed.
	Price at Signature $m and 30 Jun 18 $m	Signature $m The value of the contract at signature. 30 Jun 18 $m The value of the contract at 30 June 2018 (i.e. value spent as per Section 2.1 Project Budget (out-turned) and Expenditure History plus remaining commitment as at the spot exchange rate as recorded in BORIS at 30 June 2018). Note: For the pre 30 June PDSS, projects should use the life to date expenditure per Section 2.1 plus remaining commitment in ROMAN as above.
	Type (Price Basis)	Choices for this include: • Firm (or Fixed); • Variable; • Cost Ceiling (capped); or

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
		• Reimbursement (for FMS). For further information including definitions refer to the Defence Procurement Policy Manual.
	Form of Contract	This refers to the contract template used, e.g. DEFPUR 101, ASDEFCON (Strategic, Complex). 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 18	The quantity of major equipment under contract as at the date the contract was signed and also as at 30 June 2018. 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 18	Detail the major equipment and quantities the project has received to 30 June 2018.
	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: • 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	Achieved: The date the event was achieved , or Forecast: The expected date for achievement.
	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: • 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	Achieved: The date the event was achieved; or Forecast: The expected date for achievement.
	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	Achieved: The date the event was achieved; or Forecast: The expected date for achievement.
	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.
Schedule Status at 30 June 2018	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.

Heading	Data	Definition/Description
SECTION 4 – MATERIEL CAPABILITY DELIVERY PERFORMANCE		
Section 4.1 Measures of Materiel Capability Delivery Performance	Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	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 2018. The pie chart analysis/narrative (Green, Amber and Red) is to be provided at the strategic level, including: • Issues impacting the achievement of Materiel Release Milestones and Completion Criteria; and • Remedial activity to recover performance. Where there is no data insert 'N/A'. Detailed technical performance of systems is to be avoided, and classified information is not to be disclosed. Where the project has not yet achieved IMR, the statement against the Green traffic light should be written in future tense, i.e. *"The project expects to meet capability requirements as expressed in the Materiel Acquisition Agreement…"*, as opposed to *"The project is currently meeting…"*. 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.
Section 4.2 Constitution of Initial Materiel Release and Final Materiel Release	Item	Represented at a whole of capability level, i.e. IMR and FMR.
	Explanation	A top level description of the capability elements which constitute IMR and FMR as stipulated in the MAA, at 30 June 2018, including an indication of whether or not these milestones have been achieved. If the milestone has not been met, include a statement to indicate when the IMR or FMR milestone is expected to be achieved. Note: Where the project has achieved a milestone with caveats, a brief description of the caveats should be added.
	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)	Description: A major project risk is one that is rated high or extreme pre-mitigation. Remedial Action: 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. Note: All high and extreme risks require disclosure (and may be aggregated). In addition, a mapping of all risks from project risk logs to the PDSS is required.
	Emergent Risks (risk not previously identified but has	Description: A major project risk that was not previously identified in the risk log but has emerged this year, rated

Heading	Data	Definition/Description
	emerged during 2017–18)	as high or extreme pre-mitigation. This includes project risks previously rated medium or low pre-mitigation. Remedial Action: The risk mitigation/treatment proposed for the risk identified (these must be actionable measures). The risk becomes an Identified Risk in the subsequent MPR. Note: All high and extreme emergent risks require disclosure (and may be aggregated). In addition, a mapping of all emergent risks from project risk logs to the PDSS is required.
Section 5.2 Major Project Issues	Description	Issues are high or extreme risks that have been realised or issues that have arisen that require management action to address. Note: All high and extreme issues require disclosure. In addition, a mapping of all issues from project issues logs to the PDSS is required. 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.
	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 2018 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.
	Graph	The Defence MPR team will use the prior and current year 'Project Status' scores, to produce the graph.

14 Refer to the Department of Defence, Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates,* September 2010, for guidance.

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	Select from the following 'Systemic Lessons'[15] categories where they are applicable to the project: • 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 in 2017–18	Position and names of the Project's Line Management	List the names of the senior management team as appropriate to the project. This should include: • Division Head or Program Manager; • Branch Head; • Project Director; and • Project Manager. This list will contain those persons who occupied their respective position during the course of 2017–18, and applicable dates of change, for example: CMDR {First Name} {Last Name} (to Jan 18) Mr {First Name} {Last Name} (Acting Feb 18–Apr 18) Ms {First Name} {Last Name} (May 18–current) Where the Project Director and Project Manager are the same, combine as 'Project Director/Manager'.

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 Template[16]

Project Number	
Project Name	
First Year Reported in the MPR	
Capability Type	
Acquisition Type	
Capability Manager	
Government 1st Pass Approval	
Government 2nd Pass Approval	
Total Approved Budget (Current)	
2017–18 Budget	
Project Stage	
Complexity	

Project Image.

Section 1 – Project Summary

1.1 Project Description

1.2 Current Status

Cost Performance In-year Project Financial Assurance Statement Contingency Statement
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 Sub-Projects
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

[Presentation for Projects who received Government approval PRE-JULY 2010]:

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m	Notes
	Project Budget		
	Original Approved		
	Real Variation – Scope		
	Real Variation – Transfer		
	Real Variation – Budgetary Adjustment		
	Real Variation – Real Cost Increase / Decrease		
Jul 10	Price Indexation*		
Jun 18	Exchange Variation		
Jun 18	**Total Budget**		
	Project Expenditure		
Prior to Jul 17	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 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		
Jun 18	**Total Expenditure**		
Jun 18	**Remaining Budget**		

Notes	
1	
2	
3	
4	

*Note – Those projects approved in 'out- turned' dollars will not contain an entry for 'Price Indexation'.

[Presentation for Projects who received Government approval POST-JULY 2010]:

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m	Notes
	Project Budget		
	Original Approved		
	Real Variation – Scope		
	Real Variation – Transfer		
	Real Variation – Budgetary Adjustment		
	Real Variation – Real Cost Increase / Decrease		
Jun 18	Exchange Variation		
Jun 18	**Total Budget**		
	Project Expenditure		
Prior to Jul 17	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 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		
Jun 18	**Total Expenditure**		
Jun 18	**Remaining Budget**		

Notes	
1	
2	
3	
4	

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 18 $m			
Contractor 1						
Contractor 2						
Contractor 3						
Contractor 4						
Contractor 5						

Notes	
1	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 18		
Contractor 1				
Contractor 2				
Contractor 3				
Contractor 4				
Contractor 5				

Major equipment received and quantities to 30 Jun 18

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	

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	

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	

Schedule Status at 30 June 2018

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)		
Final Materiel Release (FMR)		

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 2017–18)	
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							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
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 in 2017–18

Position	Name
Division Head	
Branch Head	
Project Director	
Project Manager	

Indicative 2017–18 MPR Program Schedule

Event	Start Date	End Date
Planning for the 2017–18 MPR (including review of outcomes of the 2016–17 program)	Dec 17	Jan 18
Defence and ANAO finalise preparations for the 2017–18 MPR program in time for the JCPAA Hearing	Jan 18	Mar 18
Defence MPR provide program advice to the project offices	Feb 18	Feb 18
Defence MPR management finalise preparation with the project offices	Feb 18	Feb 18
Project site visits conducted by the ANAO	Mar 18	Jun 18
End Of Financial Year advice to project offices	Jul 18	Jul 18
Post 30 June PDSS reviews	Jul 18	Sep 18
ANAO submits 2018–19 MPR Guidelines and Project Selection to the JCPAA	Aug 18	Aug 18
Development of the Defence 2017–18 MPR	Aug 18	Oct 18
ANAO develops its Assurance, Review and Analysis for provision to the Secretary	Aug 18	Oct 18
Defence provides advice to the ANAO regarding the security classification of the aggregated PDSS suite	Oct 18	Oct 18
Secretary submits formal draft Defence section of the 2017–18 MPR to the Auditor-General	Oct 18	Oct 18
Defence response to the ANAO Assurance, Review and Analysis for provision to the Auditor-General	Oct 18	Oct 18
ANAO response to the Defence 2017–18 MPR to Defence	Oct 18	Oct 18
ANAO internal clearance of the 2017–18 MPR (Publication and Tabling)	November 2018	