The Auditor-General
ANAO Report No.26 2017–18

2016–17 Major Projects Report

Department of Defence

Australian National Audit Office

ISSN 1036–7632 (Print)
ISSN 2203–0352 (Online)
ISBN 978-1-76033-324-9 (Print)
ISBN 978-1-76033-325-6 (Online)

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

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

Or via email:
communication@anao.gov.au.

Australian National Audit Office

Canberra ACT

23 January 2018

Dear Mr President
Dear Mr Speaker

The Australian National Audit Office has undertaken a review of the status of selected major Defence equipment acquisition projects, as at 30 June 2017, as presented by the Department of Defence. The review was conducted in accordance with the authority contained in the *Auditor-General Act 1997*. Pursuant to Senate Standing Order 166 relating to the presentation of documents when the Senate is not sitting, I present the report of this review, titled the *2016–17 Major Projects Report*, to the Parliament.

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

Yours sincerely

Grant Hehir
Auditor-General

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

AUDITING FOR AUSTRALIA

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

For further information contact:
Australian National Audit Office
GPO Box 707
Canberra ACT 2601

Phone: (02) 6203 7300
Fax: (02) 6203 7777
Email: ag1@anao.gov.au

ANAO audit reports and information about the ANAO are available on our website:
http://www.anao.gov.au

Assurance Review Team

Michelle Page	Tony Steele
Dr Carolyn Cuello	Ben Watson
Philip Rebula	Catherine Heales
Sara Casey	Akshath Kale

Contents

Australian National Audit Office

Department of Defence

Project Data Summary Sheets

2016–17 Major Projects Report Guidelines

Part 1. ANAO Review and Analysis

Part 1. ANAO Review and Analysis

Summary and Review Conclusion

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 27 of Defence's Major Projects in this tenth annual report (2015–16: 26). The objective of the report is '...to improve the accountability and transparency of Defence acquisitions for the benefit of Parliament and other stakeholders.'[1]

3. The Capability Acquisition and Sustainment Group (CASG) within the Department of Defence (Defence), manages the process of bringing new capabilities into service.[2] In 2016–17 CASG provided support to the Australian Defence Force (ADF) through the acquisition and sustainment of required military equipment and supplies[3], and expended some $6.2 billion on major and minor capital acquisition projects.[4]

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. More recently, the 2017–18 Defence Portfolio Budget Statements indicated that the Defence budget would total approximately $200 billion over the coming decade, for investing in Defence capability.[5] Additionally, the Government commenced its $89 billion investment in Australia's future shipbuilding industry in April 2017.[6]

Major Projects selected for review

5. Major Projects are selected for review based on the criteria included in the *2016–17 Major Projects Report (MPR) Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit (JCPAA).[7] They represent a selection of the most significant Major Projects managed by Defence.

---

1 Joint Committee of Public Accounts and Audit, Report 468, *Defence Major Projects Report (2015–16)*, October 2017, Executive Summary, p. 1.

2 Defence describes CASG's role as 'purchases and maintains military equipment and supplies in the quantities and to the service levels that are required by Defence and approved by the Government'. Department of Defence, *About CASG*, available from < http://www.defence.gov.au/casg/AboutCASG/> [accessed 18 October 2017].

3 Department of Defence, *Defence Annual Report 16–17, Chapter 3, Annual Performance Statements*, p. 33.

4 ibid., Chapter 11, Financial Statements, p. 180.

5 Department of Defence, *Defence Portfolio Budget Statements 2017–18*, May 2017, p. 5.

6 The Minister for Defence Industry, the Hon. Christopher Pyne MP, *Historic milestone for Australia's shipbuilding program*, 26 April 2017. A performance audit to assess the effectiveness to date of Defence's planning for the mobilisation of its continuous shipbuilding programs in Australia, is expected to be tabled in 2018.

7 The *2016–17 Major Projects Report Guidelines* were endorsed by the JCPAA in November 2016 and are included in **Part 4** of this report.

6. The total approved budget for the Major Projects included in this report is approximately $62.0 billion, covering nearly 59 per cent of the budget within the Approved Major Capital Investment Program of $105.9 billion.[8] The selected projects and their approved budgets are listed in Table 1, below.

Table 1: 2016–17 MPR projects and approved budgets at 30 June 2017[1, 2]

Project Number (Defence Capability Plan)	Project Name (on Defence advice)	Defence Abbreviation (on Defence advice)	Approved Budget $m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter	16 004.9
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships	9 090.1
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System	P-8A Poseidon	5 262.5
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	3 733.8
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	3 495.0
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk	3 462.5
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	3 363.5
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships	3 091.9
LAND 121 Phase 4	Protected Mobility Vehicle – Light	Hawkei[3]	1 951.1
AIR 87 Phase 2	Armed Reconnaissance Helicopter	ARH Tiger Helicopters	1 867.8
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	1 406.7
LAND 116 Phase 3	Bushmaster Protected Mobility Vehicle	Bushmaster Vehicles	1 250.6
LAND 121 Phase 3A	Field Vehicles and Trailers	Overlander Light	1 017.6
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	855.5
AIR 5431 Phase 3	Civil Military Air Traffic Management System	CMATS [3]	730.7
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B	678.6
AIR 9000 Phase 5C	Additional Medium Lift Helicopters	Additional Chinook	637.8
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS	474.2
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land)	463.3
SEA 1439 Phase 4A	Collins Replacement Combat System	Collins RCS	450.4
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	432.1
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo	428.0
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	420.5
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	411.7
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2A	386.7
LAND 75 Phase 4	Battle Management System	BMS	369.1
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	236.8
Total 27	**—**	**—**	**61 973.4**

8 Based on information provided to the ANAO by the Directorate of Capital Investment Program, Department of Defence.

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: Air to Air Refuelling Capability was removed from the MPR program in 2016–17.
Note 3: Hawkei and CMATS are included in the MPR program for the first time in 2016–17.
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[9], in a sufficiently timely manner to facilitate the review. This has been an area of focus of the JCPAA over a number of years[10], 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—although this 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 section 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 27 projects.

9 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.

10 JCPAA Report 468, *Defence Major Projects Report (2015–16)*, October 2017, Recommendation 1, p. vii.

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

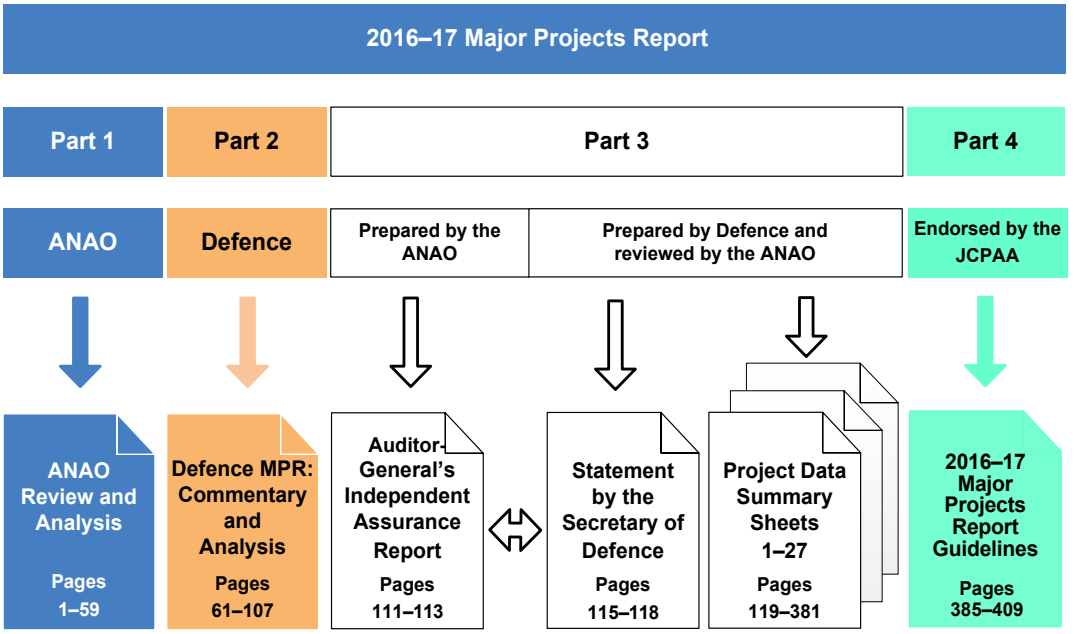
Report structure

14. The report is organised into four parts:

- **Part 1** comprises the ANAO's review and analysis (pp. 1–59);
- **Part 2** comprises Defence's Commentary, Analysis and Appendices (not included within the scope of the *Independent Assurance Report* by the Auditor-General) (pp. 61–107);
- **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. 109–381); and
- **Part 4** reproduces the 2016–17 MPR Guidelines endorsed by the JCPAA, which provide the criteria for the compilation of the PDSSs by Defence and the ANAO's review (pp. 383–409).

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

Figure 1: 2016–17 Report structure



Note: To assist in conducting inter-report analysis, the presentation of data in the PDSSs remains largely consistent and comparable with the 2015–16 MPR.

Project Data Summary Sheets

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

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; 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 2017);
- 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)[11], Initial Operational Capability (IOC) and Final Operational Capability (FOC)[12];
- 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[13], and a comparison against the benchmark score;
- Section 7—Lessons Learned: outlines the key lessons that have been learned at the project level (further information on lessons learned by Defence are included in Defence's Appendix 2); and
- Section 8—Project Line Management: details current project management responsibilities within Defence.

11 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 Instructions (General), DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, November 2012, Annex B, pp. B2–B3.

12 IOC and FOC are the points when the first or final subset of a capability system that can be operationally employed is realised. They are capability states endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager. See Department of Defence, Defence Instructions (General), DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, November 2012, Annex B, pp. B2–B3.

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

Overall outcomes

Statement by the Secretary of Defence

17. The *Statement by the Secretary of Defence* was signed on 3 January 2018. The Secretary's statement provides his opinion that the PDSSs for the 27 selected projects '… comply in all material respects with the Guidelines and reflect the status of the projects as at 30 June 2017'.

18. The Secretary also 'acknowledge[s] the difference of view between Defence and the ANAO in relation to the AIR 87 Phase 2 – Armed Reconnaissance Helicopter PDSS'. Further detail is provided in paragraphs 20 to 25 below (see Conclusion by the Auditor-General).

19. In addition, the *Statement by the Secretary of Defence* details significant events occurring post 30 June 2017, 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, MRH90 Helicopters, Hawkei, ARH Tiger Helicopters, Battlefield Airlifter, Overlander Light, Additional MRTT, CMATS, ANZAC ASMD 2B, Additional Chinook, HATS, Battle Comm. Sys. (Land), Maritime Comms, Hw Torpedo, Collins R&S, ANZAC ASMD 2A and BMS.

Conclusion by the Auditor-General

20. The Auditor-General has been 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 one Project Data Summary Sheet (PDSS).

21. The review Guidelines define a project as the acquisition or upgrade of Specialist Military Equipment. The Guidelines provide that the scope of Defence reporting includes the performance of selected major equipment acquisitions and associated sustainment activities, where applicable.

22. The ARH Tiger Helicopters PDSS has been prepared on the basis of the Defence acquisition project[14], which is narrower than the scope established in the Guidelines.

- The project maturity score in Section 6.1 of the ARH Tiger Helicopters PDSS reports a total of 69 out of a maximum of 70 (98.6 per cent) at the time of transition from acquisition to sustainment in April 2017. Noting the caveats, capability deficiencies and obsolescence issues at the declaration of FOC in April 2016[15, 16], and considering that only two of the nine caveats applying at FOC have been lifted by the Capability Manager (in July 2017), this score does not accurately or completely represent the project's maturity as at 30 June 2017. The Auditor-General's conclusion has had regard to the July 2017 events.

14 An acquisition project can be closed at Defence's discretion.

15 The caveats, capability deficiencies and obsolescence issues were discussed in ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, pp. 25–33 and pp. 50–53.

16 Defence has advised that where FOC is declared with caveats, the Capability Manager will have considered other Defence capabilities that can substitute while the caveats are resolved, and the Capability Manager will have considered the capability risk acceptable.

23. In addition, a material inconsistency has been identified in the forecast information. Section 4.1 in the ARH Tiger Helicopters PDSS reports that materiel capability delivery performance is at 100 per cent, indicating that materiel capability delivery performance has been met. Rate of effort continues to be lower than planned[17], and expert analysis commissioned by Defence in April 2016 indicates that the program will remain incapable of fully meeting expectations relating to reliability, availability, maintainability and rate of effort.[18]

24. The Auditor-General also drew attention to these matters in the *Independent Assurance Report* for 2015–16.[19]

25. With the exception of the matters above, the Auditor-General has concluded in the *Independent Assurance Report* for 2016–17 that '…nothing has come to my attention that causes me to believe that the information in the 27 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 *2016–17 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.'

26. Additionally, in 2016–17, a number of administrative issues were observed 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 1.36 to 1.40;
- a change to the basis of financial reporting and the application of incorrect exchange rates when managing contracts (Section 2 of the PDSS). See further explanation in paragraphs 1.41 to 1.43 and paragraph 2.25;
- a lack of oversight, non-compliance with corporate guidance and the use of spreadsheets[20] in the management of risks and issues (Section 5 of the PDSS). See further explanation in paragraphs 1.44 to 1.50;
- outdated policy guidance for the project maturity framework[21] (Section 6 of the PDSS). See further explanation in paragraphs 1.51 to 1.57; and
- an increase in the number of MPR projects which have achieved significant milestones with caveats. See further explanation in paragraphs 1.58 to 1.60.

17 This shortfall in rate of effort has been reflected in the impairment of the value of this asset in Defence's 2016–17 financial statements.

18 Department of Defence, *Houston Review into Army Aviation*, April 2016.

19 The Auditor-General was unable to provide an unqualified *Independent Assurance Report* 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 two PDSSs, including the PDSS for the ARH Tiger Helicopters. See ANAO Report No.40 of 2016–17, *2015–16 Major Projects Report*, paragraphs 20–23 and pp. 129–131.

20 Spreadsheets lack formalised change/version control and reporting, increasing the risk of error. See paragraph 1.49 for further detail.

21 Refer to footnote 13.

ANAO's analysis of project performance

27. As discussed, the ANAO has undertaken an analysis of key elements of the Defence PDSSs—including cost, schedule, progress towards delivery of required capability, project maturity, risks and issues, and in particular, longitudinal analysis across these key elements of projects. Table 2, below, 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.

Table 2: Summary longitudinal analysis

	2014–15 MPR	2015–16 MPR	2016–17 MPR
Number of Projects	25	26	27
Total Approved Budget	$60.5 billion	$62.7 billion	$62.0 billion
Total Expenditure Against Total Approved Budget	$29.0 billion (48.0 per cent)	$29.4 billion (46.9 per cent)	$32.1 billion (51.7 per cent)
Total In-year Expenditure Against In-year Budget	$4.8 billion (96.8 per cent)	$3.9 billion (91.2 per cent)	$4.1 billion (96.6 per cent)
Total Budget Variation since Second Pass Approval	$18.5 billion (30.6 per cent)	$22.8 billion (36.3 per cent)	$21.5 billion (34.7 per cent)
In-year Approved Budget Variation	$2.9 billion (4.9 per cent)	$4.9 billion (7.8 per cent)	-$1.6 billion (-2.6 per cent)
Total Schedule Slippage [1, 2]	768 months (28 per cent)	708 months (26 per cent)	793 months (29 per cent)
Average Schedule Slippage per Project	31 months	28 months	30 months
In-year Schedule Slippage [3]	41 months (2 per cent)	42 months (1 per cent)	149 months (6 per cent)
Total Project Maturity [4]	1 401 / 1 750 (80 per cent)	1 479 / 1 820 (81 per cent)	1 531 / 1 890 (81 per cent)
Total Reported Risks and Issues [5, 6]	129	123	136
Expected Capability (Defence Reporting) • High level of confidence of delivery (Green)	97 per cent	99 per cent	98 per cent
• Under threat, considered manageable (Amber)	3 per cent	1 per cent	2 per cent
• Unlikely to be met (Red)	0 per cent	0 per cent [7]	0 per cent [7]

Refer to paragraphs 27 to 42 in **Part 1** of this report.

Note 1: The data for the 27 Major Projects in the 2016–17 MPR compares the data from projects in the 2015–16 MPR and 2014–15 MPR.

Note 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. However, Figure 10 reports in-year schedule reductions.

Note 3: Based on the 23 repeat projects from the 2013–14 MPR, 23 repeat projects from the 2014–15 MPR, 25 repeat projects from the 2015–16 MPR respectively, and one new project (CMATS) that had slippage in 2016–17.

Note 4: The figures represent the total of the reported maturity scores divided by the total benchmark maturity score, in the PDSSs across all projects.

Note 5: 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 6: 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 7: Defence has advised that Joint Strike Fighter will not deliver one element of capability at FOC (which equates to approximately one per cent). However, across all 27 Major Projects this percentage rounds to zero per cent.

Cost

28. 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 $62.0 billion, CMATS is seeking approval for a significant Real Cost Increase[22] which is anticipated to be considered by government in February 2018. In addition, ARH Tiger Helicopters was provided a heavily caveated Final Operational Capability (FOC) in April 2016 without having delivered all of the capabilities required as part of the acquisition project.[23] Delivery of outstanding requirements has been transferred from acquisition to sustainment management within CASG.

29. The approved budget for Major Projects included in this MPR has increased by $21.5 billion (34.7 per cent) since Second Pass Approval, as detailed in Table 3, below. However, as the MPR predominantly focusses on the approved capital budget, the ongoing costs of Project Offices (acquisition), training, replacement capability, etc., are not reported here.

Table 3: Budget variation post Second Pass Approval by variation type[1, 2]

Project	Variation	Explanation	Year	Amount $b
MRH90 Helicopters	Scope increase/budget transfers	34 additional aircraft	2005–06	2.4
Bushmaster Vehicles	Scope increases	715 additional vehicles	2007–08, 2011–12 and 2012–13	0.8
Joint Strike Fighter	Scope increase	58 additional aircraft	2013–14	10.5
Overlander Medium/Heavy	Scope increase/budget transfers	Real Cost Increase	2013–14	0.7
AWD Ships	Real Cost Increase/budget transfers	Real Cost Increase of $1.2b offset by $0.1b transfer for facilities in 2014	2013–14 and 2015–16	1.1
P-8A Poseidon	Scope increase	Four additional aircraft	2015–16	1.3
Other	Scope increase/budget transfers (net)	Other scope changes and transfers	Various	(2.4)
	Sub-total			14.4
	Price Indexation – materials and labour (net) (to July 2010) [2]			3.6
	Exchange Variation – foreign exchange (net) (to 30 June 2017)			3.5
	Total			**21.5**

Note 1: Variations greater than $500 million are included in this table. For the breakdown of in-year variation, refer to Table 10 of this report.

Note 2: 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 2016–17 PDSSs.

22 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.'

23 Defence has subsequently advised that the two caveats relating to the Electronic Warfare System and Identification, Friend or Foe have been remediated. Army is managing the remediation of the remaining seven caveats.

Schedule

30. Delivering Major Projects on schedule continues to present challenges for Defence[24]; affecting when the capability is made available for operational release and deployment by the Australian Defence Force, as well as the cost of delivery.[25]

31. The total schedule slippage[26] for the 27 selected Major Projects, as at 30 June 2017, is 793 months (2015–16: 708 months) when compared to the initial schedule. This represents a 29 per cent (2015–16: 26 per cent) increase since approval. Table 4 below includes details of in-year and total schedule slippage by project. While the table shows a six per cent in-year slippage for 2016–17, the removal of a completed project (Air to Air Refuel) has removed 64 months of slippage. The effect of this project exiting the review explains the difference between the total schedule slippage in 2016–17 (85 months) and the total in-year slippage amount (149 months).

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

Project	In-year (months)	Total (months)	Project	In-year (months)	Total (months)
Joint Strike Fighter [3]	0	2	CMATS [3]	28	28
AWD Ships	1	35	ANZAC ASMD 2B	0	57
P-8A Poseidon	24	24	Additional Chinook	6	6
MRH90 Helicopters	0	60	HATS	0	0
Growler	0	0	Battle Comm. Sys. (Land) [3]	9	17
MH-60R Seahawk	0	0	Collins RCS	0	109
Overlander Medium/Heavy	0	5	Maritime Comms	0	0
LHD Ships [3]	26	37	Hw Torpedo	0	63
Hawkei	0	0	UHF SATCOM [3]	9	9
ARH Tiger Helicopters [2]	0	82	Collins R&S	0	99
Battlefield Airlifter	0	24	ANZAC ASMD 2A	0	72
Bushmaster Vehicles	1	1	BMS [4]	N/A	N/A
Overlander Light	0	9	LHD Landing Craft	24	33
Additional MRTT	21	21			
			Total (months)	**149**	**793**
			Total (per cent)	**6**	**29**

Note 1: Refer to footnote 26.

Note 2: FOC for ARH Tiger Helicopters was declared with caveats. That is, not all capabilities required by government were delivered by the acquisition project.

Note 3: These projects have been identified by Defence as Projects of Interest (see paragraph 1.17 in **Part 1**).

24 See Defence's analysis on page 82 in **Part 2** of this report.

25 M Thomson, Australian Strategic Policy Institute, *Indexation, inflation and the cost of defence projects*, 25 June 2015, available from <http://www.aspistrategist.org.au/indexation-inflation-and-the-cost-of-defence-projects/> [accessed 20 October 2017].

26 As noted in Note 2 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). The ANAO will test the feasibility of such an approach in the context of the next MPR.

Note 4: 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 is expected to achieve FMR and MAA closure in quarter one 2018.

Source: ANAO analysis of the 2016–17 PDSSs.

32. 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, ARH Tiger Helicopters, CMATS and ANZAC ASMD 2B. Additionally, delays to operational test and evaluation activities have led to further delays to the LHD Ships and LHD Landing Craft projects.

33. Table 5, below, provides details of total schedule slippage by project, for projects that have exited the MPR. Compared to the 793 months total schedule slippage for the current 27 Major Projects, the 14 projects which have exited the MPR have reported accumulated schedule slippage of 601 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	HF Modernisation (Developmental)	147
Super Hornet (MOTS)	0	Armidales (Australianised MOTS)	45
Hornet Upgrade (Australianised MOTS)	39	SM-2 Missile (Australianised MOTS)	26
C-17 Heavy Airlift (MOTS)	0	155mm Howitzer (MOTS)	7
Air to Air Refuel (Developmental)	64	Stand Off Weapon (Australianised MOTS)	37
FFG Upgrade (Developmental)	132	Battle Comm. Sys. (Australianised MOTS)	24
Next Gen Satellite [1] (MOTS)	0	C-RAM (MOTS)	2
Total			**601**

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.

34. Additional ANAO analysis (refer to Figure 7, on page 46) has compared project slippage against the Defence classification of projects as Military Off-The-Shelf (MOTS), Australianised MOTS or developmental.[27] 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 project slippage, as well as demonstrating one of the advantages of selecting MOTS acquisitions.[28]

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

28 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*, October 2016, Annex 1A, Definitions, p. iii.

35. Figure 8 (on page 47) 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.[29]

36. 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 page 84 in **Part 2**).

Capability

37. 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.

38. 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 (2015–16: three) are MRH90 Helicopters, Battlefield Airlifter and LHD Landing Craft. One project office (Joint Strike Fighter) is currently unable to deliver all of the required capability by FOC.

39. 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 2017, as reported by Defence. Tables 6 and 7 below provide two worked examples of the ANAO's methodology, utilising the performance information provided in the relevant PDSS.

Table 6: Capability Delivery Progress assessment – CMATS

Capability elements as per Section 4.2 of the PDSS	No. of elements approved	No. of elements delivered at 30 June 2017	Comments
Transition of Amberley, East Sale, School of Air Traffic Control and Edinburgh from Australian Defence Air Traffic System (ADATS) to Civil Military Air Traffic Management System (CMATS).	4	0	No sites have been transitioned.
Transition of Oakey, Nowra, Tindal, Darwin, Townsville, Williamtown, Pearce, Richmond and Gin Gin from ADATS to CMATS.	9	0	No sites have been transitioned.
Total (number)	**13**	**0**	—
Total (per cent)	**100**	**0**	—

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

29 JCPAA Report 442, Review of the 2012–13 Defence Materiel Organisation Major Projects Report, May 2014, Recommendation 5, p. 31.

Table 7: Capability Delivery Progress assessment – Bushmaster Vehicles

Capability elements as per Section 4.2 of the PDSS	No. of elements approved	No. of elements delivered at 30 June 2017	Comments
Commencement of delivery of full rate production for Production Period 1 (PP1) vehicles.	1	1	All PP1 vehicles have been completed.
Completion of vehicle deliveries for all five production periods as detailed in Section 1.1.	1 015	1 015	All vehicles have been delivered.
Total (number)	**1 016**	**1 016**	—
Total (per cent)	**100**	**100**	—

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

40. Table 8 below, summarises expected capability delivery as at 30 June 2017—as reported by Defence and using the ANAO's Capability Delivery Progress measure.

Table 8: Capability delivery

Expected Capability (Defence Reporting)	2014–15 MPR (%)	2015–16 MPR (%)	2016–17 MPR (%)	Capability Delivery Progress (ANAO Analysis)	2016–17 MPR (%)	2016–17 MPR (%) Adjusted [3]
High Confidence (Green)	97	99	98	Delivered	70	52
Under Threat, considered manageable (Amber)	3	1	2	Not yet delivered	30	46
Unlikely (Red)	0	0 [1]	0 [1]	Not delivered at FOC [2]	0	2
Total	**100**	**100**	**100**	**Total**	**100**	**100**

Note 1: Defence has advised that Joint Strike Fighter will not deliver one element of capability at FOC, of a total of 79 elements required for the project (which equates to approximately one per cent). However, across all 27 Major Projects this percentage rounds to zero.

Note 2: In addition, ARH Tiger Helicopters had a small number of elements not delivered at FOC. However, as there is a total of 28 321 elements across all 27 Major Projects, these percentages round to zero.

Note 3: Excluding the six projects with the largest number of elements for delivery (i.e. Overlander Medium/Heavy, Hawkei, Bushmaster Vehicles, Overlander Light, Battle Comm. Sys. (Land), and BMS), results in an increase to the proportion of capability 'not yet delivered' to 46 per cent (from 30 per cent) and 'not delivered at FOC' to two per cent (from zero per cent). These six projects disproportionately weight the calculation of Capability Delivery Progress due to a large number of physical elements for delivery. These six projects represent 27 876 deliverables out of a total of 28 321 deliverables for all 27 Major Projects.

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

41. The ARH Tiger Helicopters platform was provided a caveated FOC and Defence faces ongoing risks and issues in relation to delivering the remaining capabilities.[30] It is also impacted by technological obsolescence, related to delays in delivery, which impact future use. The impact of these issues has not translated into Defence's assessment of future capability delivery performance, although they could reasonably be assumed to have a long term effect on capability. Refer to paragraphs 17 to 25 for further detail.

30 Refer to footnote 23.

42. 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, ARH Tiger Helicopters 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 27 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 section 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[31], 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 27 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 27 projects reviewed.

1.6 The review was conducted in accordance with the *ANAO Auditing Standards* at a cost to the ANAO of approximately $1.8 million.

31 Refer to footnote 9.

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, and the independent third-party assessment of the project financial assurance statements (commissioned by Defence);
- 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 (2015–16) qualified *Independent Assurance Report*, relating to the ARH Tiger Helicopter PDSS and the LHD Landing Craft PDSS[32];
- developments in acquisition governance (Chapter 1 in **Part 1**, below);
- the financial framework, particularly as it applies to the project financial assurance and contingency statements, and managing project budgets in the out-turned budget environment (Section 2 of the PDSSs);
- schedule management and test and evaluation processes (Section 3 of the PDSSs);

32 The Auditor-General was unable to provide an unqualified *Independent Assurance Report* for 2015–16 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 two PDSSs, for the ARH Tiger Helicopters and LHD Landing Craft. See ANAO Report No.40 of 2016–17, *2015–16 Major Projects Report*, paragraphs 20–23 and pp. 129–131.

- 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 review of the maturity of the Enterprise Risk Management Framework (currently undergoing reform), and the completeness and accuracy of major risk and issue data in order to pilot bringing risks and issues into the scope of the *Independent Assurance Report* in the 2018–19 MPR (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.

1.9 This review informed the ANAO's understanding of the systems and processes supporting the PDSSs for the 2016–17 review period. It also highlighted issues in those systems and processes that warrant attention.

Developments in acquisition governance

1.10 Consistent with previous years, key developments in acquisition governance processes are covered in the ANAO's review in order to inform the planning process. While some initiatives are mature, others require further progress prior to achieving their intended impact.

Independent Assurance Review Boards

1.11 First introduced in 2008, the Gate Review (acquisition) process[33] was designed to provide the Defence Senior Executive with assurance that all identified risks for a project are manageable, and that costs and schedule are likely to be under control prior to a project passing through the various stages of its life cycle. Gate Reviews were introduced for sustainment in 2013–14.

1.12 Since July 2016, Gate Reviews have been referred to as *Independent Assurance Reviews*[34], with corporate policies and procedures updated for the revised processes under the modified Capability Life Cycle. The process has also introduced a contestability function, to focus on project business cases prior to government approval. Sixteen of the projects included in this report had an Independent Assurance Review conducted during 2016–17[35], which formed key corroborative evidence for the ANAO's review.

33 ANAO Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, June 2012, paragraph 13, pp. 15–16, found that while Defence had improved the effectiveness of the program, there remained opportunities for further improvement and rigour.

34 These reviews are not carried out within frameworks issued by the Australian Auditing and Assurance Standards Board.

35 Independent Assurance Reviews were conducted for: P-8A Poseidon, MRH90 Helicopters, Growler, MH-60R Seahawk, Overlander Medium/Heavy, LHD Ships, ARH Tiger Helicopters, Battlefield Airlifter, Overlander Light, Additional MRTT, CMATS, Additional Chinook, HATS, Battle Comm. Sys. (Land), Maritime Comms, and LHD Landing Craft. Seven projects had reviews scheduled for late 2017. This includes an Independent Assurance Review of the Hawkei project conducted in October 2017—its implications continue to be considered by Defence.

1.13 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.

Projects of Concern

1.14 First established in 2008, the Projects of Concern process was implemented 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. As at 30 June 2017, two MPR projects were continuing projects of concern:

- AWD Ships, a project of concern since June 2014, due to increasing commercial, schedule and cost risks, including difficulties and delays in shipbuilding[36]; and
- MRH90 Helicopters, a project of concern since November 2011, due to technical issues preventing the achievement of milestones on schedule.[37]

1.15 In August 2017, the Ministers for Defence and Defence Industry announced[38] that the Civil Military Air Traffic Management System (CMATS) project was being placed on the list due to substantial challenges getting into contract.[39] The challenges revolve around issues with ensuring value for money for the taxpayer.

Quarterly Performance Report

1.16 The Quarterly Performance Report (QPR) introduced in 2014, 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.[40] Defence has advised that the report is provided to the Minister for Defence and the Minister for Defence Industry on a quarterly basis, with reports starting to cover the broader remit of the Capability Acquisition and Sustainment Group (CASG) deliverables, as recommended by the First Principles Review.[41]

1.17 In 2016–17, further to the two MPR projects of concern noted above, the June 2017 QPR also identified five MPR projects as Projects of Interest[42]:

- Joint Strike Fighter, due to the inability to deliver one element of capability required for FOC;

---

36 Issues in the project were discussed in ANAO Report No.22, 2013–14, *Air Warfare Destroyer Program*.

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

38 The Minister for Defence Industry, the Hon. Christopher Pyne MP, and the Minister for Defence, Senator the Hon. Marise Payne, *Projects of Concern Update*, 18 August 2017.

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

40 Department of Defence, *Quarterly Performance Report*, June 2017, p. 4.

41 ANAO Report No.2 2017–18, *Defence's Management of Materiel Sustainment*, July 2017, 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.

42 These are CASG acquisition projects that have variances significant enough—in the areas of schedule, cost, and/or capability performance—to warrant attention from senior management. Department of Defence, *Quarterly Performance Report*, June 2017, p. 12.

- LHD Ships, due to propulsion issues and other system defects, which have impacted on the forecast dates for FMR and FOC;
- CMATS, due to ongoing contract negotiations and the request for approval of a Real Cost Increase (this project has since been declared a Project of Concern);
- Battle Comm. Sys. (Land), due to additional validation and verification requirements not originally captured in the schedule, which have impacted on the forecast dates for FMR and FOC; 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, Battle Comm. Sys. (Land) and UHF SATCOM align with the results of the ANAO's review. Delays to progress have impacted the delivery schedule of four[43] of these projects (see Table 4, on page 12).

Joint Project Directives and Materiel Acquisition Agreements

1.19 The longstanding issue for Defence in maintaining complete and accurate records of government approvals for Major Projects, led to the introduction of Joint Project Directives (JPDs) (from March 2010).[44] JPDs state the terms of government approval and are used to inform internal documentation such as Materiel Acquisition Agreements (MAAs)[45] between CASG and the Service Chiefs.[46]

1.20 However, the initiative started slowly, with Defence taking over two years to begin to produce the first JPDs.[47] Further, JPDs are regularly 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.[48]

1.21 In 2016–17, 15 of the 16 MPR projects approved from 1 March 2010, have completed a JPD.[49] However, the ANAO requires access to original approval documents to validate the

43 LHD Ships, CMATS, Battle Comm. Sys. (Land) and UHF SATCOM.

44 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 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.

45 MAAs are being phased out gradually by Product Delivery Agreements (PDAs). Projects in this MPR have an approved MAA.

46 For further information on Joint Project Directives see ANAO Report No.6 2013–14, *Capability Development Reform*, October 2013, paragraphs 11.1 to 11.54, pp. 219–232.

47 ANAO Report No.6 2013–14, *Capability Development Reform*, October 2013, paragraph 11.53, p. 232.

48 ibid., paragraph 11.54, p. 232.

49 Joint Strike Fighter (Stage 2), P-8A Poseidon, Growler, MH-60R Seahawk, Overlander Medium/Heavy, Battlefield Airlifter, Bushmaster Vehicles, Overlander Light, Additional MRTT, CMATS, HATS, Battle Comm. Sys. (Land), Maritime Comms, BMS and LHD Landing Craft. As at 30 June 2017, the JPD for the Hawkei project was still in draft.

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. However, 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) are being developed to replace the existing MAAs and Materiel Sustainment Agreements (MSAs).[50] PDAs will be a higher level document (reviewed annually) that combine the MAA and MSA for each program. In August 2017, Defence advised that the development of the PDA templates was still ongoing.

Business systems rationalisation

1.24 Defence's business systems rationalisation is aimed at consolidating processes and systems in order to provide a more manageable system environment.[51] The Monthly Reporting System (MRS), which provides much of the data for the PDSSs, is to be replaced by the Project Performance Review for acquisition, and the Sustainment Performance Management System for sustainment.[52] 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'. Defence intends to rely on interfaces with existing systems, such as Open Plan Professional (OPP – the scheduling tool), rather than create another 'system'.[53]

1.25 In September 2017, Defence advised that 33 Defence projects, 15 of which are included in the MPR, are participating in a pilot of the Project Performance Review. The pilot is still in its formative stages and development work and reviews will continue into 2018. Defence has advised that the MRS is still the mandated reporting system and will continue to be used until late 2018. The ANAO will review the progress of the pilot during the next reporting period.

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 2016–17.

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

50 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.

51 Business system weaknesses, such as project offices having inconsistent record keeping and methods of tracking project progress were highlighted by the Committee in JCPAA Report 442, *Review of the 2012–13 Defence Materiel Organisation Major Projects Report*, May 2014, paragraph 3.116, p. 39.

52 See ANAO Report No.2 2017–18, *Defence's Management of Materiel Sustainment*, July 2017, for further detailed information on this system.

53 Mr K Gillis, *Official Committee Hansard*, Joint Committee of Public Accounts and Audit Hearing, 31 March 2017, p. 11.

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 established to provide adequate budget to cover the inherent cost, schedule and technical risks and uncertainties of the in-scope work of the project and any contingency events that may arise during the conduct of a project.[54]

1.29 In 2016–17, the ANAO reviewed the financial framework as it applied to managing project budgets and expenditure, including: contingency, project financial assurance and the reporting environment.

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'.[55]

1.31 In 2016–17 the CMATS project is seeking approval for a significant Real Cost Increase which is anticipated to be considered by government in February 2018.

1.32 Defence has continued to subject a sample of project financial assurance statements to a third-party agreed-upon procedures engagement. The third party engagement supports Defence in assessing the project financial assurance statements, by reporting on projects' compliance with an internal Defence instruction issued by the Chief Finance Officer.[56]

1.33 Projects selected for the 2016–17 third-party engagement, in support of the financial assurance statement assurance process, were:

- additional procedures—Joint Strike Fighter and UHF SATCOM; and
- standard procedures—LHD Ships, Additional MRTT and Battle Comm. Sys. (Land).

1.34 Defence has advised that the third-party engagement 'found no adverse factual findings that would indicate any financial issues with the PDSS [project financial assurance statements] for the five selected projects'.

54 Department of Defence, Defence Materiel Manual Project, DMM (PROJ) 11-0-003, *DMO Project Controls Manual*, August 2014, Glossary, p. 41.

55 JCPAA Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, paragraph 3.4, p. 14.

56 The Statement of Work for this engagement dated 18 October 2017 references the Department of Defence, Defence Materiel Instruction (Finance) DMI(FIN) 01-0-044, *Project Financial Assurance Statements*, February 2015, which Defence advised on 27 October 2017 was 'no longer current as it is an artefact of the previous DMO agency'. A response to the ANAO's request made on 13 November 2017 for the reason Defence continues to reference this DMI, is still pending.

1.35 In conclusion, for the 2016–17 Major Projects Report, the Acting 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 2017.

Contingency statements and contingency management

1.36 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'.[57] Defence policy requires project offices to maintain a contingency budget log to identify and track components of the contingency budget.[58]

1.37 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.

1.38 The five project offices which had contingency funds applied in 2016–17 were MRH90 Helicopters (supportability and performance risks), ANZAC ASMD 2A and 2B (gain share, combat management system, dockyard facilities and training facilities), Additional Chinook (building upgrade, missile warning system, improved vibration control and improved seating), and UHF SATCOM (software review and system security).

1.39 The ANAO's examination of the contingency statements as at 30 June 2017 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[59], eight projects (Joint Strike Fighter, P-8A Poseidon, LHD Ships, Hawkei, CMATS, ANZAC ASMD 2B, UHF SATCOM and ANZAC ASMD 2A) 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 applying contingency varied, with 23 project offices using the 'expected costs' of the risk treatment (as required by PRMM version 2.4), with HATS using a proportionate allocation of the likelihood of the risk eventuating (the method outlined in PRMM version 2.2); and
- there were seven 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.

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

58 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.

59 The ARH Tiger Helicopters acquisition project was closed in April 2017 and the Collins R&S project does not have a formal contingency allocation.

1.40 Non-compliance with PRMM version 2.4 has resulted in inconsistent approaches taken to the management of contingency.

Reporting environment

1.41 Defence advised projects at the start of the year to change reporting of expenditure to a cash basis (previously accrual). This resulted in significant changes to financial disclosures for 14 projects during ANAO site visits. Financial reporting was reverted to an accrual basis at 30 June for the purposes of consistency in reporting across years.[60]

1.42 Defence prepares, on a cash basis, all financial data related to projects and capital programs provided within the Defence Portfolio Budget Statements, Portfolio Additional Estimates Statements and annual report.[61] Therefore financial data in the PDSSs may not be consistent with that reported in the 2016–17 Defence annual report.

1.43 The ANAO also observed that incorrect exchange rates in system-generated commitment reports were used for projects managing contracts in foreign currencies, which meant that contract values had not been calculated correctly and required manual adjustment.

Enterprise Risk Management Framework

1.44 While major risks and issues data in the PDSSs remains excluded from the formal scope of the Auditor-General's *Independent Assurance Report*, material inconsistencies identified in relation to this information are required to be detailed in the report.[62] The following information is included to provide an overall perspective of how risks and issues are managed within Defence and the selected Major Projects.

1.45 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 assure the PDSS.

1.46 The ANAO first became aware of a comprehensive risk reform being pursued in CASG following the provision of a consultant's report which responds to recommendations contained in the First Principles Review.[63] This report recognises the opportunity for improvement and makes a number of observations, including:

- four of the eight CASG divisions have documented how risk management is conducted;
- there does not appear to be a positive risk culture where risk is appropriately identified, assessed, communicated and managed; and
- 'a general perception that culture in Defence and more broadly Defence industry was that the truth is not clearly represented or documented in risk reports. The justification

60 See page 75 in **Part 2** of this report for more information.

61 Department of Defence, *Defence Annual Report 16–17, Chapter 5, Corporate Governance*, p. 65.

62 The ANAO will continue to work with Defence to bring risks and issues into the scope of future MPR reviews.

63 Department of Defence, *Strategy to remodel the management of risk in Acquisition and Sustainment in Defence*, February 2017.

and evidence of this, is that risk reports often do not align with reality and the issues that emerge'.

1.47 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, to be implemented over two years. The first phase of the reform was expected to be completed by September 2017. Defence advised in October 2017 that this is yet to be completed. 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 scope until the 2018–19 MPR, when the reform is expected to be complete.

1.48 In 2016–17, 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.[64] Overall, the issues with risk management that the ANAO observed related to:

- variable compliance with corporate guidance, for example, five out of 27 Major Projects did not update their Risk Management Plan in line with PRMM version 2.4;
- the visibility of risks and issues when a project is transitioning to sustainment;
- 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[65]; and
- lack of quality control resulting in inconsistent approaches in the recording of issues within Predict!.

1.49 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 27 project offices indicates that 14 utilise spreadsheets[66] as their primary risk management tool, 11 utilise Predict! and one utilises a bespoke SharePoint based tool.[67]

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

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

66 The 14 projects are: MRH90 Helicopters, Growler, MH-60R Seahawk, Battlefield Airlifter, Additional MRTT, CMATS, ANZAC ASMD 2B, Additional Chinook, HATS, Battle Comm. Sys. (Land), UHF SATCOM, Collins R&S, ANZAC ASMD 2A and BMS.

67 The Joint Strike Fighter project utilises SharePoint.

1.50 Defence advised the JCPAA in March 2017 that there are 'too many systems and too much variation in the way [Defence] apply risk management in [the] organisation.'[68] While some project offices will experience greater challenges with risks and issues administration—often reflecting project complexity, scale and timing—it is important that Defence ensure that risk management systems and processes are used appropriately and consistently with the Defence Enterprise Risk Management framework. This is particularly important for higher cost/risk developmental projects.

Project maturity framework

1.51 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.[69]

1.52 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.[70] 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.

1.53 The ANAO has previously raised inconsistency in the application of Project Maturity Scores as an issue. However this year, Defence has been more consistent in applying this guidance.

1.54 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.

1.55 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. For example, the ARH Tiger Helicopters project had capability deficiencies and obsolescence issues at FOC (declared on 14 April 2016), but the maturity score prepared for the 2015–16 MPR did not accurately represent the project's maturity as at 30 June 2016, and the maturity score prepared for the 2016–17 MPR does not

---

68 Mr K Gillis, *Official Committee Hansard,* Joint Committee of Public Accounts and Audit Hearing, 31 March 2017, pp. 12–13. Defence also observed the importance of 'the intellectual rigor that somebody applies to risk management, not the tool'.

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

70 See Appendix 4 in **Part 2** of this report and footnote 13 for further detail.

accurately represent the project's maturity as at 30 June 2017. Refer to paragraphs 17 to 25 for further detail.

1.56 The policy guidance underpinning maturity scores was due for review in September 2012.[71] 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.'[72] In response, Defence engaged a contractor to develop a more appropriate methodology to support the presentation of the Project Maturity Score graphs. However, due to the immaturity of the processes and systems referred to, CASG is not yet in a position to test or apply such a methodology and has not proposed an approach to the ANAO.

1.57 In October 2017, the JCPAA recommended 'that the Department of Defence commence discussions with the Australian National Audit Office on updating Project Maturity Scores, with a view to advising the Committee on a way forward prior to the first sitting week of 2018.'[73]

Caveats

1.58 In 2016–17, the ANAO noted a continuing trend of Major Projects which have achieved significant milestones with caveats.[74] Table 9 below lists the current MPR projects which have achieved a major milestone with caveats.[75]

Table 9: Caveated projects

Project	Milestone (Year)	Number of Caveats	Description	Status of Caveats (as at 30 June 2017)
Overlander Light	IMR (2014) and IOC (2015)	Three	Capability requirements; and Safety requirements.	All resolved
	FOC (2016)	Two	Capability requirements; and Training requirements.	Unresolved–both lifted in September 2017
Battlefield Airlifter	IMR and IOC (2016)	Two	Supply support deficiencies; and Training requirements.	Unresolved—both lifted in August 2017
ARH Tiger Helicopters	FOC (2016)	Nine	Capability requirements; Availability of supplies; and Availability of industry and Defence staff.	Unresolved—two lifted in July 2017
Growler	IMR (2017)	One	Training requirements.	Unresolved

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

71 Department of Defence, DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, September 2010, p. 9, with a stated 24 month review period.

72 JCPAA Report 458, *Defence Major Projects Report (2014-15)*, May 2016, Recommendation 3, p. 50. The JCPAA sought an update from Defence in the course of public hearings on 31 March 2017.

73 JCPAA, Report 468, *Defence Major Projects Report (2015-16)*, October 2017, Recommendation 2, p. vii.

74 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. ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, p. 25.

75 Wedgetail, which has exited the MPR, achieved FOC with caveats in 2015.

1.59 At JCPAA hearings on 31 March 2017, Defence confirmed that caveats are an infrequent event.[76]

1.60 The ANAO will continue to monitor the declaration and resolution of caveats in future reviews. Additionally, from 2017–18, 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.[77]

76 Defence evidence, *Official Committee Hansard*, Joint Committee of Public Accounts and Audit Hearing, 31 March 2017, p. 3.

77 This requirement was agreed to by Defence and included in the *2017–18 Major Projects Report Guidelines* endorsed by the JCPAA in September 2017.

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)[78]; and
- percentage of key materiel capabilities delivered[79] (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.

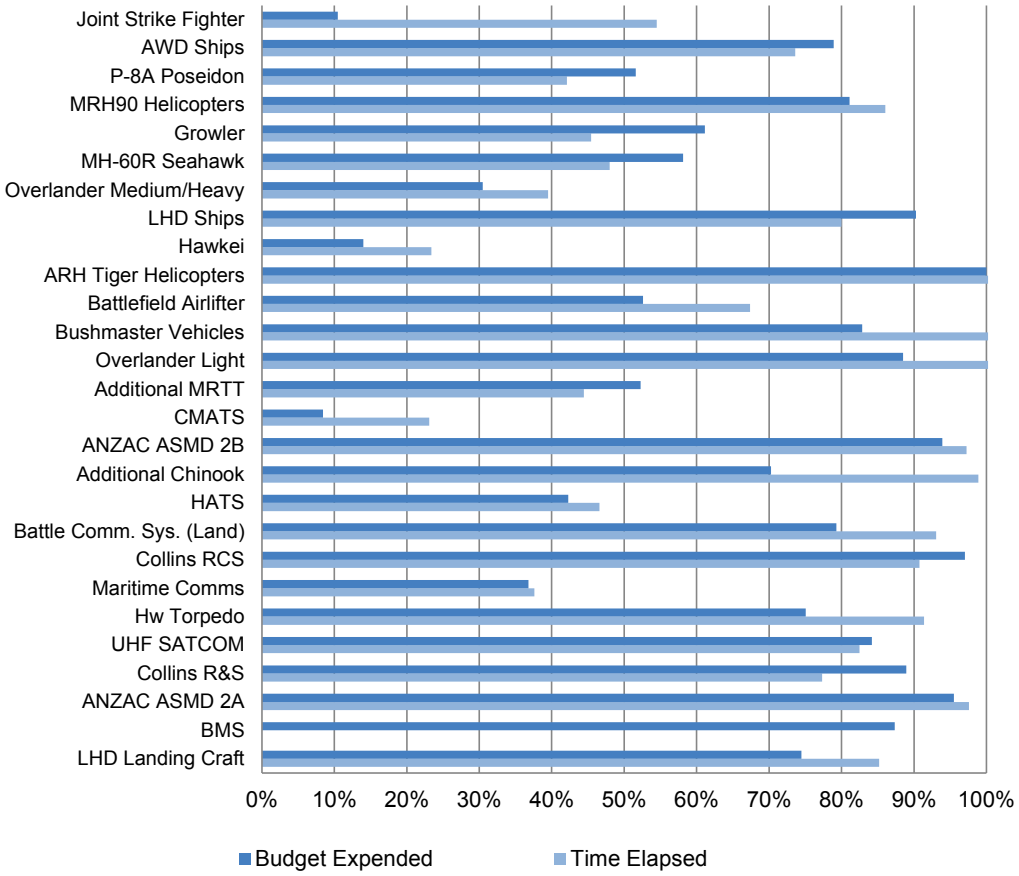
2.5 The following sections of this chapter provide analysis relating to the three principal components of project performance. This includes in-year information, longitudinal analysis and the results of project progress for the year-ended 30 June 2017. The first piece of analysis, in Figure 2 below, sets out each project's Budget Expended and Time Elapsed.[80]

78 Refer to footnote 11 for the definition of IMR and FMR milestones, and footnote 12 for the definition of IOC and FOC milestones.

79 See paragraphs 2.48 to 2.56 for further explanation.

80 A project's budgeted cost and schedule data is at 30 June 2017, 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 is expected to achieve FMR and MAA closure in quarter one 2018.

Source: ANAO analysis of the 2016–17 PDSSs.

2.6 Figure 2 shows that for most projects (21 of 27), Budget Expended is broadly in line with, or lagging, Time Elapsed.[81] 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 an overall picture 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

81 A project's budget expended is cash based. In cases where pre-payments have been made, but have not been expensed/amortised, cash paid by a project will be greater than the accrued expenditure.

not the case for the two projects where the Budget Expended is over 20 per cent less than the Time Elapsed in 2016–17, as detailed below:

- Joint Strike Fighter (Budget Expended 10 per cent, Time Elapsed 54 per cent)—a large scope increase ($10.5 billion) for the purchase of additional aircraft was approved in April 2014, with the project yet to enter into main production contracts, as aircraft development continues; and
- Additional Chinook (Budget Expended 70 per cent, Time Elapsed 99 per cent)—the variance reflects cost savings achieved through the integration of a number of previously post production modifications (including some of the Australian unique modifications) on the production line and progressive price reductions in the Foreign Military Sales (FMS) case.

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 five 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 52 per cent, Time Elapsed 42 per cent)—most of the expenditure on equipment is in line with aircraft production over the coming three financial years. Three aircraft have now been delivered to Defence.
- Growler (Budget Expended 61 per cent, Time Elapsed 45 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.
- MH-60R Seahawk (Budget Expended 58 per cent, Time Elapsed 48 per cent)—the project has taken delivery of all 24 aircraft. The variance is caused by the time between final aircraft delivery and FOC, which is being used to implement Australian unique modifications and modify navy vessels to operate with the MH-60R Seahawk.
- LHD Ships (Budget Expended 90 per cent, Time Elapsed 80 per cent)—most of the budget has been expended. The Final Materiel Release (FMR) and FOC milestones have been further delayed in 2016–17 due to the unavailability of the LHD Ships to conduct operational test and evaluation activities as a result of issues with the propulsion pods and ongoing remediation of other systems.
- Collins R&S (Budget Expended 89 per cent, Time Elapsed 77 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.

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

Sustainment reporting in the Major Projects Report

2.10 Historically, the majority of projects within the MPR have not been required to disclose significant detail in relation to sustainment activity to meet the requirements of the MPR Guidelines. However, the practice of providing caveated achievement of IOC or FOC provides for advancement through the process of acceptance into operational service, notwithstanding known shortcomings.

2.11 The practice of issuing caveated milestones will require Defence to exercise appropriate judgement for the capability disclosures within the MPR, in order to prepare project PDSSs that provide an accurate depiction of performance to readers of the PDSS while also ensuring that classified data is prepared in such a way as to allow for unclassified publication. Additionally, the ANAO may need to monitor and report on projects 'in sustainment', when projects complete tasks defined, and funded, for delivery in acquisition.

- For example, the ARH Tiger Helicopters acquisition received caveated FOC and requires additional funding to address outstanding issues. The ANAO's performance audit[82] identified that the funding required to remediate the ARH Tiger Helicopters was beyond the scope of the already approved $2 033.0 million for the acquisition project. Expert analysis commissioned by Defence indicates that the issues arising from the developmental nature of the ARH Tiger Helicopter platform and sub-optimal sustainment arrangements will endure.[83]

2.12 The JCPAA agreed to removing the ARH Tiger Helicopters project from the 2017–18 MPR, instead requiring that the status of projects achieving FMR/FOC with caveats be reported in the *Statement by the Secretary of Defence* until their final status is accepted by the Capability Manager.

2.13 The practice of Defence issuing caveats to milestones is discussed further in Chapter 1, in paragraphs 1.58 to 1.60.

Budget Expended and Project Maturity

2.14 Figure 3, below, sets out each project's Budget Expended against Project Maturity[84] and shows that Budget Expended lags Project Maturity for the majority of projects (18 of 27). 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 testing and

82 The caveats, capability deficiencies and obsolescence issues were discussed in ANAO Report No.11 2016–17, Tiger—Army's Armed Reconnaissance Helicopter, September 2016, pp. 25–33 and pp. 50–53. See also paragraphs 17 to 25 in **Part 1** of this report.

83 Department of Defence, *Houston Review into Army Aviation*, April 2016.

84 The JCPAA has recommended that a capacity to publish Project Maturity Scores be maintained by Defence until they are no longer required by the JCPAA. JCPAA Report 442, *Review of the 2012–13 Defence Materiel Organisation Major Projects Report*, May 2014, Recommendation 8, p. 39.

demonstration, ahead of formal acceptance of milestone achievement (and expenditure of budget); and

- where there is a larger proportion of Military Off-The-Shelf (MOTS) projects. MOTS products are generally in-service with other military forces, and will generally have benefited from significant development and testing, prior to selection by Defence, resulting in a higher level Project Maturity score.

2.15 Budget Expended lags Project Maturity with a variance of 20 per cent or more in 12 projects. As expected, these projects are generally classified as either MOTS or Australianised MOTS. The exceptions are Joint Strike Fighter, which is expected to be classified as MOTS by the time of aircraft delivery; Hawkei, which is still conducting testing and other reviews prior to the start of full-rate production; and CMATS, which remains in negotiation with the prime contractor ahead of signing the main acquisition contract. There are no instances where Budget Expended leads Project Maturity by 20 per cent or more.

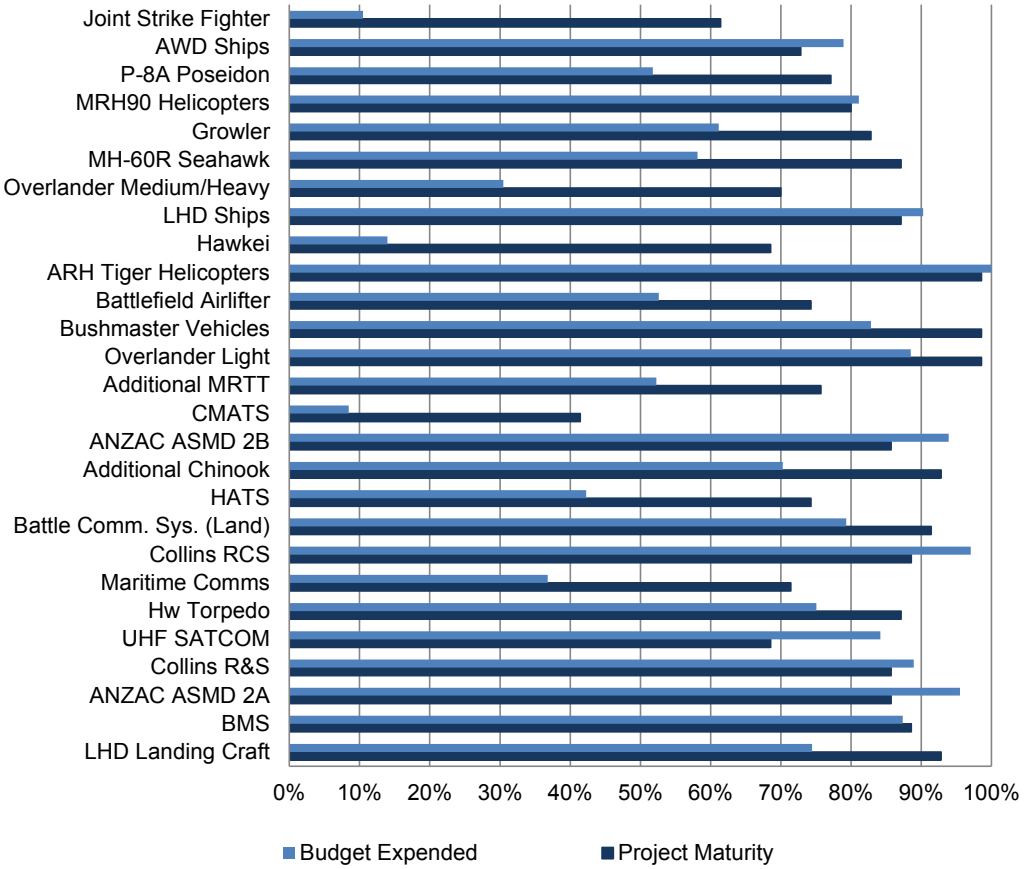
2.16 The variances are, in part, the result of Defence's project maturity framework attributing approximately 50 per cent of total Project Maturity at Second Pass Approval (the main investment decision by government).[85] This reduces the value of project maturity assessments during the early stages of acquisition.

2.17 Defence's focus on typically lower risk MOTS acquisitions in recent years, has assisted in meeting schedule timelines across projects.[86] 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.

85 The JCPAA has recommended that Defence work with the ANAO to review and revise its policy regarding Project Maturity Scores. JCPAA Report 458, *Defence Major Projects Report (2014–15)*, May 2016, pp. 49–50, and JCPAA Report 468, *Defence Major Projects Report (2015–16)*, October 2017, pp. 9–10.

86 See paragraphs 2.32 to 2.36 and Figure 8, on page 47, for more information. However, acceptable MOTS solutions may not always be available.

Figure 3: Budget Expended and Project Maturity



Note: ANZAC ASMD 2B's Project Maturity is based on the progress of the lead ship, not on the current eight ship program.

Source: ANAO analysis of the 2016–17 PDSSs.

Second Pass Approval and 30 June 2017 approved budget

2.18 Figure 4, below, compares each project's approved budget at Second Pass Approval and its approved budget at 30 June 2017.

2.19 The total budget for the 27 projects at 30 June 2017 was $62.0 billion, a net increase of $21.5 billion, when compared to the approved budget at Second Pass Approval of $40.5 billion (detailed analysis of this variance is included in Table 3, on page 11).

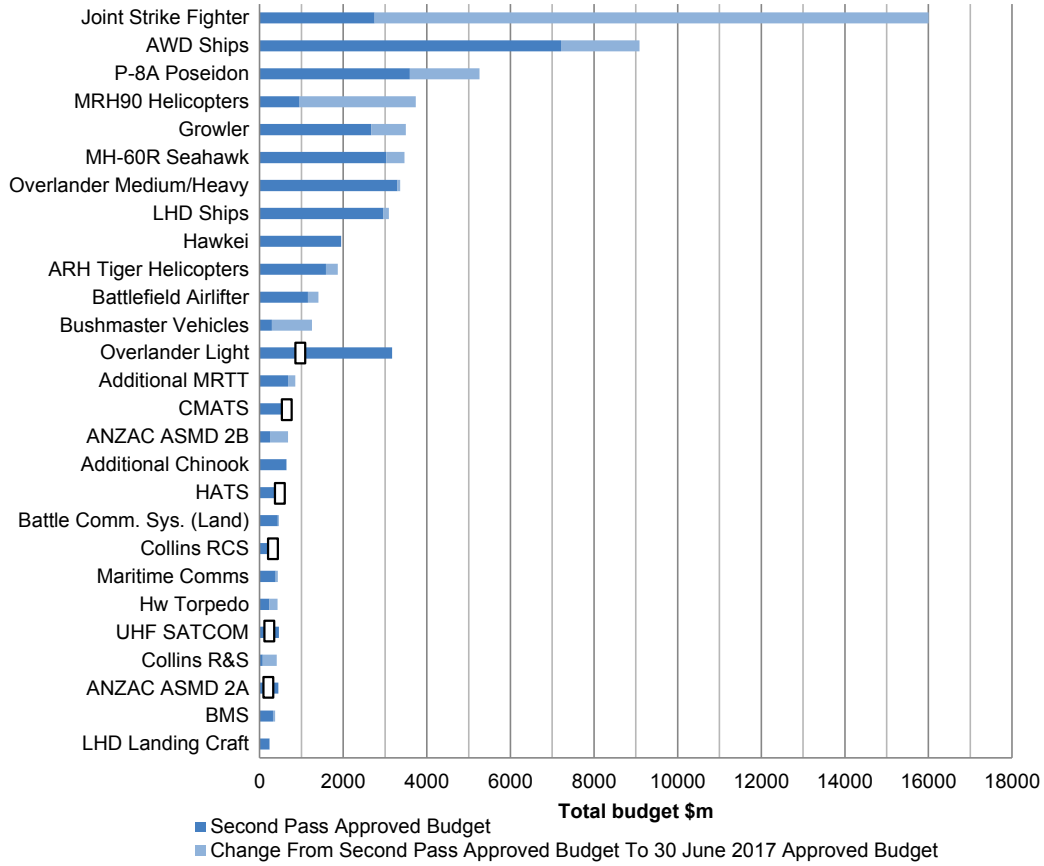
2.20 Figure 4 indicates relative budget variations from Second Pass Approval of $500 million or more for six projects. The list below describes the components of these variations:

- Joint Strike Fighter—increase of $13.3 billion, comprising $10.5 billion for 58 additional aircraft in 2013–14, $2.4 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[87] 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 $1.7 billion, comprising $1.3 billion for four additional aircraft in 2015–16 and $0.4 billion for exchange rate variation;
- MRH90 Helicopters—increase of $2.8 billion, comprising $2.4 billion for 34 additional aircraft in 2005–06 and other minor scope changes, $0.7 billion for price indexation, offset by a $0.3 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 in 2016–17, $0.1 billion 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 re-allocation 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
- Bushmaster Vehicles—increase of $1.0 billion, comprising $0.8 billion for 715 additional vehicles in 2007–08 (437 vehicles), 2011–12 (70 vehicles) and 2012–13 (208 vehicles) and other minor scope changes and $0.1 billion for price indexation.[88]

87 See Note 3 of Figure 4, below, for further information.

88 The components for this project do not add up to $1.0 billion due to rounding differences.

Figure 4: Projects' Second Pass Approval and 30 June 2017 approved budget ($m)



Note 1: indicates that the budget for the project at 30 June 2017 is less than the original budgeted cost. However, for Overlander Light this reflects a transfer of $2.2 billion to Overlander Medium/Heavy on separation of the original project into two phases in December 2011.

Note 2: The Second Pass Approval amount for the Overlander Medium/Heavy project includes a Real Cost Increase of $0.7 billion, which was provided as part of the revised Second Pass Approval in July 2013.

Note 3: 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 2016–17 PDSSs.

Budget performance

2.21 The following figures and tables illustrate the budget performance for the 27 selected projects by way of:

- in-year budget variations by project (see Table 10, below); and
- expenditure forecasting performance against actual expenditure for 2016–17 (see Figure 5, on page 42).

In-year budget variance analysis

2.22 Table 10, below, sets out the in-year budget variations for each project. Overall, the approved budget for the projects as at 30 June 2017 decreased by $1 641.2 million, or 2.7 per cent, compared to their approved budget as at 30 June 2016. This was driven by net real decreases of $162.3 million, and exchange rate variation decreases of $1 478.7 million.

2.23 Real Variations[89] primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability and budgetary adjustments such as administrative savings decisions. In 2016–17, the two projects with more significant Real Variations were[90] :

- Growler—variation of $2.6 million reflecting approval for the Advanced Mobile Threat Training Emitter System scope, offset by the return to the Defence budget of surplus funds for re-allocation; and
- ARH Tiger Helicopters—variation of -$165.0 million reflecting the return to the Defence budget of unspent funds at closure of the acquisition project.[91]

2.24 Exchange rate variations result from projects' exposure to foreign currencies and movements in foreign exchange rates against the Australian dollar.[92] 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 2016–17 included:

- Joint Strike Fighter—movement of -$733.5 million, or 4.4 per cent decrease in budget;

89 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.

90 In addition, Collins R&S had a real variation of $0.1 million reflecting minor rounding changes to the PDSS.

91 FOC for ARH Tiger Helicopters was declared with caveats. Defence has subsequently advised that the two caveats relating to the Electronic Warfare System and Identification, Friend or Foe were lifted in July 2017. Army is managing the remediation of the remaining seven caveats. Defence is considering additional expenditure potentially through a Capability Assurance Program pending replacement of the platform in the mid-2020s. Department of Defence, *2016 Integrated Investment Program*, February 2016, p. 21.

92 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.

- P-8A Poseidon—movement of -$257.4 million, or 4.7 per cent decrease in budget; and
- Overlander Medium/Heavy—movement of -$102.1 million, or 2.9 per cent decrease in budget.

Table 10: In-year (2016–17) budget variations by project

Project	Approved Budget 2015–16 $m	Approved Budget 2016–17 $m	In-year Exchange Variation $m	In-year Real Variation $m	Total Variance $m	Total Variance (per cent)
Joint Strike Fighter	16 738.4	16 004.9	(733.5)	-	(733.5)	(4.4)
AWD Ships	9 120.8	9 090.1	(30.7)	-	(30.7)	(0.3)
P-8A Poseidon	5 519.9	5 262.5	(257.4)	-	(257.4)	(4.7)
MRH90 Helicopters	3 773.9	3 733.8	(40.1)	-	(40.1)	(1.1)
Growler [1]	3 556.5	3 495.0	(64.3)	2.6	(61.5)	(1.7)
MH-60R Seahawk [1]	3 520.4	3 462.5	(58.0)	-	(57.9)	(1.6)
Overlander Medium/Heavy	3 465.6	3 363.5	(102.1)	-	(102.1)	(2.9)
LHD Ships	3 092.9	3 091.9	(1.0)	-	(1.0)	0.0
Hawkei	-	1 951.1	(56.3)	-	(56.3)	(2.9)
ARH Tiger Helicopters	2 033.0	1 867.8	(0.2)	(165.0)	(165.2)	(8.1)
Battlefield Airlifter	1 434.5	1 406.7	(27.8)	-	(27.8)	(1.9)
Bushmaster Vehicles [1]	1 250.7	1 250.6	-	-	(0.1)	0.0
Overlander Light	1 017.7	1 017.6	(0.1)	-	(0.1)	0.0
Additional MRTT [1]	911.4	855.5	(55.8)	-	(55.9)	(6.5)
CMATS	-	730.7	(0.7)	-	(0.7)	(0.1)
ANZAC ASMD 2B [1]	678.6	678.6	0.1	-	0.0	0.0
Additional Chinook	642.4	637.8	(4.6)	-	(4.6)	(0.7)
HATS	487.6	474.2	(13.4)	-	(13.4)	(2.8)
Battle Comm. Sys. (Land)	464.6	463.3	(1.3)	-	(1.3)	(0.3)
Collins RCS [1]	450.6	450.4	(0.1)	-	(0.2)	0.0
Maritime Comms [1]	456.0	432.1	(24.0)	-	(23.9)	(5.2)
Hw Torpedo	429.7	428.0	(1.7)	-	(1.7)	(0.4)
UHF SATCOM [1]	421.4	420.5	(0.8)	-	(0.9)	(0.2)
Collins R&S	411.7	411.7	(0.1)	0.1	0.0	0.0
ANZAC ASMD 2A [1]	386.8	386.7	-	-	(0.1)	0.0
BMS	372.8	369.1	(3.7)	-	(3.7)	(1.0)
LHD Landing Craft	237.9	236.8	(1.1)	-	(1.1)	(0.5)
Total	60 875.8	61 973.4	(1 478.7)	(162.3)	(1 641.2)	(2.7)

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

Source: ANAO analysis of the 2015–16 and 2016–17 PDSSs.

In-year forecast and actual expenditure

2.25 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 2016–17. It should be noted that the PDSSs report expenditure on an accrual basis, while the budget figures are reported on a cash basis for the first time in 2016–17.[93] In total, actual expenditure for the 27 projects at 30 June 2017 was $4 076.1 million when measured on a cash basis.[94] This cash expenditure is compared to $4 137.3 million per the PDSSs (accrual basis), which was 1.5 per cent, or $61.2 million higher than the cash expenditure. This is compared against an initial Portfolio Budget Statements (PBS) forecast expenditure of $4 803.7 million, a mid-year Portfolio Additional Estimates Statements (PAES) forecast of $4 417.7 million, and a final forecast of $4 282.7 million (Final Plan, approved during May 2017). The main factors contributing to the variances on a cash basis were changes to delivery and payment schedules, and foreign exchange fluctuations.

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

- AWD Ships (accrual expenditure of $532.7 million and cash expenditure of $575.0 million compared to $725.5 million PBS, $675.7 million PAES and $674.0 million Final Plan estimates)—the remainder of the variance is due to the deferral of payments from 2016–17 to 2017–18 and savings against indexation estimates and direct project costs;
- MRH90 Helicopters (accrual expenditure of $104.4 million and cash expenditure of $131.0 million compared to $174.4 million PBS, $180.8 million PAES and $175.5 million Final Plan estimates)—the remainder of the variance is due to the deferral of payments across a number of project deliverables;
- Growler (accrual expenditure of $168.2 million and cash expenditure of $128.1 million compared to $242.0 million PBS, $157.4 million PAES and $165.8 million Final Plan estimates)—the remainder of the variance is due to the deferral of payments for the Advanced Mobile Threat Training Emitter System, which was originally scheduled to occur in 2016–17 but has shifted to 2017–18 because of a delay in contract signature;
- MH-60R Seahawk (accrual expenditure of $123.7 million and cash expenditure of $78.2 million compared to $230.0 million PBS, $183.9 million PAES and $141.0 million Final Plan estimates)—the remainder of the variance is due to delays in deliveries and subsequently payments for some FMS deliverables and ANZAC and AWD integration activities;
- Hawkei (accrual expenditure of $24.3 million and cash expenditure of $25.3 million compared to $95.2 million PBS, $55.8 million PAES and $55.4 million Final Plan estimates)—the remainder of the variance is due to delays in the completion of testing and the resulting delay of milestone payments; and
- Battlefield Airlifter (accrual expenditure of $48.6 million and cash expenditure of $33.1 million compared to $147.6 million PBS, $72.8 million PAES and $60.7 million Final Plan estimates)—the remainder of the variance is due to reductions in FMS case

93 Refer to footnotes 60 and 61 for more detail.

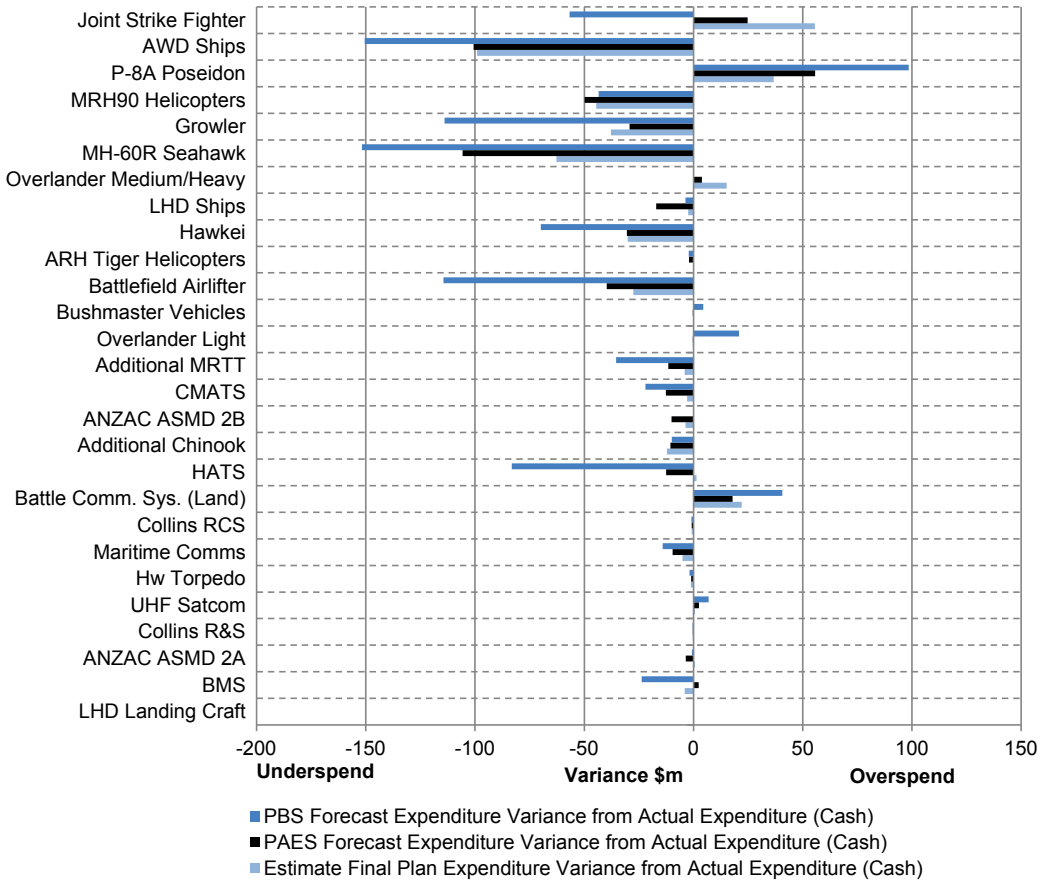
94 Cash basis expenditure data was provided to the ANAO by the Chief Finance Officer Group, Department of Defence.

payments and delays in contracting for a number of project deliverables, including spare parts, support equipment and maintenance.

2.27 Figure 5 also highlights that notable in-year overspends occurred in the following projects:

- Joint Strike Fighter (accrual expenditure of $745.3 million and cash expenditure of $669.0 million compared to $725.7 million PBS, $644.2 million PAES and $613.4 million Final Plan estimates)—the remainder of the variance is due to the acceleration of payments due to earlier aircraft production; and
- P-8A Poseidon (accrual expenditure of $1 145.0 million and cash expenditure of $1 145.3 million compared to $1 046.8 million PBS, $1 089.6 million PAES and $1 108.6 million Final Plan estimates)—the remainder of the variance is due to the acceleration of payments due to earlier aircraft production. This is partially offset by deferral of air to air refuelling clearance activities and support system spares purchases and the associated payments.

Figure 5: In-year (2016–17) projects' forecast expenditure performance compared to actual expenditure ($m)



Sources: ANAO analysis of the 2016–17 PDSSs, cash basis expenditure data provided by Defence and Defence Portfolio Budget Statements.

Schedule performance analysis

2.28 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

2.29 Figure 6, below, sets out each project's Time Elapsed against Project Maturity.[97] Time Elapsed lags Project Maturity for 15 of 27 projects. The 15 projects are classified as either MOTS or Australianised MOTS, except Joint Strike Fighter, which is expected to be classified as MOTS by the time of aircraft delivery, as well as Hawkei and CMATS, which are new developmental projects.

2.30 For the nine projects where Time Elapsed lags Project Maturity by 20 per cent or more, this typically reflects projects at an early stage of acquisition processes, including proceeding through design processes and awaiting significant amounts of their major equipment to be constructed and delivered. There are two 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; and
- 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.

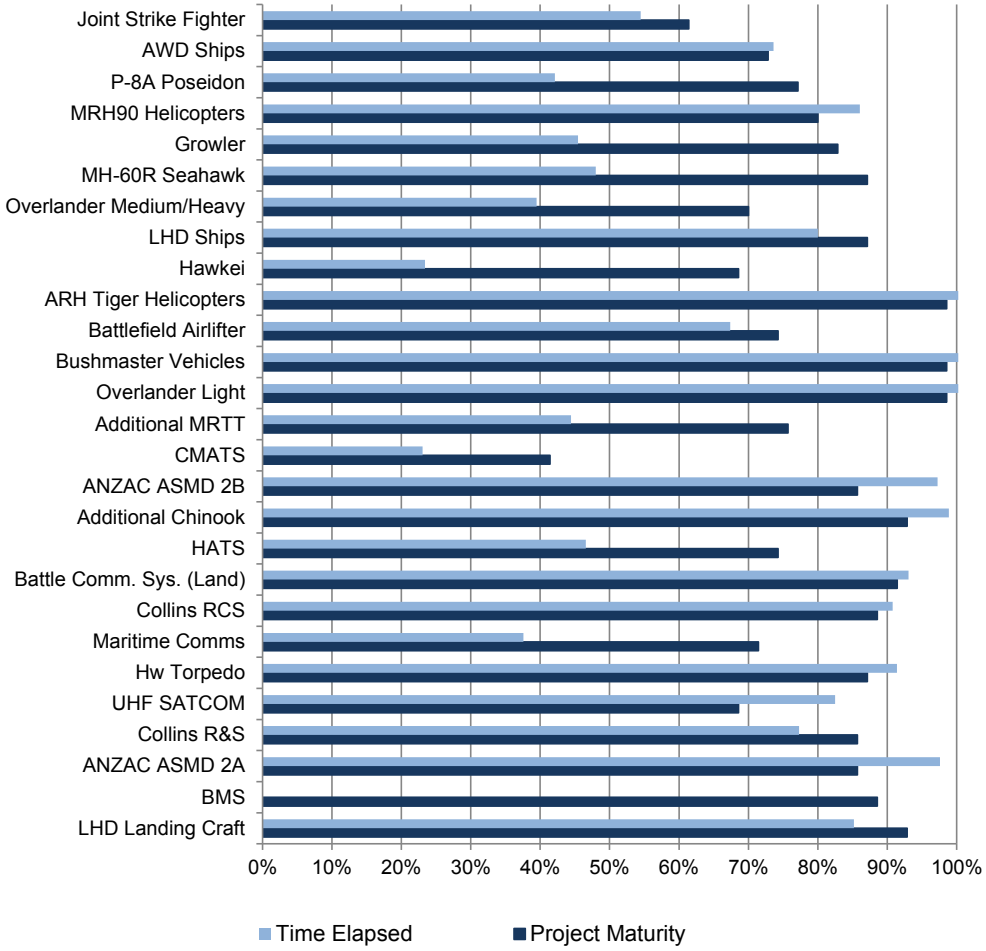
2.31 For the 12 projects where Time Elapsed leads Project Maturity, there were no instances where this difference was significant (20 per cent or more).

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 Refer to footnote 84 for more detail.

Figure 6: Time Elapsed and Project Maturity



Note 1: ANZAC ASMD 2B's Project Maturity is based on the progress of the lead ship, not on the current eight ship program.

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 is expected to achieve FMR and MAA closure in quarter one 2018.

Source: ANAO analysis of the 2016–17 PDSSs.

Schedule slippage and acquisition type by approval date

2.32 Figure 7, below, illustrates the total schedule slippage[98] since Second Pass Approval for the 27 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 14 projects that have exited the review.

2.33 Figures 7 and 8 show that the continued focus on MOTS and Australianised MOTS acquisitions is, prima facie, contributing to a reduction in schedule slippage in the Major Projects portfolio. However, it is not always possible to acquire the necessary capability in this manner, and decisions on whether to undertake developmental projects should be considered on a risk basis. 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.

2.34 The *2008 Audit of the Defence Budget* (Pappas Review) identified technical risk as the largest source of post Second Pass Approval schedule slippage for 'post Kinnaird' projects[99], and also observed that schedule slippage causes cost escalation.[100] The challenge of gaining a full understanding of the complexities of developmental aspects of projects at Second Pass Approval is evident by the extent of slippage over time.

2.35 Figures 7 and 8 illustrate that older projects, 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.

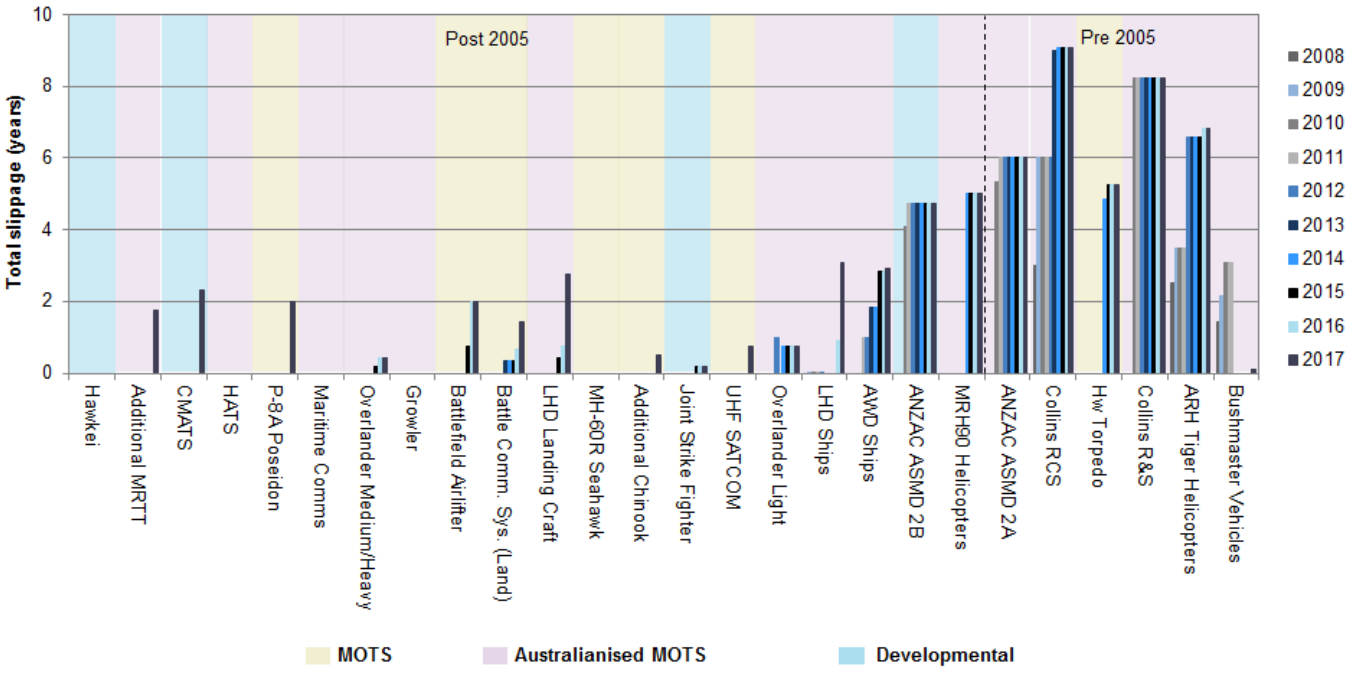
2.36 While it is not possible to predict the full extent of slippage a project will experience, this analysis has been provided to highlight changes since Kinnaird. Seven post Kinnaird and seven pre Kinnaird projects have exited the MPR. Total slippage of the seven post Kinnaird projects is 5.8 years. Total slippage of the seven pre Kinnaird projects is 44.3 years. Five of the seven post Kinnaird projects were MOTS acquisitions and all of the seven pre Kinnaird acquisitions were Australianised MOTS or Developmental.

98 Refer to footnote 26.

99 M Kinnaird, Defence Procurement Review 2003, August 2003.

100 G Pappas, Department of Defence, *2008 Audit of the Defence Budget*, April 2009, p. 76.

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.

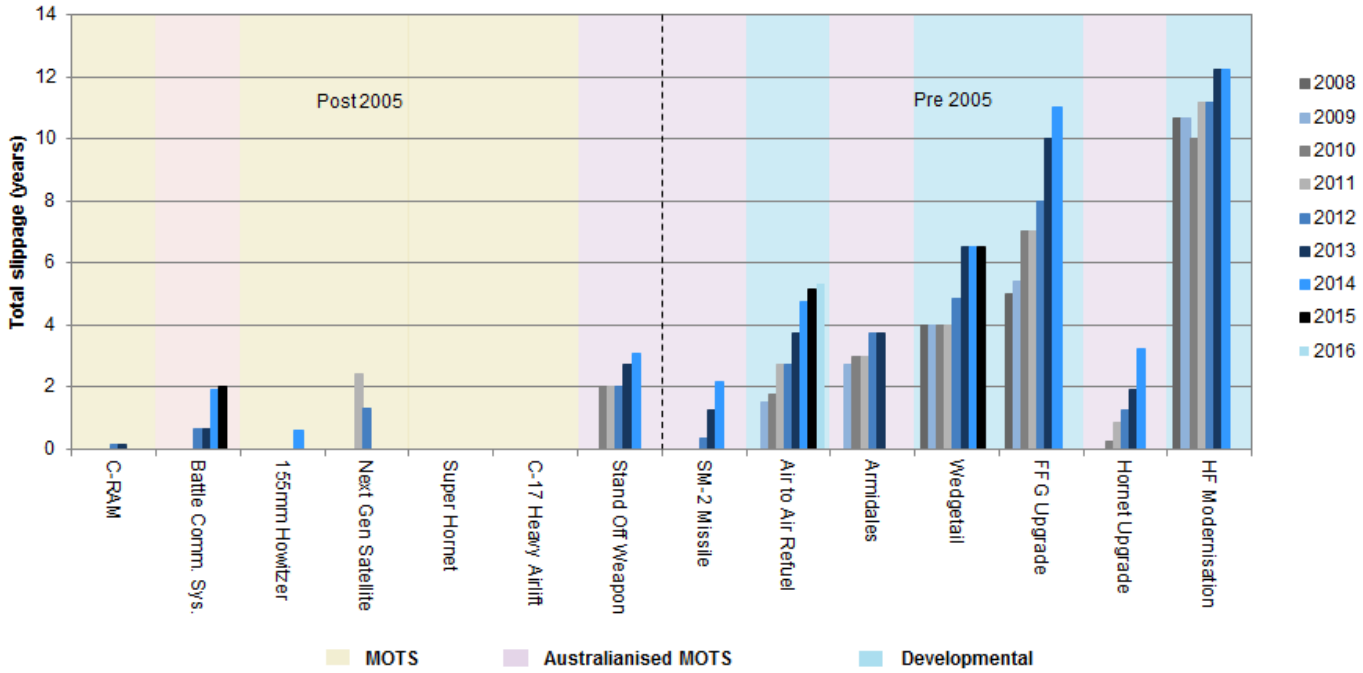
Note 2: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's analysis is Production Period Five.

Note 3: 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 is expected to achieve FMR and MAA closure in quarter one 2018.

Note 4: The following projects have had additional scope approved following Second Pass Approval: Joint Strike Fighter, P-8A Poseidon, MRH90 Helicopters, Bushmaster Vehicles, Overlander Light and Additional MRTT.

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

2.37 The figures and tables that follow illustrate:

- the original and 30 June 2017 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 2017 Final Operational Capability forecasts

2.38 Figure 9, below, presents information on the selected projects' original and 30 June 2017 forecasts for achieving FOC. The total schedule slippage for the 27 Major Projects to date is 793 months compared to the initial prediction when approved by government. This represents a 29 per cent increase on the approved schedule.[101] Of the 27 projects in the 2016–17 report, 21 have experienced schedule slippage.

2.39 Total schedule slippage across the Major Projects was 793 months in 2016–17. This is 85 months higher than the figure of 708 months reported in the 2015–16 report. The difference is mainly due to significant slippage in P-8A Poseidon (additional aircraft purchase decision), LHD Ships (technical difficulties delaying test), Additional MRTT (additional Government Transport and Communication capability), CMATS (ongoing contractual negotiations), and LHD Landing Craft (LHD Ships availability for operational test and evaluation activities).[102] These projects, combined, added 123 months of the 149 months schedule slippage in 2016–17, but were offset by the exit of Air to Air Refuel, which reduced the accumulated slippage by 64 months.

2.40 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).[103]

2.41 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.[104] Two projects, MRH90 Helicopters[105] and ARH Tiger

101 In instances where a Major Project has multiple segments/capabilities with separate Final Operational Capability (FOC) dates, the ANAO has used the project's current lead/main capability FOC for calculating schedule performance. Defence's approach is to use the final FOC date for a project listed in the 2016–17 PDSSs. These approaches, both valid, led to a small difference in the calculated percentage by which the Major Projects' total schedule has slipped for the 2016–17 MPR (ANAO—29 per cent; Defence—29 per cent).

102 Refer to footnote 26.

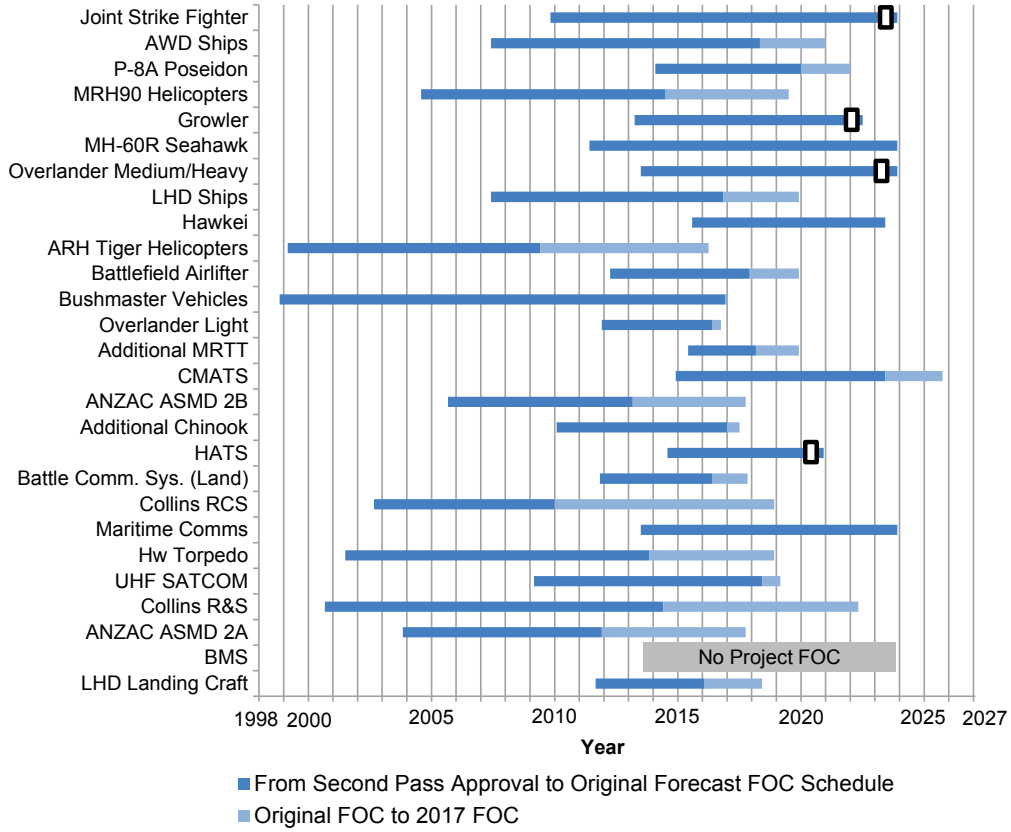
103 See the Collins RCS, Hw Torpedo and Collins R&S PDSSs in **Part 3** of this report.

104 ANAO Report No.6 2013–14, *Capability Development Reform*, October 2013, paragraphs 9.1 to 9.4, pp. 198–199.

105 Further information on MRH90 Helicopters can be found in ANAO Reports No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, June 2009, pp. 84, 90 and 133; No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, June 2012, pp. 86–87 and pp. 130–133; and No.52 2013–14, *Multi-Role Helicopter Program*, June 2014.

Helicopters[106], were originally misclassified as MOTS. The projects were reclassified by Defence to Australianised MOTS (i.e. more developmental) subsequent to Second Pass Approval. Both projects have experienced extended schedule slippage.[107]

Figure 9: Projects' original and 30 June 2017 FOC forecasts



Note 1: ▯ indicates that the forecast FOC date for the project at 30 June 2017 is earlier than the original FOC date.

Note 2: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's Major Projects Report analysis is Production Period Five.

Note 3: 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 is expected to achieve FMR and MAA closure in quarter one 2018.

Source: ANAO analysis of the 2016–17 PDSSs.

106 Refer to footnote 82 for more detail.

107 At the 31 March 2017 hearings of the JCPAA, Defence acknowledged that in respect of the ARH Tiger Helicopter acquisition '…it had assumed that it was an off-the-shelf acquisition and that it was more mature than it was'. Defence advised the Committee that this is '…one of the fundamental lessons that Defence has learnt from this Tiger program'. *Official Committee Hansard,* Joint Committee of Public Accounts and Audit Hearing, 31 March 2017, p. 9.

In-year schedule performance

2.42 In 2016–17, there was schedule slippage of 149 months in the forecast achievement of FOC across the 27 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 two projects, and that one project anticipates delivery ahead of the original schedule:

- Hw Torpedo and Collins RCS—the projects currently expect to achieve FOC two months ahead of the 2016 forecast schedule in December 2018; and
- Growler—the project currently expects to achieve FOC one month ahead of the original schedule.

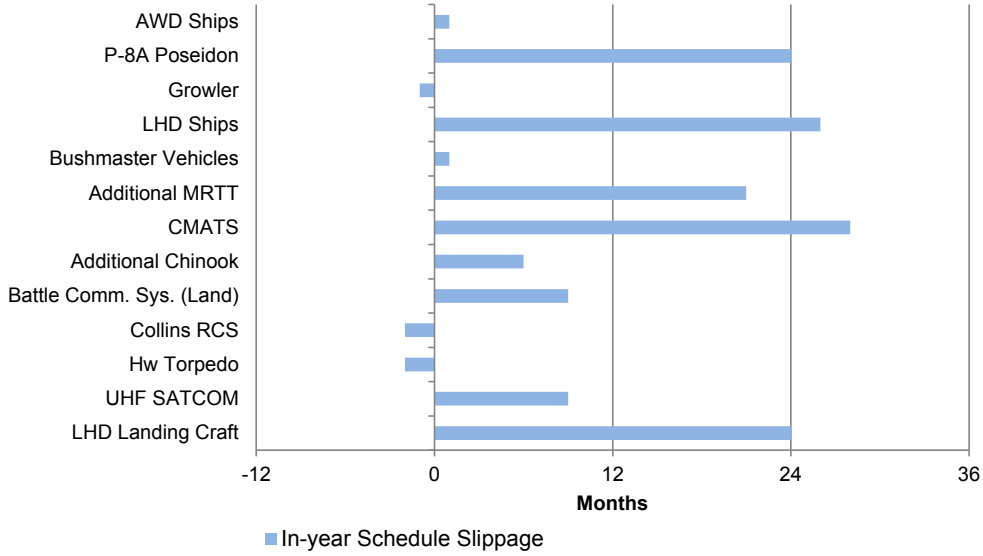
2.43 In-year schedule slippage occurred for the following ten projects[108] (the explanation provided, drawn from the 2016–17 PDSSs, may also include the reasons for prior slippage):

- AWD Ships—the variance reflects minor rescheduling of the FOC milestone;
- P-8A Poseidon—the delay reflects additional schedule required following the approval to purchase an additional four aircraft in March 2016;
- LHD Ships—the delay reflects technical issues that have impacted the availability of the LHDs to conduct test activities. These technical issues have also delayed the rectification of outstanding acquisition activities;
- Bushmaster Vehicles—the variance reflects a minor delay to the declaration of FOC by the Capability Manager;
- Additional MRTT—the delay to FOC reflects adjustments to the project schedule to account for the inclusion of the Government Transport and Communications capability following contract signature in August 2016;
- CMATS—the delay to FOC reflects ongoing delays in negotiations of the primary acquisition contract with the forecasts remaining uncertain at this time. A final forecast FOC date is not expected to be available until the primary acquisition contract is signed;
- Additional Chinook—the delay in the FMR and FOC milestones relates to delayed delivery of Aircraft Survivability Equipment training and certification of the Crashworthy Pilot Seat;
- Battle Comm. Sys. (Land)—the further delay continues to relate to the need to clarify the forecast dates for FMR and FOC with the capability manager following Full Design Acceptance in December 2016;
- UHF SATCOM—FOC has been delayed as a result of FMR number 2 being rescheduled to January 2019; and

108 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, Overlander Light and Additional Chinook.

- LHD Landing Craft—the project has incurred further delay as final operational test and evaluation trials are yet to occur. The trials are currently anticipated to occur in the second quarter of 2018.

Figure 10: In-year (2016–17) schedule changes to achieving FOC



Note: Defence's PDSSs indicate that 14 of the 27 Major Projects Report projects did not record changes to their Final Operational Capability dates this year.

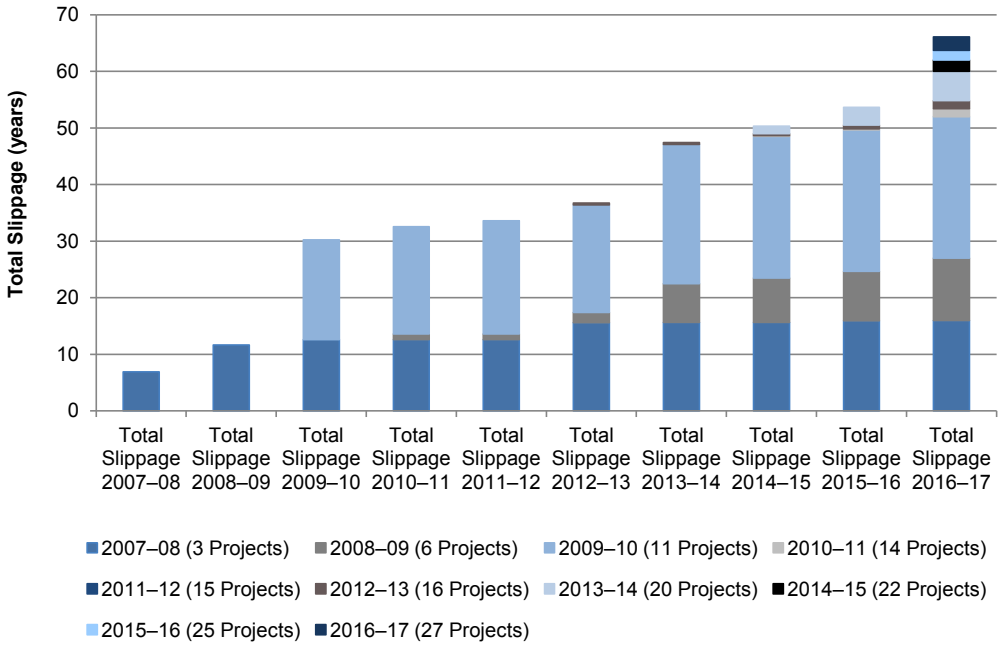
Source: ANAO analysis of the 2016–17 PDSSs.

Longitudinal schedule performance

2.44 Figure 11, below, shows the accumulated schedule slippage over time of the Major Projects included in the MPR reports from 2007–08 to 2016–17.[109] Table 11 provides the details of the specific projects included in the analysis. The figure shows that 24.2 per cent (16.0 years or 192 months) of the total schedule slippage across the Major Projects covered in the 2016–17 report (66.1 years or 793 months) is made up of the slippage from the three remaining projects reported in the 2007–08 Major Projects Report.[110]

2.45 Further disaggregation according to a project's Second Pass Approval date in Table 12, on page 54, shows that 54 per cent (2015–16: 69 per cent) of the total schedule slippage across the 2016–17 Major Projects is made up of projects approved prior to July 2005.

Figure 11: Longitudinal schedule slippage across years for projects in the 2016–17 MPR (in years)



Note 1: The total schedule slippage in 2016–17 across the 27 projects is 793 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 is expected to achieve FMR and MAA closure in quarter one 2018.

Note 2: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's analysis is Production Period Five.

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

109 Tables 4 and 5, on pages 12 and 13 respectively, report on the slippage for each project that has been in the MPR since 2007–08.

110 The three projects are ARH Tiger Helicopters, Bushmaster Vehicles and Collins RCS.

Table 11: 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
Joint Strike Fighter				✓	✓	✓	✓	✓	✓	✓
AWD Ships		✓	✓	✓	✓	✓	✓	✓	✓	✓
P-8A Poseidon								✓	✓	✓
MRH90 Helicopters		✓	✓	✓	✓	✓	✓	✓	✓	✓
Growler							✓	✓	✓	✓
MH-60R Seahawk					✓	✓	✓	✓	✓	✓
Overlander Medium/Heavy							✓	✓	✓	✓
LHD Ships		✓	✓	✓	✓	✓	✓	✓	✓	✓
Hawkei										✓
ARH Tiger Helicopters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Battlefield Airlifter							✓	✓	✓	✓
Bushmaster Vehicles	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overlander Light			✓	✓	✓	✓	✓	✓	✓	✓
Additional MRTT									✓	✓
CMATS										✓
ANZAC ASMD 2B			✓	✓	✓	✓	✓	✓	✓	✓
Additional Chinook				✓	✓	✓	✓	✓	✓	✓
HATS									✓	✓
Battle Comm. Sys. (Land)						✓	✓	✓	✓	✓
Collins RCS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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 12: Project slippage by project approval

Project	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/17 FOC date	No. of months slippage between Original FOC and 30/6/17 FOC date
Projects Approved pre July 2005			
ARH Tiger Helicopters	123	205	82
Bushmaster Vehicles	217	218	1
Collins RCS	88	195	109 [1]
Hw Torpedo	148	209	63 [1]
Collins R&S	165	260	99 [1]
ANZAC ASMD 2A	97	167	72 [1]
Sub Total – Projects Approved pre July 2005	**838**	**1 254**	**426** [1]
Percentage of Total – Projects Approved pre July 2005	**30%**	**36%**	**54%**
Projects Approved post July 2005			
Joint Strike Fighter	169	167	2 [1]
AWD Ships	131	163	35 [1]
P-8A Poseidon	71	95	24
MRH90 Helicopters	119	179	60
Growler	111	110	0 [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
Overlander Light	54	58	9 [1]
Additional MRTT	33	54	21
CMATS	102	130	28
ANZAC ASMD 2B	90	145	57 [1]
Additional Chinook	83	89	6
HATS	76	73	0 [1]
Battle Comm. Sys. (Land)	55	72	17
Maritime Comms	125	125	0
UHF SATCOM	111	120	9
BMS [2]	N/A	N/A	N/A
LHD Landing Craft	53	81	33 [1]
Sub Total – Projects Approved post July 2005	**1 933**	**2 266**	**367** [1]
Percentage of Total – Projects Approved post July 2005	**70%**	**64%**	**46%**
Total – All Projects With Slippage	**2 771**	**3 520**	**793** [1]

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

Note 2: 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 is expected to achieve FMR and MAA closure in quarter one 2018.

Source: ANAO analysis of the 2016–17 PDSSs.

Capability performance analysis

2.46 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.[111] 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[112] – and undertaking designated operations.

2.47 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.

2.48 Since the 2009–10 MPR, capability reporting[113] 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) was 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 involved '…making certain assumptions in forecasting achievements and is therefore subjective in approach…'.[114]

2.49 For example, for the LHD Landing Craft project, Defence predicted and reported that 99 per cent of elements of capability have a 'high level of confidence of delivery', and accordingly reported a predominantly 'green' capability pie chart graphic in the PDSS prepared for the 2015–16 MPR. However, as reported to the JCPAA on 17 March 2016 during public hearings, trials to test the ability to transport a M1A1 Main Battle Tank are required prior to the achievement of Final Operational Capability.[115]

- Subsequent trials conducted in May 2016 were unsuccessful. Carrying the M1A1 on the LHD Landing Craft requires the operation of the craft in an overload state. In consideration of the unsuccessful trials, the 2015–16 PDSS depicted that one per cent of capability for the LHD Landing Craft is 'under threat, considered manageable (Amber)', based on Defence's consideration of the landing craft's functional performance specification.

111 Defence Instructions (General), DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, November 2012, Annex B, p. B1.

112 Source 1: Department of Defence, *Interim Capability Life Cycle Manual*, April 2016, pp. 11–12.
Source 2: Department of Defence, DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, November 2012, paragraph 1, p. 1.

113 As per the 2016–17 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 2016–17 MPR Guidelines also note that the MPR may report on associated sustainment activities (where applicable).

114 ANAO Report No.17 2010–11, *2009–10 Major Projects Report*, November 2010, p. 35.

115 *Official Committee Hansard,* Joint Committee of Public Accounts and Audit Hearing, 17 March 2016, p. 5.

- Defence updated the JCPAA during public hearings on 31 March 2017, advising that: 'We were going to be doing trials in late 2016. We are now putting them back off. With the issues with the two LHDs at the moment, we will be putting that back off until we can actually resolve those, because you actually want to transit out the back of the ship in a docked position and we are not in that position right now to do that'.[116] The LHD Landing Craft PDSS prepared for the 2016–17 Major Projects Report now advises that these tests are not expected until the second quarter of 2018, and continues to report one per cent of capability 'Amber'. If the tests are successful, it is anticipated that Defence will produce a 100% green capability graphic to reflect increased LHD Landing Craft capability.

2.50 Over time, the JCPAA has sought the use of a more robust measure of capability performance. For example, in JCPAA Report 442, the Committee recommended:

> **Recommendation 7:**
>
> To improve the robustness of capability performance information, that the Australian National Audit Office and Defence Materiel Organisation consult as necessary and propose amendments to Section 5.1 and 1.2 in the 2014-15 MPR Guidelines, to:
>
> - Apply a more objective method to assessing capability performance; and
> - Distinguish capability achieved from capability yet to be achieved, capability unlikely to be achieved, and capability exceeded.
>
> ANAO and DMO should provide a specific proposal to the Committee preferably by the end of August 2014 in line with submission of the 2014-15 MPR Guidelines.[117]

2.51 Defence has not developed this measure, reporting that the difficulties relate to the varied nature of projects being managed, the inherent subjectivity of the content, and the lack of a system that tracks at a sufficient level of detail the progress of inputs to capability.[118]

2.52 Noting with concern the ANAO's assessment that delivery of capability estimates were in some cases overly optimistic, the Committee recommended that Defence further review the procedure for development of expected capability estimates.[119]

---

116 Mr K Gillis, *Official Committee Hansard,* Joint Committee of Public Accounts and Audit Hearing, 31 March 2017, p. 14.

117 JCPAA Report 442, Review of the 2012–13 Defence Materiel Organisation Major Projects Report, May 2014, pp. 37–39.

118 Source 1: Ms S McKinnie, *Official Committee Hansard,* Joint Committee of Public Accounts and Audit Hearing, 27 February 2015, p. 10.
Source 2: Mr H Dunstall, *Official Committee Hansard*, Joint Committee of Public Accounts and Audit Hearing, 27 February 2015, p. 10.
Source 3: The CEO DMO Mr Warren King advised the JCPAA that 'Landing on a method to have an easily auditable statement of what the capability is that we have delivered is really a complex issue and still there is, I think, work to be done'. Commonwealth of Australia, JCPAA, *Defence major projects report 2012–13*, 20 March 2014, pp. 1–3.

119 JCPAA Report 458, *Defence Major Projects Report (2014-15)*, May 2016, pp. 48–49.

Recommendation 2:

To ensure consistency with project level risk information and to improve reliability, the Committee recommends that the Department of Defence review the procedure for development of expected capability estimates for future Major Projects Reports.[120]

2.53 Defence has not yet developed an alternative method of capability assessment which would enable an improvement in capability reporting in the MPR, or put a proposal to the ANAO.

2.54 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.'[121]

Modified method of capability reporting

2.55 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.

2.56 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 project progress than an end-state prediction.

Capability Delivery Progress and Project Maturity

2.57 Figure 12, below, sets out each project's Capability Delivery Progress against Project Maturity.[122] It shows that Capability Delivery Progress lags Project Maturity for the majority of projects (16 of 27). 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.

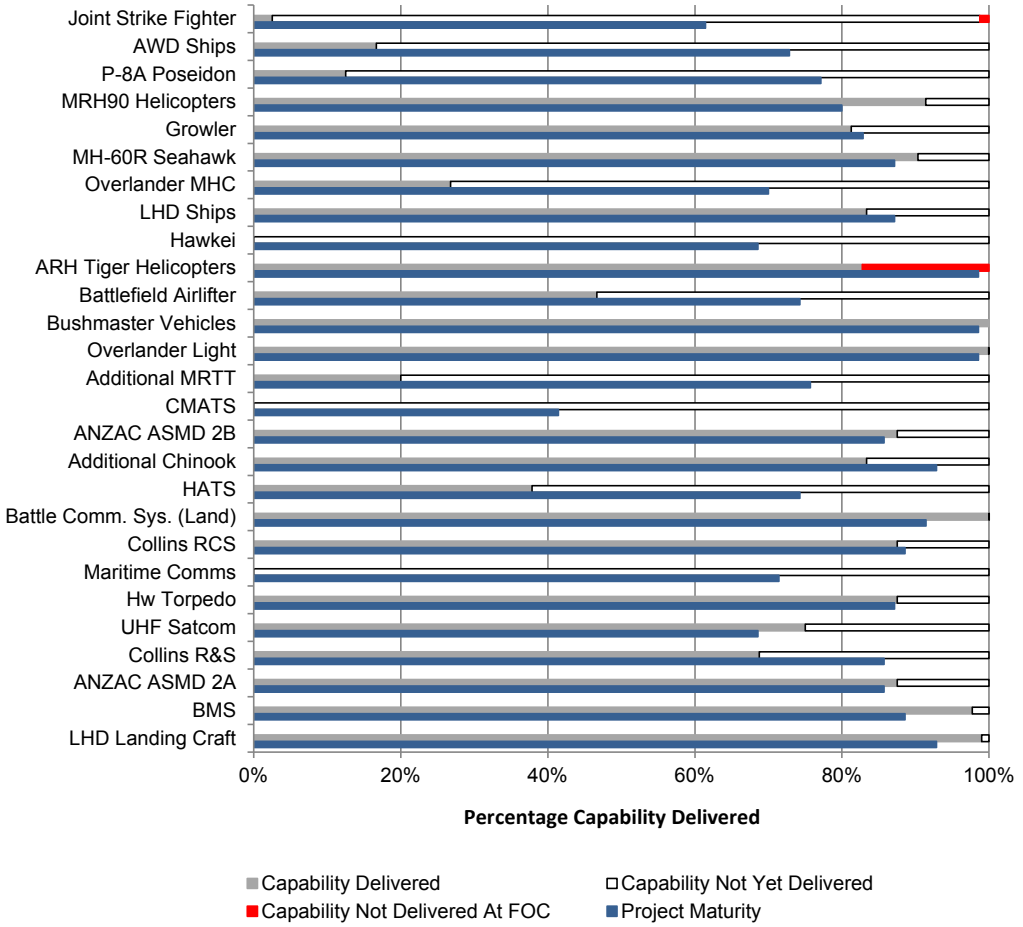
2.58 Figure 12 also shows that Capability Delivery Progress lags Project Maturity by 20 per cent or more in 10 projects, and for six of these, Capability Delivery Progress lags by 50 per cent or more.

120 JCPAA Report 458, *Defence Major Projects Report (2014-15)*, May 2016, p. 49.

121 JCPAA, Report 468, *Defence Major Projects Report (2015–16)*, October 2017, Recommendation 1, p. vii.

122 Refer to footnote 84 for more detail.

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



Note: ANZAC ASMD 2B's Project Maturity is based on the progress of the lead ship, not on the current eight ship program.

Source: ANAO analysis of the 2016–17 PDSSs.

2.59 As noted in paragraph 2.16, Defence's project maturity framework attributes approximately 50 per cent of total project maturity at Second Pass Approval.[123] 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.

123 Refer to footnote 85 for more detail.

2.60 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 progress. In respect of the three projects that show no capability delivery at 30 June 2017, progress is as follows:

- Hawkei—this project is progressing through design processes and Low Rate Initial Production was approved in August 2017;
- CMATS— this project is in early stages of procurement, and is progressing through early design processes ahead of signing the primary acquisition contract. Additionally, in August 2017 this project was designated a Project of Concern; and
- Maritime Comms—this project is progressing through design reviews prior to commencing ship installations.

2.61 Further, Figure 12 indicates that:

- three projects are still to deliver any of their capability (refer to paragraph 2.60 for detail);
- 19 projects are still to deliver part of their capability;
- three projects, Bushmaster Vehicles, Overlander Light and Battle Comm. Sys. (Land), have delivered essentially all of their capability with only minor items remaining;
- one project, Joint Strike Fighter, will not deliver one element at FOC (as advised by Defence); and
- one project, ARH Tiger Helicopters, had not delivered all of its intended capability at FOC, and remediation has been ongoing since FOC.

Part 2. Defence Major Projects Report

Secretary's foreword

I am pleased to present the 2016-17 Major Projects Report (MPR), which reports on 27 Defence major acquisition projects. This is the tenth MPR and the second to be produced under 'One Defence'.

Defence major acquisition equipment projects and Defence expenditure in general, continue to be the subject of significant parliamentary and public interest.

The MPR is produced annually in the interests of transparency and accountability. It provides a financial year snapshot of the progress on the most expensive and complex acquisition projects.

The 2016-17 year has been one of further challenge and change for the major project environment with the implementation of the First Principles Review (FPR).

During the two year implementation period there have been major achievements visible across Defence. Out of the 75 agreed recommendations, Defence has delivered 69, ranging from simplifying committee structures to improving capability life cycle processes and streamlining service delivery across Defence.

There is still a lot of work to do to embed the 'One Defence' reforms as business as usual, however Defence is committed to ensure the FPR intent is fully realised.

During this financial year, Defence continued to deliver the work outlined in the Integrated Investment Program (IIP). Capability, Acquisition and Sustainment Group (CASG) are introducing a balanced matrix structure so that the Group can become a more agile and flexible organisation. CASG has introduced the application of the Smart Buyer concept to Gate Zero considerations in the Capability Life Cycle, improving the way the Group manages risk and informing the project execution strategy.

The new Defence Investment Approval Process was agreed by Government in July 2017. Capability Stream and program level submissions will be used to drive prioritisation within the investment portfolio, achieve a joint force by design and enhance Government's strategic view of Defence's capability plans. The new process will also improve the efficiency of Defence approvals by ensuring an appropriate approval authority and pathway through Government is selected, rather than the 'one-size fits all' approach used in the past.

At 30 June 2017, CASG was managing 185 major capital equipment acquisition projects in support of the Australian Defence Force (ADF) with a total value of $105.9 billion.

Having met the required capability, 11 major capital equipment acquisition projects were closed during the 2016-17 financial year. On average, they were delivered nine per cent under the approved budget.

The projects reported on this year have a combined total approved budget of $62 billion and a total in-year budget of $4.3 billion.

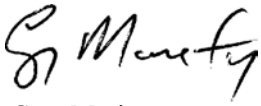
Within the 2016-17 MPR, two projects have been added and AIR 5402 (Air to Air Refuelling Capability) has been removed, noting it achieved Final Operational Capability in July 2016.

Of note in the 2016-17 financial year were the following project events:

- AIR 6000 Phase 2A/B Joint Strike Fighter (JSF) — Australia's first two F35-A Joint Strike Fighters made their first public appearance in Australia at the 2017 Australian International Airshow.
- AIR 7000 Phase 2 Maritime Patrol Aircraft (Boeing P-8A Poseidon) — In November 2016, Australia's newest addition to the Air Force, the P-8A Poseidon touched down in Australia.
- AIR 8000 Phase 2 Battlefield Airlift (Caribou Replacement) — In December 2016, the Chief of Air Force declared Initial Operating Capability (IOC) for the C-27J Spartan aircraft fleet.
- SEA 4000 Phase 3 Air Warfare Destroyer (AWD) — In December 2016, Second Guided Missile Destroyer (DDG) NUSHIP *Brisbane* was launched in Adelaide.
- SEA 4000 Phase 3 Air Warfare Destroyer (AWD) — In March 2017, the First Guided Missile Destroyer (DDG) NUSHIP *Hobart* successfully completed acceptance sea trails.

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

I would like to take the opportunity to thank the Auditor-General, Mr Grant Hehir, and his staff for their contribution to the overall report. I also commend the previous Secretary, Mr Dennis Richardson and the various Defence staff in bringing this report together.



Greg Moriarty
Secretary
Department of Defence
4 January 2018

First Principles Review – 'One Defence' Reform

The 2015 First Principles Review (FPR) recommended substantial change across Defence to address the problem of a proliferation of structures, processes and systems with unclear accountabilities that were adversely affecting outcomes. The Government agreed, or agreed in principle, to 75 of the 76 recommendations and many of these have significantly impacted the major project business environment.

Implementation of recommendations of the FPR began in July 2015 with the disbandment of the Defence Materiel Organisation and the establishment of the Capability Acquisition and Sustainment Group (CASG) within the Department of Defence.

At the end of the two year implementation period, in June 2017, Defence has delivered 69 of the agreed 75 recommendations. These recommendations have ranged from simplifying committee structures to improving our capability life cycle processes and streamlining service delivery across Defence.

Key reform initiatives implemented during 2016-17 that illustrate how Defence is becoming a significantly more agile and efficient organisation that builds capability through partnerships, include:

- Introducing a new end-to-end capability development and management life cycle, which simplifies and reduces the time taken for capability decision-making. For example, the average length of a Defence submission to Government has reduced from 70 pages to 20 pages, and the average period of time for a submission to be approved by Government has reduced from 16 weeks to eight weeks. Partnerships with central agencies has been a key part of this process, with the Department of Finance and the Department of the Prime Minister and Cabinet now represented on Defence's Investment Committee;
- Simplifying commercial policies and practices, making it easier for Industry to engage with Defence. For example, the Defence Procurement Policy Manual has reduced from 483 pages to 62 pages; and the number of mandatory Defence procurement requirements has dropped by more than 80 per cent, from 290 to 53; and
- Engaging industry earlier in the capability life cycle, and recognising industry as a key partner in the delivery of Defence capability. This has been supported through implementing initiatives in the 2016 Defence Industry Policy Statement, including the Centre of Defence Industry Capability, the Defence Innovation Hub, and the Defence Innovation Portal.

On 1 July 2017, Defence moved into the next phase of the reform process, ensuring that the remaining six recommendations are finalised and that the FPR intent is absorbed as business as usual for the organisation. To ensure that the 'One Defence' reforms continue their intent, Defence will continue the Implementation Committee and Oversight Board for a further 12 months. In

addition, an evaluation framework will be implemented in 2017-18 to assess the effectiveness of the reforms.

Reform and Support Activities

A number of reform activities, most stemming from the FPR implementation, support the work of Defence, in particular CASG, helping to ensure the efficient and effective delivery of acquisition and sustainment projects.

Capability Life Cycle

Defence has redesigned its organisational and procedural approach to capability development. The new Capability Life Cycle is defined as the core business process of Defence, since it is a critical enabler to Defence delivering against its required outcomes. It is an end-to-end process that functions from initiation (concept) to disposal. It includes two main components:

- Capability development - Defence works with Government to determine capability requirements aligned with strategic direction; and
- Capability delivery - Defence acquires, sustains and disposes of Defence capabilities.

The new Capability Life Cycle includes improved approval process for capability submissions. Since the new Capability Life Cycle was introduced, Defence has already achieved a significant increase in the number of submissions approved by Government, together with substantial reductions in the average length of approval submissions; and the average length of time for a submission to be approved by Government.

As part of the new Capability Life Cycle, Defence has also adopted a new Smart Buyer decision-making framework, which has dramatically reduced the number and nature of artefacts governing procurement in Defence. The framework enables capability managers and project teams to identify key project risks and, based on those risks, develop tailored project execution strategies.

Defence Investment Approval Process

The new Defence Investment Approval Process was agreed by Government in July 2017 to support the new Capability Life Cycle as directed by FPR. The new Defence Investment Approval Process includes two key differences from the previous capital investment approval process, being:

1. *A risk based approach to Defence investment approvals* – the new process focusses on strategic Government decision making and risk based tailoring using the Smart Buyer decision making framework, instead of focussing solely on the financial thresholds set out in the Budget Process Operational Rules.

2. *Capability stream and program level submissions* – the new process will see Defence bringing forward submissions for Government consideration using either a capability stream or program level approach where appropriate, rather than exclusively through individual project approvals.

Capability Stream and program level submissions will be used to drive prioritisation within the investment portfolio, achieve a joint force by design and enhance Government's strategic view of Defence's capability plans. The submissions will also be used to facilitate discussion of the key strategic issues for the stream, addressing such issues as political, strategic, workforce, Australian industry and whole-of-Government considerations. They will also assist in identifying interdependencies that may provide scope for more efficient spending.

As envisioned in the FPR, bringing forward capability program and stream level submissions will also reduce the duration of the pre-acquisition phase, and relieve pressure on the volume of Government approvals. The new process will also improve the efficiency of Defence approvals by ensuring an appropriate approval authority and pathway through Government is selected, rather than the 'one-size fits all' approach used in the past.

Smart Buyer

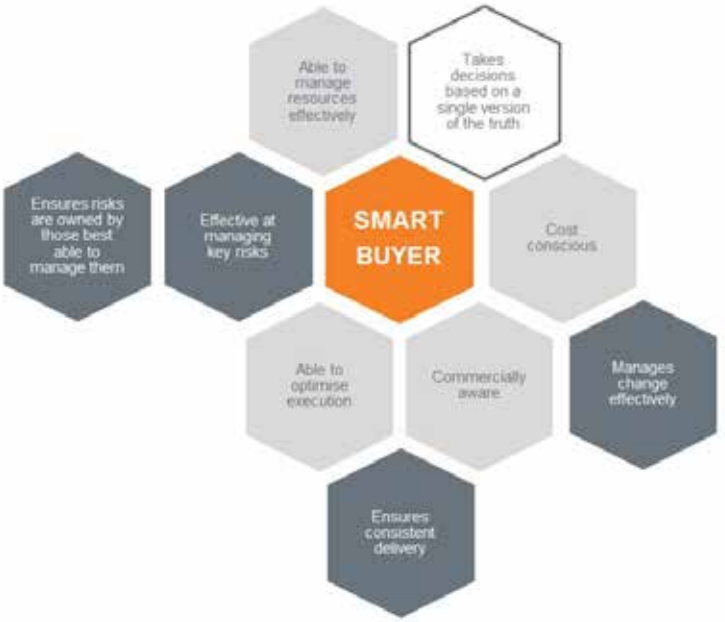
As part of the FPR it was concluded that 'One Defence' needed to become a Smart buyer. Central to Smart Buyer is a decision-making framework which enables Capability Managers and project teams to identify and analyse key project risks and drivers and use that analysis to develop tailored Project Execution Strategies (PES).

The decision-making framework has been designed for use in acquiring and sustaining Defence capabilities by CASG, Chief Information Officer Group (CIOG), Estate and Infrastructure Group (E&IG) and Strategic Policy and Intelligence Group (SP&IG).

The focus of Smart Buyer for 2016-17 Financial Year has been setting projects up for success at Gate Zero. This focus has made the quantifying of benefits difficult until the Smart Buyer Projects pass through Gate Two in 12-24 months and comparisons of time and cost against historical baselines can be made.

Feedback from workshop participants, making up the 44 Defence Capital Projects that have been through the process this financial year, has been overwhelmingly positive on Smart Buyer improving environmental understanding and subsequent strategy development. Plans are underway to continue to expand Smart Buyer across the Capability Life Cycle over the next 12-24 months with better leveraging of Industry a priority.

Smart Buyer Attributes



Systems Program Office Reform

The Systems Program Office (SPO) Reform project was initiated to answer FPR Recommendation 2.4 - *Examine each SPO to determine where each fits within the smart buyer function, the most appropriate procurement model, and achieving value for money*.

At commencement of the reform process, CASG had 78 SPOs by definition; this number has since been reduced to 64 through SPO consolidation. Two SPOs underwent early review in the 2015-16 Financial Year to test the process, and the remaining 62 SPOs were scheduled for review over the period between August 2016 and September 2017. As at 30 June 2017 the project was on track with 46 reviews completed.

Project deliverables consist of a set of high level recommendations for each SPO regarding optimal workforce makeup, supplier engagement models, and transition arrangements. As reviews are completed, the focus of the SPO Reform Project will shift to the implementation phase. As at 30 June 2017, six SPOs were considered fully reformed with reform commencing in a further 40 SPOs.

Centres of Expertise Design and Implementation

The Centres of Expertise (CoE) Design and Implementation Project was raised to deliver FPR Recommendation 10.5 — *Centres of Expertise established within Capability Acquisition and Sustainment Group*.

The design of CASG's CoE commenced in January 2016 with a range of models considered. Following endorsement of the balanced matrix approach in September 2016, CoE work has been aligned to this model. In a balanced matrix structure, Domains (project/SPOs) focus on "what and when" and CoEs focus on the "how and who". The functional stream will provide suitably qualified and experienced staff into the Domain environment so CASG can effectively and efficiently deliver capability and sustainment.

To commence operation, CoEs required confirmation of: their roles and responsibilities; the services to be provided; the assignment of staff; and, a continuing implementation plan beyond March 2017. CoEs completed all work required for establishment by the end of March 2017 and commenced operating in April 2017.

CASG has six CoEs: Program Management, Engineering and Technical, Material Logistics, Commercial, Corporate Performance, and Decision Support.

CASG intends the CoEs to achieve full maturity over the next two years to March 2019.

Risk Management Reform

In December 2016, as the FPR Reform Program was nearing completion, DEPSEC CASG initiated a review into the current state of risk management practice across CASG. The outcome of the review was a strategy to remodel the management of risk in Acquisition and Sustainment in Defence to enable CASG to respond to growing Defence capability delivery demands. A DEPSEC CASG Directive was issued in May 2017 establishing a CASG Risk Management Reform Program to implement a CASG risk management model that is situated within Defence's risk management framework. This will strengthen risk management practice and embed risk-based decision making through Defence's acquisition and sustainment business, aligns risk reporting, and professionalises the workforce. The reform program will be implemented over two years.

Cost Estimation and Management

A Total Cost of Ownership model has been established to support the capture of the full costs of ownership throughout the life of an asset or system. This model captures:

- Development of the capability proposal to bring the project forward to Government for approval;
- Acquisition costs of the asset or system;

- Operating and Sustainment costs of the asset or service, including the costs of bringing the asset or system into service; and
- Costs to dispose of the asset or system.

The establishment of the CoEs further supports improvements in cost estimation and forecasting. This includes the development of guidance, tools, training, professionalisation and career pathways for cost estimation and forecasting practitioners. This will ensure that our people are appropriately skilled to not only develop robust cost estimates, but to support the analysis of project and product delivery (capability delivery) against the Government approved scope, budget, and schedule. This work is due to be completed by the end of June 2019, establishing a strong foundation for cost estimation and forecasting.

Independent Assurance Reviews

Independent Assurance Reviews (IARs) are an internal assurance process intended to improve project outcomes and ensure Defence can provide high quality and reliable advice to the Defence Senior Leadership Group and Government regarding the health and outlook of Defence's major capital equipment projects. Defence senior executives, along with highly experienced external members, chair IAR Boards to provide a collegial assessment of project performance and planning against the Government approved business case.

An assurance review for an acquisition project will normally be scheduled to occur following completion of the Smart Buyer process or in the lead up to key decision points or major project milestones, although one may also be scheduled in response to direction received from Government or Defence management.

IARs are about inclusive consultation and planning for success. They provide Defence with assurance that projects will deliver against Government approved objectives. In 2016-17, approximately 100 projects completed the IAR program, providing an opportunity for senior management to offer strategic guidance and for Project Managers and Product Managers to share successes and seek support with the resolution of issues.

Information and Communications Technology

CASG partners with CIOG, which is responsible for delivering information and communications technology infrastructure and services for Defence to ensure CASG receives trusted business centred information services.

The focus this year has been on the embedding and maturing of the Decision Support CoE as part of the wider reform within CASG. The Decision Support CoE ensures a business-like, customer service focused information environment that provides information transparency and situational awareness to support effective business decision making.

Performance Analysis

This section provides a high level performance overview of the projects included in the 2016-17 MPR. The MPR covers 27 of the 185 major projects as at 30 June 2017, so caution must be applied when extrapolating any analysis to the entirety of Defence's acquisition effort. Projects in the MPR are not necessarily representative of all Defence projects as the 27 MPR projects are generally the largest by budget, at the time of inclusion and, in general, involve a higher level of complexity.

CASG managed 185 major capital equipment acquisition projects with a total value of $105.9 billion at 30 June 2017.

11 major capital equipment acquisition projects were closed during the year having met the required capability, on average, nine per cent under the Government approved budget.

Of the 27 projects included in this report, 25 projects have been carried over from last year's report.

Two projects are new inclusions in this report:

- AIR 5431 Phase 3 – Civil Military Air Management System (CMATS)
- LAND 121 Phase 4 – Protected Mobility Vehicles – Light (PMV-L) (Hawkei)

AIR 5402 – Air to Air Refuelling Capability was removed from the report having achieved Final Operational Capability in July 2016.

Appendix 1 lists all the projects that have been removed from the report since its inception, the reasons for their removal, and their expenditure to date at 30 June 2017.

For each project which has been removed, the lessons learned are included at Appendix 2.

Projects of Concern

Projects or sustainment activities identified as a Project of Concern have very significant technical, cost or schedule difficulties that are beyond the normal project team management. As at 30 June 2017, there were two projects in this year's report that are managed under the Projects of Concern regime:

AIR 9000 Phase 2/4/6 - Multi-role Helicopter, and

SEA 4000 Phase 3 - the Air Warfare Destroyer Build

Entry to and exit from the list of Projects of Concern is decided by the Minister for Defence either at the recommendation of the Deputy Secretary CASG or at the Minister's own instigation.

Projects are removed from the list through project remediation or project contract cancellation with the approval of the Minister.

Projects of Concern receive a higher level of oversight and management and undertake increased reporting to Government.

Since 2008, 23 projects, with a total value of $32.6 billion, have been managed this way. As at 30 June 2017, the four active Projects of Concern had a total value of $13 billion.

In 2016-17, JP 2086 Phase 1 Mulwala Redevelopment Project was removed after successful project remediation.

AIR 5431 Phase 3 Civil Military Air Management System commenced reporting under the Projects of Concern regime in August 2017 following contract negotiations taking longer than expected, costs increasing significantly and the agreed Initial Operational Capability and Final Operational Capability dates not considered achievable.

Further, since 30 June 2017, CN10 Collins Class Submarine Sustainment was removed as a project of concern and AIR 5431 Phase 1 Deployable Defence Air Traffic Management and Control System has been added.

Table 1: Projects of Concern at 30 June 2017

Project Name	Project Number	Date Added
Collins Class Submarine Sustainment	CN10[124]	November 2008
Multi-Role Helicopter	AIR 9000 Phase 2/4/6	November 2011
Air Warfare Destroyer Build	SEA 4000 Phase 3	June 2014
Australian Defence Satellite Communications Terrestrial Enhancement	JP 2008 Phase 3F	September 2014

Materiel Scope

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.

For security reasons this report cannot identify all individual specifications for each of the projects.

However, each Project Data Summary Sheet has a percentage breakdown on how the project is tracking against its particular suite of capability elements which is supported by appropriate evidence.

A summary of the key characteristics of each project is presented in Table 2 and illustrates the variety, complexities and scale of the acquisitions.

124 This is a sustainment product but is managed as a project of concern.

Table: 2 Project characteristics

Project Number	Project	First reported in MPR of	Customer	Purpose of Capability [1]	Level of Development [2]	Acquisition Category* [3]	Pre-/Post-Kinnaird [4]	Project Stage	Prime Systems Integrator
AIR 6000 Phase 2A/2B	Joint Strike Fighter	2010-11	Air Force	Replacement	Developmental	I	Post	Enter Contract	US Government
SEA 4000 Phase 3	AWD Ships	2008-09	Navy	New	AMOTS	I	Post	Detailed Design Review	AWD Alliance
AIR 7000 Phase 2B	P-8A Poseidon	2014-15	Air Force	Replacement	MOTS	II	Post	Integration and Test	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	Integration and Test	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	Detailed Design Review	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	Preliminary Design Review	Thales Australia
AIR 87 Phase 2	ARH Tiger Helicopters	2007-08	Army	New	AMOTS	II	Pre	Project Completion	Airbus Group Australia Pacific
AIR 8000 Phase 2	Battlefield Airlifter	2013-14	Air Force	Replacement	MOTS	II	Post	Integration and Test	US Government
LAND 116 Phase 3	Bushmaster Vehicles	2007-08	Army	Replacement	AMOTS	III	Pre	MAA Closure	Thales
LAND 121 Phase 3A	Overlander Light	2009-10	Army	Replacement	AMOTS	II	Post	Acceptance into Service	Defence
AIR 7403 Phase 3	Additional MRTT	2015-16	Air Force	New	AMOTS	II	Post	Integration and Test	Airbus Defence and Space
AIR 5341 Phase 3	CMATS	2016-17	Air Force	Replacement	Developmental	I	Post	Second Pass Approval	Airservices Australia
SEA 1448 Phase 2B	Anzac ASMD 2B	2009-10	Navy	Upgrade	Developmental	I	Post	Initial Materiel Release	ANZAC Alliance
AIR 9000 Phase 5C	Additional Chinook	2010-11	Army	Replacement	MOTS	III	Post	Final Materiel Release	US Government
JP 9000 Phase 7	HATS	2015-16	Navy	Replacement	AMOTS	II	Post	Detailed Design Review	Boeing Defence Australia
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	2012-13	Army	Replacement	MOTS	III	Post	Acceptance Into Service	Defence
SEA 1439 Phase 4A	Collins RCS	2007-08	Navy	Upgrade	AMOTS	IV	Pre	Initial Materiel Release	Defence
SEA 1442 Phase 4	Maritime Comms	2014-15	Navy	Upgrade	AMOTS	II	Post	Preliminary Design Review	Leonardo MW
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	Initial Materiel Release	ANZAC Alliance
LAND 75 Phase 4	Battle Management System	2015-16	Army	New	AMOTS	II	Post	Final Materiel Release	Defence
JP 2048 Phase 3	LHD Landing Craft	2013-14	Navy	Replacement	AMOTS	III	Post	Final Materiel Release	Navantia

*** See appendix 3 for further information**

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 5 has full definition of levels of development.
3 - The Defence 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.

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 2017. They 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 sought 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 2016-17 Defence has seen a reduction in the number of performance measures across the projects with 241 in 2015-16 to 200 in 2016-17. This is mainly due to the revised representation of the performance measures within the Materiel Acquisition Agreement for AIR 5349 Phase 3 (Growler) and AIR 7000 Phase 2 (PA-8 Poseidon).

Of the 200 measures across the 27 projects in this year's report:

- 98.4 per cent of measures are likely to be met (green);
- 1.5 per cent of measures are under threat (amber); and
- 0.6 per cent of measures are considered unlikely to be met (red).

For further detail on the Capability Delivery Performance for individual projects please see Section 4 – Materiel Capability Delivery Performance in the Project Data Summary Sheets.

Budget

The Defence Chief Finance Officer provides financial assurance that individual projects included in this report will deliver the remaining intended scope within the 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'. From 1 July 2010, all major Defence equipment acquisition projects have been managed using out-turned budgets. 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.

In accordance with Australian Accounting Standards Board, Accounting Standard 101 Presentation of Financial Statements paragraph 27, Defence's financial statements are prepared, except for cash flow information, using the accrual basis of accounting. The financial data provided within the MPR continues to be prepared on an accrual basis.

Commonwealth Departments are appropriated on a cash basis and Defence manages its capital programs on a cash basis in order to achieve a balanced cash outcome. Accordingly, all financial data related to projects and Defence's capital programs provided within the Defence Portfolio Budget Statements, Portfolio Additional Estimates Statements, and Annual Report, continue to be prepared on a cash basis.

An independent agreed-upon procedure was conducted on a sample of 5 of the 27 MPR projects and found no adverse factual findings that would indicate issues with the project financial assurance statements. This approach was supported by the ANAO.

Table 3 lists the 27 projects by total approved budget from highest to lowest.

The total in-year budget (2016-17) for all the projects listed is $4.3 billion and the total approved budget is $62.0 billion.

These projects represent 15 per cent by number, of the projects in the approved major capital investment program, and 59 per cent by value, so caution must be applied when extrapolating analysis to the entirety of Defence's acquisition effort.

Table 4 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 3: List of 2016-17 selected projects by total approved budget

Project Number	Project Name	Project Name Abbreviation	2016-17 In year Budget $m	Total Approved Project Budget $m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter	613.4	16004.9
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships	674.0	9090.1
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System (Boeing P-8A Poseidon)	P-8A Poseidon	1108.6	5262.5
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	175.5	3733.8
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	165.8	3495.0
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk	141.0	3462.5
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	670.3	3363.5
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships	18.2	3091.9
LAND 121 Phase 4	Protected Mobility Vehicle – Light	Hawkei	55.4	1951.1
AIR 87 Phase 2	Armed Reconnaissance Helicopter	ARH Tiger Helicopters	1.1	1867.8
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	60.7	1406.7
LAND 116 Phase 3	Bushmaster Protected Mobility Vehicle	Bushmaster Vehicles	10.3	1250.6
LAND 121 Phase 3A	Field Vehicles and Trailers	Overlander Light	58.6	1017.6
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	138.2	855.5
AIR 5431 Phase 3	Civil Military Air Management System	CMATS	40.8	730.7
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	Anzac ASMD 2B	42.4	678.6
AIR 9000 Phase 5C	Additional Medium Lift Helicopters	Additional Chinook	33.6	637.8
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS	108.6	474.2
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land)	28.0	464.3
SEA 1439 Phase 4A	Collins Replacement Combat System	Collins RCS	2.5	450.4
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	61.7	432.1
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo	8.6	428.0
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	11.6	420.5
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	6.6	411.7
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	Anzac ASMD 2A	14.3	386.7
LAND 75 Phase 4	Battle Management System	BMS	32.9	369.1
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	0.0	236.8
Total			**4,282.7**	**61,973.3**

Table 4: Total budget status for each project[125]

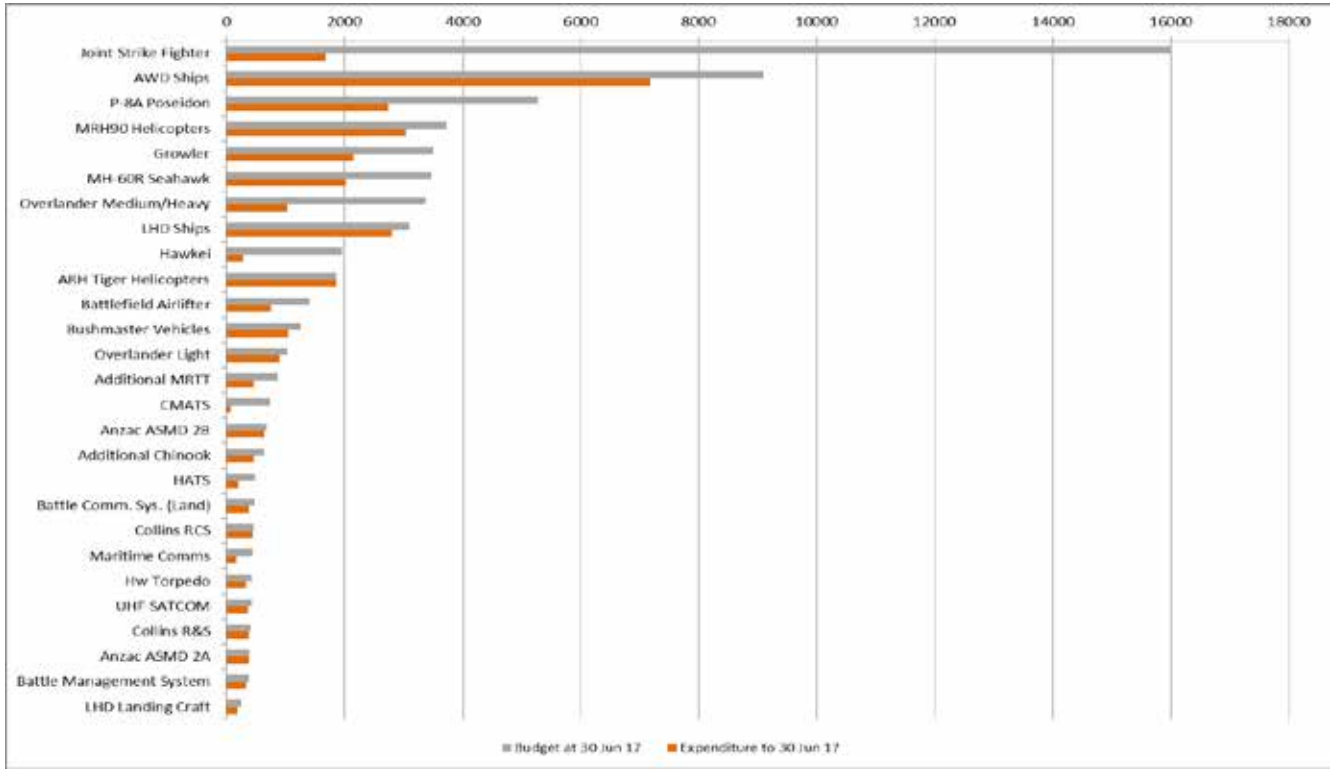
Project Number	Project	(a) Government Approved Budget $m	(b) Price Indexation $m	(c) Foreign Exchange Variation $m	(d) Scope Changes $m	(e) Transfers $m	(f) Budgetary Adjustments $m	(g) Budget Cost Savings $m	((f+g/a)) Net Variation %	(a+b+c+d+e+f+g) Current Budget $m
AIR 6000 Phase 2A/B	Joint Strike Fighter	2751.6	351.0	2389.7	10515.4	0.0	-2.9	0.0	-0.1%	16004.8
SEA 4000 Phase 3	AWD Ships	7207.4	1173.2	-380.1	0.0	-109.9	1199.5	0.0	16.6%	9090.1
AIR 7000 Phase 2B	P-8A Poseidon	3637.4	20.5	368.7	1295.4	-38.0	0.0	-21.7	-0.6%	5262.3
AIR 9000 Phase 2/4/6	MRH90 Helicopters	957.2	679.8	-261.3	2597.1	-239.0	0.0	0.0	0.0%	3733.8
AIR 5349 Phase 3	Growler	1155.3	0.0	918.1	1789.4	0.0	-367.9	0.0	-31.8%	3494.9
AIR 9000 Phase 8	MH-60R Seahawk	3029.6	0.1	471.9	0.0	0.0	-39.2	0.0	-1.3%	3462.4
LAND 121 Phase 3B	Overlander Medium/Heavy	2549.2	0.0	102.1	28.0	0.0	684.2	0.0	26.8%	3363.5
JP 2048 Phase 4A/4B	LHD Ships	2923.9	428.4	-304.1	34.4	9.3	0.0	0.0	0.0%	3091.9
LAND 121 Phase 4	Hawkei	1859.4	0.4	5.9	85.6	0.0	0.0	0.0	0.0%	1951.3
AIR 87 Phase 2	ARH Tiger Helicopters	1584.0	418.2	121.6	0.0	-84.3	-171.7	0.0	-10.8%	1867.8
AIR 8000 Phase 2	Battlefield Airlifter	1156.5	0.0	250.2	0.0	0.0	0.0	0.0	0.0%	1406.7
LAND 116 Phase 3	Bushmaster Vehicles	295.0	124.6	-1.1	832.2	0.0	0.0	0.0	0.0%	1250.7
LAND 121 Phase 3A	Overlander Light	3237.7	0.0	-33.6	362.7	-2549.2	0.0	0.0	0.0%	1017.6
AIR 7403 Phase 3	Additional MRTT	681.9	0.0	-9.3	187.7	0.0	-4.8	0.0	-0.7%	855.5
AIR 5431 Phase 3	CMATS	731.4	0.0	-0.7	0.0	0.0	0.0	0.0	0.0%	730.7
SEA 1448 Phase 2B	Anzac ASMD 2B	248.8	76.1	-9.6	214.7	148.7	0.0	0.0	0.0%	678.7
AIR 9000 Phase 5C	Additional Chinook	637.6	46.9	-46.7	0.0	0.0	0.0	0.0	0.0%	637.8
JP 9000 Phase 7	HATS	488.6	2.4	-12.0	0.0	-4.8	0.0	0.0	0.0%	474.2
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	436.4	0.0	26.9	0.0	0.0	0.0	0.0	0.0%	463.3
SEA 1439 Phase 4A	Collins RCS	455.3	56.5	-59.6	0.0	-0.9	-0.8	0.0	-0.2%	450.5
SEA 1442 Phase 4	Maritime Comms	385.7	0.0	46.4	0.0	0.0	0.0	0.0	0.0%	432.1
SEA 1429 Phase 2	Hw Torpedo	238.1	99.4	-123.7	213.3	1.0	-0.2	0.0	-0.1%	427.9
JP 2008 Phase 5A	UHF SATCOM	460.9	18.0	-40.5	0.0	0.0	0.0	-18.0	-3.9%	420.4
SEA 1439 Phase 3	Collins R&S	72.0	74.4	-6.0	310.3	-38.3	-0.8	0.0	-1.1%	411.6
SEA 1448 Phase 2A	Anzac ASMD 2A	449.0	101.3	-3.6	0.0	-159.8	-0.1	0.0	0.0%	386.8
LAND 75 Phase 4	BMS	319.0	0.0	41.6	8.5	0.0	0.0	0.0	0.0%	369.1
JP 2048 Phase 3	LHD Landing Craft	236.4	0.1	8.6	-0.7	-7.7	0.0	0.0	0.0%	236.7
	Total	**38185.3**	**3671.3**	**3459.8**	**18474**	**-3072.9**	**1295.3**	**-39.7**	**-7.2%**	**61973.3**

125 Figures in tables are rounded to one decimal place. Discrepancies in tables and Project Data Summary Sheets between totals and sums of components are due to rounding.

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.

Figure 1: Comparison of total MPR project budget and expenditure as at 30 June 2017 ($m)



Overall, there was a total in-year budget underspend of $666.5 million against the 2016-17 Portfolio Budget Statement and $145.6 million against the 2016-17 Final Plan.

Of the 27 projects, eight overspent against the final plan while 18 projects had underspends. A summary of in-year project budget expenditure against the Portfolio Budget Statements and the Portfolio Additional Estimate Statements is shown in Table 5.

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 5: 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	725.7	644.2	613.4	745.3	19.6	131.9	21.5%
SEA 4000 Phase 3	AWD Ships	725.5	675.7	674.0	532.7	-192.8	-141.3	-21.0%
AIR 7000 Phase 2B	P-8A Poseidon	1,046.8	1,089.6	1,108.6	1,135.0	88.2	26.4	2.4%
AIR 9000 Phase 2/4/6	MRH90 Helicopters	174.4	180.8	175.5	104.4	-70.0	-71.1	-40.5%
AIR 5349 Phase 3	Growler	242.0	157.4	165.8	168.2	-73.8	2.4	1.4%
AIR 9000 Phase 8	MH-60R Seahawk	230.0	183.9	141.0	123.7	-106.3	-17.3	-12.3%
LAND 121 Phase 3B	Overlander Medium/Heavy	685.6	681.6	670.3	701.1	15.5	30.8	4.6%
JP 2048 Phase 4A/4B	LHD Ships	19.5	32.9	18.2	12.6	-6.9	-5.6	-30.8%
LAND 121 Phase 4	Hawkei	95.2	55.8	55.4	24.3	-70.9	-31.1	-56.1%
AIR 87 Phase 2	ARH Tiger Helicopters	3.3	3.2	1.1	1.0	-2.3	-0.1	-9.1%
AIR 8000 Phase 2	Battlefield Airlifter	147.6	72.8	60.7	48.6	-99.0	-12.1	-19.9%
LAND 116 Phase 3	Bushmaster Vehicles	5.6	10.5	10.3	5.0	-0.6	-5.3	-51.5%
LAND 121 Phase 3A	Overlander Light	37.4	58.6	58.6	41.4	4.0	-17.2	-29.4%
AIR 7403 Phase 3	Additional MRTT	169.6	145.8	138.2	127.7	-41.9	-10.5	-7.6%
AIR 5431 Phase 3	CMATS	59.9	50.6	40.8	36.3	-23.6	-4.5	-11.0%
SEA 1448 Phase 2B	Anzac ASMD 2B	38.7	48.8	42.4	37.5	-1.2	-4.9	-11.6%
AIR 9000 Phase 5C	Additional Chinook	31.3	32.0	33.6	21.7	-9.6	-11.9	-35.4%
JP 9000 Phase 7	HATS	193.2	122.5	108.6	87.4	-105.8	-21.2	-19.5%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	9.3	32.1	28.0	43.6	34.3	15.6	55.7%
SEA 1439 Phase 4A	Collins RCS	2.7	2.5	2.5	1.8	-0.9	-0.7	-28.0%
SEA 1442 Phase 4	Maritime Comms	70.8	66.3	61.7	56.9	-13.9	-4.8	-7.8%
SEA 1429 Phase 2	Hw Torpedo	9.2	8.5	8.6	7.6	-1.6	-1.0	-11.6%
JP 2008 Phase 5A	UHF SATCOM	5.3	9.7	11.6	13.1	7.8	1.5	12.9%
SEA 1439 Phase 3	Collins R&S	6.7	6.6	6.6	6.8	0.1	0.2	3.0%
SEA 1448 Phase 2A	Anzac ASMD 2A	15.7	18.6	14.3	14.7	-1.0	0.4	2.8%
LAND 75 Phase 4	Battle Management System	52.6	26.5	32.9	28.7	-23.9	-4.2	-12.8%
JP 2048 Phase 3	LHD Landing Craft	0.0	0.2	0.0	0.0	0.0	0.0	0.0%
	Total	**4,803.6**	**4,417.7**	**4,282.7**	**4,127.1**	**-676.5**	**-155.6**	**-3.6%**

Contingency Management

In keeping with standard commercial practice, budgets for major Defence capital investment programs are approved by Government with a contingency provision that varies between projects depending on the complexity and risk of the acquisition.

This allows project managers to proactively manage risk, and when necessary, treat risk events that have materialised into issues.

Contingency funding provides a limited financial margin for project managers against inherent uncertainties, risks and unexpected events that may arise during the course of a project. It is especially important in Defence projects that typically have greater inherent risk, longer timeframes and are generally more complex than private sector projects.

Since the 2013-14 report, each Project Data Summary Sheet now includes advice on whether contingency has been applied to the project during the financial year, which is assured by the ANAO.

Across the life of the 27 projects in this year's report (that is, from November 1998 to June 2017), the aggregate amount of 'applied contingency' is approximately $1.6 billion. The term 'applied contingency' is the amount of contingency that a project has allocated against identified risks, rather than actually spent. This represents 3 per cent of the 27 projects combined project approval value ($62.0 billion).

The areas where risks have been retired using contingency include:

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

Five projects have applied contingency provisions in this financial year:

- AIR 9000 Phase 2,4 and 6 – Multi-Role Helicopter;
- SEA 1448 Phase 2B – ANZAC Anti-Ship Missile Defence;
- AIR 9000 Phase 5C – Additional Medium Lift Helicopters;
- JP 2008 Phase 5A – Indian Ocean Region UHF SATCOM; and
- SEA 1448 Phase 2A – ANZAC Anti-Ship Missile Defence.

For further details on reasons for the application of contingency, please refer to the Project Data Summary Sheet for each project.

Schedule

Defence's analysis indicates that, while projects have been managed within approved scope and budgets, schedule performance, as identified in previous MPRs, continues to present challenges.

In 2010, Initial Material Release and Final Materiel Release were introduced as more appropriate milestones for measuring materiel acquisition performance. Under the new end-to-end Capability Life Cycle, the schedule focus within Defence has shifted over to Initial Operational Capability and Final Operational Capability.

Of the 27 projects in this report, there was a total of 13 projects that reassessed their Final Operational Capability forecast date within 2016-17, with ten pushing it out and three forecasting earlier achievement.

The average Final Operational Capability schedule variance of projects reviewed in 2016-17 at 30 June 2017 is 29 per cent, which is an increase from 24 per cent in 2015-16. The increase is largely due to schedule rebaselining for P8-A Poseidon (AIR7000 Phase 2) for an additional 4 aircraft and Additional MRTT (AIR7403 Phase 3) to include the Government Transport and Communications modification on the second aircraft.

When removing the schedule rebaselining, the average Final Operational Capability schedule variance at 30 June 2017 is 25 per cent.

The project schedule status of the 27 projects in this year's report is shown in Table 6 from Second Pass Approval through to Final Materiel Release and Final Operational Capability.

Table 6: Project schedule status[126]

Project Number	Project	(a) 2nd Pass Approval	(b) Originally Estimated FMR	Forecast FMR at 30 June 16	(c) Forecast FMR at 30 June 17	(c-a)/(b-a) Variation Percentage FMR	(d) Originally estimated FOC	Forecast FOC at 30 Jun 16	(e) Forecast FOC at 30 Jun 17	(e-a)/(d-a) Variation Percentage FOC
AIR 6000 Phase 2A/2B	Joint Strike Fighter	Nov 09	Dec 23	Oct 23	Oct 23	-1.2%	Dec 23	Oct 23	Oct 23	-1.2%
SEA 4000 Phase 3	AWD Ships	Jun 07	Dec 17	Jun 20	Dec 19	19.0%	May 18	Dec 20	Jan 21	24.5%
AIR 7000 Phase 2B	P-8A Poseidon	Feb 14	Oct 19	Oct 19	Jun 22	47.1%	Jan 20	Jan 20	Jan 22	33.8%
AIR 9000 Phase 2/4/6	MRH90 Helicopters	Aug 04	Oct 14	Dec 17	Oct 18	39.3%	Jul 14	Jul 19	Jul 19	50.4%
AIR 5349 Phase 3	Growler	Apr 13	Jul 22	Jul 22	Jun 22	-0.9%	Jul 22	Jul 22	Jun 22	-0.9%
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	Nov 16	Sep 18	37.8%	Nov 16	Oct 17	Dec 19	32.7%
LAND 121 Phase 4	Hawkei	Aug 15	Dec 21	-	Dec 21	0.0%	Jun 23	-	Jun 23	0.0%
AIR 87 Phase 2	ARH Tiger Helicopters	Mar 99	Jul 12	Mar 14	Mar 14	12.5%	Jun 09	Apr 16	Apr 16	66.6%
AIR 8000 Phase 2	Battlefield Airlifter	Apr 12	Oct 17	Apr 19	Oct 19	36.3%	Dec 17	Dec 19	Dec 19	35.3%
LAND 116 Phase 3	Bushmaster Vehicles	Nov 98	Sep 16	Sep 16	Oct 16	0.5%	Dec 16	Dec 16	Jan 17	0.5%
LAND 121 Phase 3A	Overlander Light	Dec 11	Jul 16	Oct 16	Oct 16	5.5%	Jul 16	Oct 16	Oct 16	5.5%
AIR 7403 Phase 3	Additional MRTT	Jun 15	Mar 18	Mar 18	Oct 19	57.7%	Mar 18	Mar 18	Dec 19	63.7%
AIR 5431 Phase 3	CMATS	Dec 14	TBA	TBA	TBA	N/A	Jun 23	-	Oct 25	27.5%
SEA 1448 Phase 2B	Anzac ASMD 2B	Sep 05	Jul 17	Sep 17	Oct 17	2.1%	Mar 13	Oct 17	Oct 17	61.2%
AIR 9000 Phase 5C	Additional Chinook	Feb 10	Jan 17	Jan 17	Jul 17	7.2%	Jan 17	Jan 17	Jul 17	7.2%
JP 9000 Phase 7	HATS	Aug 14	Dec 18	Dec 18	Dec 18	0.0%	Dec 20	Sep 20	Sep 20	-3.9%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	Nov 11	Sep 16	Dec 16	Oct 17	22.4%	Jun 16	Feb 17	Nov 17	30.9%
SEA 1439 Phase 4A	Collins RCS	Sep 02	Jan 16	Oct 18	Oct 18	20.6%	Dec 10	Feb 19	Dec 18	97.0%
SEA 1442 Phase 4	Maritime Comms	Jul 13	May 23	May 23	Oct 23	4.3%	Dec 23	Dec 23	Dec 23	0.0%
SEA 1429 Phase 2	Hw Torpedo	Jul 01	Nov 13	Oct 18	Oct 18	39.8%	Nov 13	Feb 19	Dec 18	40.3%
JP 2008 Phase 5A	UHF SATCOM	Mar 09	Mar 14	Apr 18	Jan 19	96.8%	Jun 18	Jun 18	Mar 19	8.1%
SEA 1439 Phase 3	Collins R&S	Sep 00	Oct 22	Aug 22	Aug 22	-0.8%	Jun 14	May 22	May 22	57.6%
SEA 1448 Phase 2A	Anzac ASMD 2A	Nov 03	Jul 17	Sep 17	Oct 17	1.8%	Dec 11	Oct 17	Oct 17	72.2%
LAND 75 Phase 4	BMS	Aug 13	Jun 17	Jun 17	Oct 17	8.7%	N/A	N/A	N/A	N/A
JP 2048 Phase 3	LHD Landing Craft	Sep 11	Feb 16	Jun 16	Dec 16	18.8%	Feb 16	Jun 16	Jun 18	52.7%

126 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 yet to be approved by Government.

Table 7 provides a list of additional schedule variance factors which can be attributed to the MPR projects which have greater than ten per cent Final Operational Capability variance across the life of the project.

Generally, military off-the-shelf (MOTS) are more likely to be delivered on time than developmental or Australianised MOTS.

Developmental and Australianised MOTS projects have higher levels of technical complexity and system integration risk. These risks increase the likelihood of schedule slippage as technical difficulties may be unforeseen and require significant modifications resulting in delays.

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

Table 7: 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
	ARH Tiger Helicopters
	MRH90 Helicopter
	CMATS
Technical complexity and scope change	Anzac ASMD 2A
	Anzac ASMD 2B
	Additional MRTT
	P-8A Poseidon
Capability manager decisions	Battle Comm. Sys (Land)

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

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.

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 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.	SEA 1444 Phase 1 – Armidale Class Patrol Boat
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 applied to the software aspect of the project. This approach would require strict controls and metrics to limit the risk to the Commonwealth.	JP2043 Phase 3A – High Frequency Modernisation
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; • 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.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

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 incremental delivery software development project. This should align to milestones and remedies in the contract.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

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 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.	SEA 1444 Phase 1 – Armidale Class Patrol Boat
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 Manager.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
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 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.	AIR 5402 – Air to Air Refuelling Capability
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 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.	AIR 5376 Phase 2.1 – F/A-18 Hornet Upgrade

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 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.	JP2043 Phase 3A – High Frequency Modernisation
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 to accommodate such uncertainties.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment
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 developmental project phase, then the end capability requirements and priorities must be well defined and agreed.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

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 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.	AIR 5402 – Air to Air Refuelling Capability
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 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.	AIR5349 Phase 1 – Bridging Air Combat Capability
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 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.	Land 17 Phase 1A – Artillery Replacement

Lessons learned for the whole organisation

The Department of Defence has undergone substantial change as a result of the findings and recommendations in the First Principles Review.

Key First Principles Review reform activities have incorporated organisational lessons learned in improving how Defence does business. Further details on these reform activities can be found in the section on the First Principles Review – One Defence Reform, see page 65.

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. Project managers are assigned to acquisition projects on the basis that their Certified Professional Project Manager status is consistent with the project's ACAT level.

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

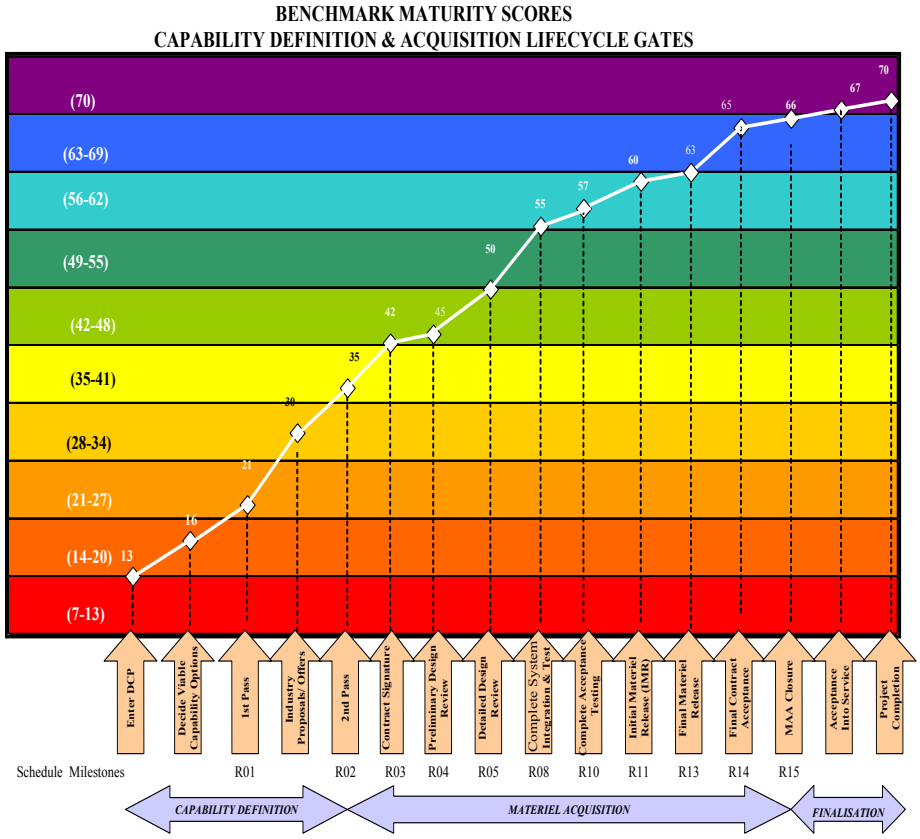
on the project

- 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[127]	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[128]	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

127 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.

128 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 MOTS 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 (CN), Chief of Army (CA) and Chief of Air Force (CAF).
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.
Firm price contract	A firm 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 Definition Document.
Materiel Acquisition Agreement	An agreement between Defence and CASG which states in concise terms what services and products will be delivered, for how much and when.
Memorandum of understanding (MOU)	A memorandum of understanding is a document setting out an agreement, usually between two government agencies.
Minor Capital Acquisition Project	A Defence project in which the proposed equipment falls within the definition of capital equipment but does not meet the criteria in the definition of a major project.
Off-the-shelf	A system or equipment that is available for purchase, which is already established in-service with another military or government body or commercial enterprise and requires only minor, if any, modification to deliver interoperability with existing ADF assets.
Operational concept document	The primary reference for determining fitness-for-purpose of the desired capability to be developed. This document forms part of the Capability Definition Document.

Operational test and evaluation (OT&E)	Test and evaluation conducted under realistic operational conditions with representative users of the system, in the expected operational context, for the purpose of determining its operational effectiveness and suitability to carry out the role and fulfil the requirement that it was intended to satisfy.
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable elements within the ADF.
Portfolio Budget Statement	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence budget appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.
Prime system integrator	The entity that has prime responsibility for delivering the mission and support systems.
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

Qualified Conclusion

Based on the procedures I have performed and the evidence I have obtained, except for the effects of the matters described in the Bases for Qualified Conclusion paragraphs, nothing has come to my attention that causes me to believe that the information in the 27 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 *2016–17 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 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 engagement 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 2017. 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.

Bases for Qualified Conclusion

The Guidelines define a project as the acquisition or upgrade of Specialist Military Equipment. The Guidelines provide that the scope of Defence reporting includes the performance of selected major equipment acquisitions and associated sustainment activities, where applicable.

The project maturity score in Section 6.1 of the ARH Tiger Helicopters PDSS reports a total of 69 out of a maximum of 70 (98.6 per cent) at the time of transition from acquisition to sustainment in April 2017. Noting the caveats, capability deficiencies and obsolescence issues at the declaration of Final Operational Capability in April 2016, this score does not accurately or completely represent the project's maturity as at 30 June 2017. This represents a departure from the Guidelines. The lifting of two of the nine caveats in July 2017 was a result of events occurring prior to 30 June 2017 and, accordingly, my conclusion has had regard to the caveats being lifted.

In addition, a material inconsistency has been identified in the forecast information. Section 4.1 in the ARH Tiger Helicopters PDSS reports that materiel capability delivery performance is at 100 per cent, indicating that materiel capability delivery performance has been met. Rate of effort continues to be lower than planned[129], and expert analysis commissioned by Defence in April 2016 indicates that the program will remain incapable of fully meeting expectations relating to reliability, availability, maintainability and rate of effort.[130]

Secretary's Responsibility for the Project Data Summary Sheets

The Secretary of Defence is responsible for the preparation and presentation of the PDSSs for the 27 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 relevant to 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.

Auditor's Responsibility

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. I conducted the engagement 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 Auditing and Assurance Standards Board. ASAE 3000 requires that I comply with relevant ethical requirements and that I plan and perform my procedures to obtain limited assurance about whether the PDSSs and the *Statement by the Secretary of Defence* are prepared in all material respects 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.

129 This shortfall in rate of effort has been reflected in the impairment of the value of this asset in Defence's financial statements for 2016–17.

130 Department of Defence, *Houston Review into Army Aviation*, April 2016.

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 lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly I do not express a reasonable assurance conclusion on whether the PDSSs and the *Statement by the Secretary of Defence* are prepared in all material respects in accordance with the Guidelines.

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

In accordance with 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* the Australian National Audit Office maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Independence

I have complied with the relevant ethical requirements relating to assurance engagements, which include independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Australian National Audit Office

Grant Hehir
Auditor-General

Canberra
8 January 2018

Statement by the Secretary of Defence

The attached Project Data Summary Sheets (PDSS) for the 27 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). In making this statement, I acknowledge the difference of view between Defence and the ANAO in relation to the AIR 87 Phase 2 - Armed Reconnaissance Helicopter PDSS.

I am confident that the PDSS for this project is an accurate reflection of the acquisition of this capability as at 30 June 2017, and is compliant with the 2016-17 Major Projects Report Guidelines.

Project Status as at 30 June 2017

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 2017.

Significant Events Occurring Post 30 June 2017

In stating this opinion, I acknowledge the following material events have occurred post 30 June 2017:

AIR 6000 Phase 2A/B Joint Strike Fighter

Fleet Release of Block 3F aircraft software was achieved for the US services in October 2017.

SEA 4000 Phase 3 Air Warfare Destroyer

The project achieved Initial Materiel Release and Initial Operational Release for NUSHIP *Hobart* in September 2017. NUSHIP *Hobart* was commissioned as *HMAS Hobart* on 23 September 2017.

AIR 9000 Phase 2/4/6 Multi-Role Helicopters

The acceptance of aircraft 47 was achieved in July 2017. MRH-90 rate of effort (ROE) has significantly improved with the system currently achieving one hundred per cent of its planned ROE. Additionally, the project schedule is currently under review with FMR and FOC to be updated to align with delivery of the remaining materiel components and completion of planned Test and Evaluation of the Special Operations capability.

AIR 87 Phase 2 Armed Reconnaissance Helicopter

In August 2017, following the German Airbus Tiger crash, the Australian fleet of 22 Tiger Helicopters was grounded. The German crash investigation is ongoing. However, preliminary information released by Airbus Helicopters has allowed Defence to conduct a risk assessment, which allowed the resumption of flying operations in November 2017.

LAND 121 Phase 4 Protected Mobility Vehicle – Light

Land 121 Phase 4 conducted the Critical Design Review (CDR) in July 2017 with Contractor Thales, which concluded the Capability Delivery Activity Stage 1 Engineering and

Manufacturing Development (EMD). The Hawkei vehicle displayed improved performance and continued reliability growth. However, at CDR the vehicle had not achieved all requirements, and some reliability concerns remained. These reliability concerns related to select aspects of vehicle performance such as mean time between failure, which are being resolved by Thales and will be jointly evaluated by the Project Office and Capability Manager. A Reliability Demonstration Test (RDT) program has been developed to prove resolution of the remaining reliability issues in accordance with the Contract. The RDT will reschedule IMR by four months, from quarter four 2018 to quarter one 2019. Successful completion of the RDT will enable progression into Production Reliability Acceptance Test (PRAT) which will progress to October 2018. The Low Rate Initial Production was agreed to commence in August 2017 in parallel to the RDT program.

To offset these reliability concerns the project office has also renegotiated the acquisition contract to increase the extant warranty provisions (at nil cost) ensuring value for money for this Commonwealth procurement. Post-CDR Maintenance Evaluation for the vehicle platform commenced in October 2017, with Integral Computing System (ICS) Maintenance Evaluation commencing in February 2018.

The ICS will integrate all C4I and vehicle systems through a common Generic Vehicle Architecture interface. This is a leading edge military systems capability, being a significant developmental project in itself. The ICS is configurable, with a common baseline configuration for four-door vehicles planned to enable role-specific configuration. CDR specifically for the ICS was achieved in July 2017. ICS Developmental Test and Evaluation requirements for Stage 1 were met prior to Commonwealth Stage 1 acceptance. As the ICS has now completed initial baselining, a Contract Change Proposal (CCP013) is implementing the ICS procurement - essentially being the 'ICS Contract'. This significant contract will exceed $AUD100m due to the nature of the procurement across the Hawkei vehicle fleet. CCP013 was signed in November 2017 with the Commonwealth concluding that the offer from Thales satisfied the value for money requirement.

AIR 8000 Phase 2 Battlefield Airlift- Caribou Replacement

Two caveats raised at IMR and IOC (supply support deficiencies and training requirements) were lifted by Air Force in August 2017. Additionally, the acceptance of aircraft eight and nine was achieved ahead of schedule in September and October respectively.

LAND 121 Phase 3A Overlander Light Field Vehicles and Trailers

Operational Release was declared by Army on 29 September 2017. A further two caveats raised at FOC (training requirements and external air transportability capability requirement) were lifted by Army in September 2017.

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

In September 2017, MRTT number 6, the first of two additional KC-30A Multi-Role Tanker Transport aircraft was accepted by the Commonwealth and transferred onto the State Register to commence service with Air Force.

AIR 5431 Phase 3 Civil Military Air Management System

Airservices received the Final Offer from Thales on 25 September 2017. A joint analysis will be carried out by Defence and Air Services to determine if the offer is a viable solution. Government consideration of the Real Cost Increase is expected to occur in February 2018. Further, the project was declared a Project of Concern in August 2017.

AIR 9000 Phase 5C Additional Medium Lift Helicopters

Final Operational Capability was declared by Army in July 2017.

JP 9000 Phase 7 Helicopter Aircrew Training System

Formal declaration of IMR will now occur in quarter one 2018 due to finalisation of Materiel Acquisition Agreement elements which do not directly impact commencement of Piloting Courses. This includes registration of aircraft #7, the 15th aircraft to be delivered, acceptance of the Aircraft Replica Trainer which is being managed through a recovery plan, and administration related to the IMR process.

JP 2072 Phase 2A- Battlespace Communications System

The project has advised that Final Materiel Release has been delayed to quarter one 2018 and Final Operational Capability will be delayed until quarter three 2018.

SEA 1442 Phase 4 Maritime Communications Modernisation

The project achieved Integration Detailed Design Review and Support System Detailed Design Review in October 2017.

SEA 1429 Phase 2 Replacement Heavyweight Torpedo

The project has advised that submission of the Advanced Processor Build Spiral 4 - Very Shallow Water documentation to Navy was delayed to December 2017, with the limitations expected to be lifted in quarter one 2018.

SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability

The project has advised that achieving SUBSCUT Operational Release (OR) and Special Forces Exit and Re-Entry (SF E&RE) IOR will be delayed from December 2017, with a revised schedule for completion to be established in 2018.

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

The project has delivered all materiel requirements for the materiel release of ship eight (*HMAS Stuart*), with Capability Manager acceptance forecast for January 2018. The slight delay to materiel release eight has seen FMR and FOC delayed to quarter one of 2018.

LAND 75 Phase 4 Battle Management System

Following Government approval of LAND 200 Tranche 2 (Work Packages B-D) in September 2017, LAND 75 Phase 4 (Work Package A) is expected to achieve Final Materiel Release and MAA closure in quarter one 2018.

Greg Moriarty
Secretary
Department of Defence

3 January 2018

Project Data Summary Sheets

Project Data Summary Sheets

Project Data Summary Sheet[131]

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)
Total Approved Budget (Current)	**$16,004.9m**
2016-17 Budget	**$613.4m**
Project Stage	Enter Contract
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The AIR 6000 New Air Combat Capability (NACC) 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, comprising the United Kingdom, Canada, Italy, Denmark, Norway, Netherlands and Turkey. Japan, Israel and the Republic of Korea are also procuring the F-35A JSF through US Foreign Military Sales (FMS) agreements.

1.2 Current Status

Cost Performance

In-year

30 June 2017, In-year expenditure **$131.1m over budget** (an overspend of **21.4 per cent**). The major **contributors** to the variance **include aircraft contract payments (revised Lot 10 contracting and payment schedule resulted in higher billable level of effort), Diminished Manufacturing Supply payments, and Memorandum Of Understanding payments.**

Project Financial Assurance Statement

Notwithstanding the risks disclosed at Section 5.1, as at **30 June 2017**, Project AIR 6000 Phase 2A/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 **including contingency** remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

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.

Schedule Performance

Australia's first two aircraft were delivered in 2014, as part of Materiel Release 1 (MR1) commencement of Pilot training in the US.

Facilities construction **at RAAF Base Williamtown is generally ahead of schedule, although some buildings are behind schedule; replanning has ensured that these delays do not impact the critical path, although any additional delay may impact Initial Operating Capability (IOC) scheduled for 2020. Ongoing delay to the acquisition of land at RAAF Base Williamtown has the risk of delaying the opening of the extended runway.** **Construction is underway at RAAF Base Tindal, whilst planned works on the Forward Operating Bases is in the design phase.**

Mission Systems Block 2B software Fleet Release was achieved in July 2015 (for US Marine Corps IOC Declaration).

Mission Systems Block 3i software development and test was completed in May 2016, with the **Joint Program Office (**JPO**)** declaring the final increment of the Block 3i software suitable for USAF IOC requirements, after some stability issues experienced in the test phase had been resolved. The first two Australian aircraft delivered in November 2014 received the initial increment of the Block 3i software (released in September 2014) which was suitable for early pilot training. The two Australian aircraft **received** the latest (final) Block 3i software in **September** 2016.

Mission Systems Block 3F software, the final software release under the System Development and Demonstration (SDD) phase of the program, will deliver the next increment of warfighting capability and is the requirement for Australian IOC, which is planned by December 2020. Block 3F development is **largely** complete and **is undergoing** flight test through 2017. Defence acknowledges schedule risk remains with the Block 3F software due to the complexity of integration and fusion. Notwithstanding the risk, the JPO is forecasting Fleet Release of the **full** Block 3F software **in late 2017 for the F-35A variant which Australia is acquiring**. The schedule risk is considered manageable in the context of Australian IOC capability requirements and timeline, and for Australian **Verification and Validation (V&V)** in early 2019 when it is first needed.

The Australian F-35 sustainment solution is still maturing. The 2014 US Government assignment of regional Depot Airframe and Engine Maintenance, Repair, Overhaul and Upgrade responsibilities to Australia has assisted in the planning of Australian Sustainment. **In November 2016 the US Government assigned the regional maintenance and repair of the first 65 (of 774) components. 64 of these were assigned 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 2015, with risk to Mission Data File delivery in time for IOC being monitored.

The first **four** Australian F-35A pilots have completed training and the training of additional Australian pilots is ongoing. **The first cadre of aircraft maintainers commenced training in the US in February 2017. MR2, the "Complete delivery of materiel and services supporting the start of the maintenance training in US" was declared achieved by Air Force on 24 August 2017.**

Aircraft 3-72 are scheduled to be delivered **progressively between 2018 and** 2023, **with the Final Operating Capability (FOC) milestone planned by December 2023. First aircraft arrival in Australia is on schedule, with two aircraft to be ferried to Australia in December 2018 to support start of Australian V&V in early 2019.**

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. However, 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, weapons integration and training systems. **The delivery of the originally scoped maritime strike capability is expected to be delayed due to decisions made in conjunction with global partners**.

Note

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 the eighth (and last) Partner. 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 December 2006 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 April 2014 to acquire an additional 58 CTOL F-35A JSF aircraft and enabling elements. The combined acquisition of 72 aircraft will provide a FOC in 2023 comprising three operational squadrons of fifth generation F-35 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 all 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 through exercising options under the proposed Block Buy contract.**
- 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. While as a MoU Partner Australia does have a role, overcoming technical challenges is primarily a US responsibility.

The major risks facing the NACC Project are:

- Possibility of US and JSF Partner Governments altering commitments to the broader JSF Program that impacts Australian acquisition and life-cycle costs**. This risk is now managed as part of the procurement risk below.**
- **Shortfalls in integrating the F-35A capability into Australian Defence Force systems will result in reduced interoperability.**
- **Late establishment and insufficient functionality of the required Information, Communications and Technology (ICT) infrastructure, systems and connectivity 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 will be affected by requirements being deferred or cancelled, hardware or software deficiencies, or modifications and retrofits not being completed on schedule.**
- Transition of the JSF into service at the same **time as Air Force transitions other platforms. This risk is now managed as part of the workforce risk below.**
- **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 will 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 will fail to yield expected economic benefits.**
- **Competing priorities across Defence may impact F-35A capability realisation due to the inability to establish and maintain the required workforce.**
- **The RAAF capability declarations will be affected by an Australian F-35A Training System not established in time, and without the required capability to support RAAF training of personnel.**

The project has one major issue that it is managing, whereby **the originally scoped maritime strike capability is expected to be delayed due to decisions made in conjunction with global partners**.

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**.

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
			10,512.5	
Jul 10	Price Indexation		351.0	3
Jun 17	Exchange Variation		**2,389.7**	
Jun 17	**Total Budget**		**16,004.9**	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – US Government – LRIP 6 Production	**(252.8)**		4
	Contract Expenditure – US Government PSFD MoU (FY 09/10 – 13/14)	(181.0)		4
	Contract Expenditure – US Government – PSFD MoU (FY14/15 – 22/23)	**(130.0)**		4
	Contract Expenditure – US Government – LRIP 10 Production	**(69.3)**		4
	Contract Expenditure – US Government – LRIP 6 Propulsion	**(49.4)**		4
	Contract Expenditure – US Government – Reprogramming Laboratory Phase 1	**(37.0)**		**4**
	Contract Expenditure – US Government – LRIP 8 – Production and Non-Annualised Sustainment	**(17.8)**		**4**
	Contract Expenditure – US Government – LRIP 11 – Production	**(4.0)**		**4**
	Contract Expenditure – US Government – FMS Case AT-D-YAF (Weapons)	**(1.8)**		**4**
	Other Contract Payments / Internal Expenses	**(190.1)**		5, **6**
			(933.2)	
FY to Jun 17	Contract Expenditure – US Government – LRIP 10 Production	**(342.5)**		**4**
	Contract Expenditure – US Government – PSFD MoU (FY14/15 – 22/23)	**(63.3)**		**4**
	Contract Expenditure – LRIP 10 Propulsion	**(62.2)**		**4**
	Contract Expenditure – US Government – LRIP 11 – Production	**(40.9)**		**4**
	Contract Expenditure – US Government – Reprogramming Laboratory Phase 1	**(28.2)**		**4**

	Contract Expenditure – US Government – LRIP 8 – Production and Non-Annualised Sustainment	(24.3)		4
	Contract Expenditure – US Government – FMS Cases AT-D-YAF, AT-P-AMN (Weapons)	(13.2)		4
	Lot 12 Long Lead & EOQ	(6.1)		4
	Contract Expenditure – US Government – LRIP 6 Production	(4.7)		4
	FY 17 Air Vehicle Initial Spare	(3.3)		4
	Other Contract Payments / Internal Expenses	(156.6)		5, 7
			(745.3)	
Jun 17	**Total Expenditure**		(1,678.5)	
Jun 17	**Remaining Budget**		14,326.3	

Notes	
1	A May 2012 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 NACC Program. In September 2012, 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 2014 for an additional 58 CTOL F-35A JSF aircraft.
3	Up until July 2010, 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.
4	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
5	The project has reviewed the list of major contracts reported in the PDSS to ensure the PDSS reflects only the most significant contracts of the project. This has resulted in some contracts previously reported separately now being reported as part of the other contract payments/internal expenses.
6	Other expenditure for the period prior to July2016 is primarily associated with activity to integrate NACC specific information systems into the Defence Information Environment (DIE) ($58.2m), FMS minor Weapons cases various ($17.5m), Construction services for the F-35 Partner Reprogramming Lab facility ($10.5m), the NACC Industry Support Program (Grants) ($10.5m), Diminishing Manufacturing Supplies ($9.6m), LRIP 9 – Non-Annualised Sustainment ($5.9m), Enterprise Architecture Modelling activity ($5.6m), Verification and Validation ($4.0m), F-35A base planning and facility design and Environmental Impact Statement development ($3.9m), Co-operative Program Personnel (US based) expenses ($3.3m), LRIP 7 ($3.2m), Reprogramming Support ($3.0m), Reprogramming Laboratory Fit-Out ($1.4m), LRIP 10 Propulsion ($1.1m), and Safety Case ($0.1m). The remainder ($52.3m) is comprised of expenditure associated with internal Defence activity support, project travel, minor office expenses and contractors.
7	Other expenditure for the period July 2016 to June 2017 is primarily associated with Ghosthawk ($31.0m), Project Office Services (Capital) ($22.5m), FMS Cases ($20.6m), Diminished Manufacturing Supply ($14.6m). The remainder ($67.9m) is comprised of expenditure associated with internal Defence activity support, project travel, minor office expenses and contractors.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
725.7	644.2	613.4	PBS – PAES: The variance is attributed to aircraft contract payments being reduced to reflect latest estimate of contract schedules and invoicing, some earlier payments than expected, rescheduling of FMS case activities and foreign exchange movements. PAES – Final Plan: The variance mainly relates to non-aircraft activities where a range of activities required reprogramming, resulting in either +/- variations compared to the PAES. The main contributors being updated schedules for Weapons FMS and Training Equipment activities.
Variance $m	(81.4)	(30.8)	Total Variance ($m): (112.3)
Variance %	(11.2)	(4,8)	Total Variance (%): (15.5)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The in-year overspend is mainly due to aircraft contract payments (revised LOT 10 contracting and payment schedule resulted in higher billable level of effort); Diminished Manufacturing Supply payments, and Memorandum Of Understanding payments.
			Foreign Industry	
			Early Processes	
			Defence Processes	
		131.1	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
613.4	745.3	131.1	**Total Variance**	
		21.5	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $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	554.9	Various	MoU	2, 12, 13
US Government (LRIP 6 Production)	May 11	22.0	272.7	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	896.6	Fixed Price Incentive	USG Contract	5, 12, 13
US Government (LRIP 10 Propulsion)	Mar 15	13.4	141.4	Fixed Price Incentive	USG Contract	6, 12, 13
US Government (Reprogramming Laboratory Phase 1)	Mar 15	119.0	123.4	Fixed Price Incentive	USG Contract	7, 12, 13
US Government (LRIP 8 Production and Non-Annualised Sustainment)	Jun 15	99.9	109.6	Fixed Priced Incentive	USG Contract	8, 12, 13
US Government (LRIP 11 Production)	Dec 15	88.2	85.2	Fixed Price Incentive	USG Contract	9, 12, 13
US Government (AT-D-YAF)	Jun 16	111.9	103.7	Reimbursement	FMS	12, 13
US Government (AT-P-AMN)	**Jul 16**	**132.3**	**122.9**	**Reimbursement**	**FMS**	**12, 13**
US Government (Lot 12 Long Lead and Economic Order Quantity Contract)	**Feb 17**	**236.3**	**233.7**	**Fixed Price Incentive**	**USG Contract**	**10, 12, 13**
US Government (FY17 Air Vehicle Spares & ACURL Spares)	**Mar 17**	**114.4**	**126.5**	**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 2006 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 2009 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 2006 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 2014.

	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'. The increase in this contract value is due to full funding contract now being in place.
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.
9	LRIP 11 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'.
10	**Lot 12 Long Lead items for the next tranche of F-35A aircraft for Australia. This contract also encompasses the first instalment of Economic Order Quantity (EOQ) parts procurement for the planned Block Buy of aircraft spanning Lots 12 to 14.**
11	**FY17 Air Vehicle Initial Spares & Australia, Canada and United Kingdom Reprogramming Lab (ACURL) Spares contract for Australia's Deployable Spares Pack (DSP), Australia's contribution to F-35 global spares pool and spares for the ACURL.**
12	Contract value as at **30 June 2017** is based on actual expenditure to **30 June 2017** and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
13	The scope of these contracts is explained further below.
14	**The project has reviewed the list of major contracts reported in the PDSS to ensure the PDSS 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.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
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 associated with propulsion systems for the next eight F-35A aircraft procurement.	
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)	N/A	N/A	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 Counter Measures.**	
Lot 12 Long Lead and Economic Order Quantity	**15**	**15**	**Procurement of long lead supply items and economic order quantity items, leading to Full Funding contract award in 2018 for procurement of the next 15 F-35A aircraft under Lot 12.**	
FY17 Air Vehicle Initial Spares & ACURL Spares	**N/A**	**N/A**	**F-35 global spares pool, Deployable Spares Pack and spares for the Australia, Canada and United Kingdom Reprogramming Lab.**	

Major equipment received and quantities to 30 June 17
Two F-35A aircraft delivered November 2014 to support commencement of training in the USA.

Notes	
1	No equipment delivered as part of this contract.

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 2004, was re-scheduled to February 2006 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	**Oct** 17	**3**	3
Acceptance	Accept and deliver two (LRIP 6) aircraft to US Pilot Training Centre	Mar 14	Nov 14	Nov 14	8	4
	Accept and deliver aircraft 3-14	Dec 16	Jun 19	**May** 19	**29**	5
	Accept and deliver aircraft 15-72	Dec 23	Sep 23	**Aug** 23	(**4**)	6

Notes	
1	Block 2B supported the United States Marine **Corps** IOC declaration which occurred on 31 July 2015.
2	Block 3i Initial Release software provides initial pilot training capability for the Low Rate Initial Production (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.

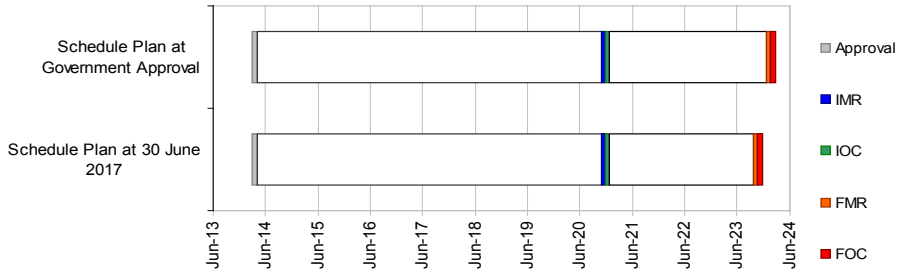
3	Block 3F Fleet Release is the final capability software state under the SDD Program. The latest software schedule from Lockheed Martin indicates that 3F Fleet Release has been split into variant specific Fleet Release Loads, and subsequently capability specific loads. The F-35A Full Envelope with AIM9-X version of 3F Mission Systems Software is planned for Fleet Release in the US during **October** 2017. Production and retrofit to the Australian F-35A will follow, with projected lead times satisfying the Australian F-35A IOC objective schedule.
4	The March 2014 original delivery date was based on Australian IOC in 2018. The November 2014 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.
5	The remaining 12 Stage 1 Aircraft were originally scheduled for delivery by December 2016 leading to Australian IOC in 2018. In March 2010, 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) planned to be accepted **by May** 2019 to achieve a revised Australian IOC by December 2020.
6	Variance is due to the expected completion of Aircraft 72 production in July 2023, resulting in Aircraft 72 early acceptance and ferry to Australia in **August** 2023.

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	1
Initial Operational Capability (IOC)	Dec 20	Dec 20	0	1
Final Materiel Release (FMR)	Oct - Dec 23	Oct 23	(2)	
Final Operational Capability (FOC)	Dec 23	Oct 23	(2)	2

Notes	
1	The Integrated Master Schedule is the subject of on-going critical analysis following recent improvement in Primary and Secondary Materiel Release milestone definitions. **The project now has a** more robust and stable Integrated Master Schedule **that provides improved information for decision making and greater confidence in forecast performance against project milestones**.
2	FOC date currently forecast as 2 months early. The driving activity for this date is the arrival of the last tranche of Australian aircraft from the US.

Schedule Status at 30 June 2017



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:** N/A **Red:** The originally scoped maritime strike capability is expected to be delayed due to priorities set in conjunction with global partners. Defence is committed to delivering a maritime strike capability to meet requirements and will provide regular updates to Government.
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 October to 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
Possibility of US and JSF Partner Governments altering commitments to the broader JSF Program that impacts Australian JSF acquisition and life-cycle costs.	This risk is now managed as part of the procurement risk below.

Shortfalls in integrating the F-35A capability into Australian Defence Force systems will result in reduced interoperability.	Ongoing analysis of interfaces with other ADF platforms to ensure optimal interoperability. Participation in the US test activities will enable Australia to obtain greater understanding of the systems integration risks and issues and thereby develop appropriate treatment strategies. This may include the incorporation of Australian platforms and systems into the test program.
Late establishment, and insufficient functionality of the required Information, Communications and Technology (ICT) infrastructure, systems and connectivity could impact stand up of the F-35A capability.	Ongoing engagement **is required between JSF IS staff,** the JPO and key stakeholders to ensure ICT systems development and integration are synchronised with the broader JSF facilities program. **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.**
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, 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.**
F-35A Capability States will be affected by requirements being deferred or cancelled, hardware or software deficiencies, or modifications and retrofits not being completed on schedule.	Pro-active coordination between all organisations with responsibilities for acquiring, integrating and supporting the JSF in-service **to ensure information concerning deficiencies in delivered requirements to achieve capability states is shared and managed in conjunction with the Capability Manager to ensure that any influence or remediation action required is conducted jointly so that, ultimately, the requirements are met**.
Transition of the **F-35A into service at the same time as Air Force transitions other platforms. This risk is now managed as part of the workforce risk below.**	**This risk is now managed as part of the workforce risk below.**
Sustainment Performance, Cost & Schedule may be affected by the ongoing evolution of the Global Support Solution (GSS).	The US has released strategies for Australia's involvement in aircraft and engine depots, and these are being executed. Continued close engagement is required with the JPO to understand the developing Global Support Solution (GSS). Australia has defined an Australian F-35 sustainment solution and focus is now on implementing this and adjusting as GSS evolves.
Timeliness and scope of F-35A reprogramming enterprise will impact capability delivery.	Australian participation in initial development of the joint Reprogramming Laboratory solution with the UK has improved our understanding of technical and programmatic issues. Australia is co-chair of a steering group to manage reprogramming development and mitigation plans are being developed with steering group oversight. **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).**
Australian Industry, as a Fundamental Input to Capability, may not grow adequately to support the sovereign JSF and associated ADF capabilities.	**This risk is now managed as part of the Australian Industry risk below.**
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.	**Conduct on-going engagement of the F-35 Joint Program Office and major project suppliers to have them to 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.**

Australian Industry participation in the global F-35 Program fails to yield expected economic benefits	Coordinated activity with Defence Industry Division including close working relationship with **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).
Competing priorities across Defence may impact F-35A capability realisation due to the inability to establish and maintain the required workforce.	**Maintain an effective integrated Workforce Plan that considers the evolving F-35A workforce requirements, and engage regularly with miltary and APS workforce planning organisations to ensure the Worforce Plan priorities are enacted.**
The RAAF capability declarations will be affected by an Australian F-35A Training System not established in time, and without the required capability to support RAAF training of personnel.	**Defence representation at critical and essential JPO meetings, including Periodic Technical Interchange Meetings (PTIM) with LM and JPO, to burn-down risk through persistent, consistent influencing.**

Emergent Risks (risk not previously identified but has emerged during 2016-2017)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

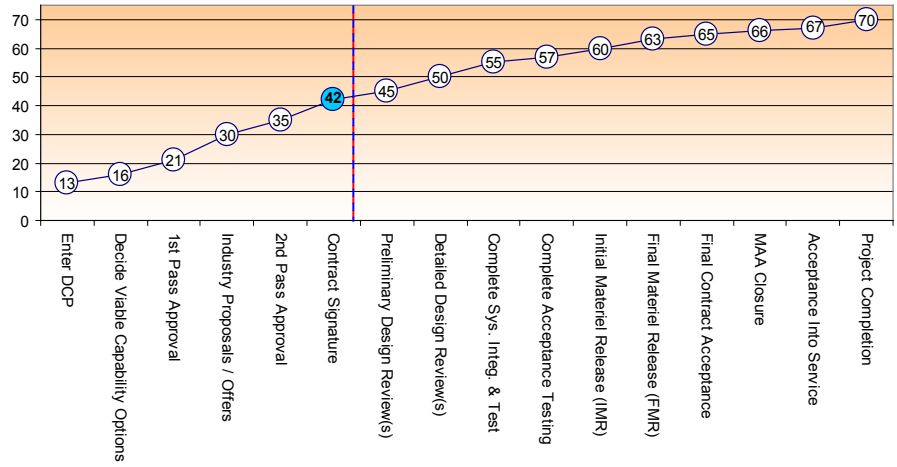
Description	Remedial Action
The project has one major issue that it is managing, whereby **the originally scoped maritime strike capability is expected to be delayed due to priorities set in conjunction with global partners**.	**Defence is committed to delivering a maritime strike capability to meet requirements and will provide regular updates to Government.**

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

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	6	6	6	6	42
Enter Contract	Project Status	7	6	6	6	7	6	5	43
	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.** • **Technical Difficulty:** The JSF Air System is an extremely complex weapon system that will drive significant change in how Australia supports and conducts air combat operations. Technical challenges remain, however progress is being achieved with risks and issues incrementally mitigated or retired. 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.							



2015-16 MPR Status - - - - 2016-17 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 2016-17

Position	Name
Division Head	AVM Leigh Gordon
Branch Head	AIRCDRE Terry Saunder
Project Director	GPCAPT David Scheul **(to Jan 17)** **GPCAPT Guy Adams (Jan 17 – current)**
Project Director	WGCDR Vince Palmeri (Acting **to Oct 16)** **Mr Stephen McDonald (Oct 16 – current)**
Project Director	GPCAPT Neil Pearson

Project Data Summary Sheet[132]

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
Total Approved Budget (Current)	**$9,090.1m**
2016-17 Budget	**$674.0m**
Project Stage	Detailed Design Review
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

On 4 June 2014 the Minister for Defence announced this project as a Project of Concern.

Cost Performance

In-year

In line with providing financial information in accrual terms, the AWD Program was underspent by $141.3m against the approved budget in Financial Year 2016-17. Compared to the cash outcome, $44.0m of the $141.3m variation is due to the approved budget being on a cash basis and the actuals being on an accrual basis. The following breakdown of variation explains the detail in cash terms where the variation is an underspend of $97.3m against the approved budget for the same period. Of the cash underspend, $53.6m was due to stoppage of payments in June coordinated by Chief Finance Officer (CFO) Group which consisted of $27.5m against Foreign Military Sales (FMS) payments for AEGIS and Harpoon and $26.1m against Alliance Based Target Incentive Agreement (ABTIA) costs for work performed attributed to labour and contractor fees. The remaining $43.7m underspend was primarily due to efficiencies made against the ABTIA Contract due to Navantia being inserted into the Shipyard which includes savings against Indexation estimates and Direct Project Costs $47.8m. Further underspends were against various Program Management Office contracts, Petrol, Oil and Lubricants (POL) and Outfit Allowance List (OAL) of $32.6m plus milestone delays of $10.6m against the Platform System Designer's (PSD) Contract due to the focus being on Provisional Acceptance of Ship 1. Higher than expected disbursements throughout the year resulted in greater payments against the AEGIS FMS case of $45.6m plus overall Spares costs were $1.8m higher than anticipated due to payments for the Sonar Dome Towed Assembly.

Project Financial Assurance Statement

Notwithstanding the issues disclosed at Section 5.2, as at 30 June **2017**, 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.

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.

Schedule Performance

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

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

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

Following further concerns with AWD delivery, the delivery schedule has been further re-baselined as part of the AWD Reform. 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 **2016** the following major events have occurred:

- **August 2016 – Ship 1 Dock Trials completed**
- **September 2016 – Ship 1 Builder's Sea Trials completed**
- **December 2016 –Ship 2 Float Off completed**
- **February 2017 – Ship 2 Main Generator Light Off completed**
- **March 2017 – Ship 1 Category 5 Sea Acceptance Trials completed**
- **March 2017 – Command Team Trainer delivered and accepted**
- **June 2017 – Provisional Acceptance of Ship 1**

Materiel Capability Delivery Performance

All significant government specified capability is currently planned to be achieved and in some warfare areas, the capability will be exceeded. Procurement of the Electronic Warfare Radar – Electronic Attack (R-EA) sub-system has been deferred as its performance, based on currently available technology, does not represent a cost-capability benefit given that more capable second generation technology is expected to be available in the 2017-18 time frame. The R-EA budget has been preserved to support the more capable system being installed in the AWD. Decisions made by the program in conjunction with the Capability Manager will ensure that AWD is delivered with the expected capability.

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.

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:

- Integration of the *Hobart* Class Combat System;
- Capability Acceptance;
- Achieving maximum productivity levels through efficient shipyard operation and change management;
- Managing the level and timing of changes to the production baseline to minimise production rework;
- Meeting the consolidation, test and activation schedules within the constraints of a new build in a new Australian shipyard;
- Managing the timely delivery of equipment and fittings from a large number of subcontractors located in Australia and overseas through the AWD Alliance;
- Delivering an effective, efficient and sustainable through-life support system for the *Hobart* Class DDGs.

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.

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		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 17	Exchange Variation		(380.1)	
Jun 17	**Total Budget**		9,090.1	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – AWD Alliance	(4,819.3)		
	Contract Expenditure – US Government	(1,076.9)		
	Contract Expenditure – Navantia	(424.4)		
	Contract Expenditure – NATO Consortium	(72.4)		
	Other Contract Payments / Internal Expenses	(248.7)		4
			(6,641.7)	
FY to Jun 17	Contract Expenditure – AWD Alliance	(435.9)		
	Contract Expenditure – US Government	(72.6)		
	Contract Expenditure – Navantia	(1.6)		
	Other Contract Payments / Internal Expenses	(22.6)		4
			(532.7)	
Jun 17	**Total Expenditure**		(7,174.4)	
Jun 17	**Remaining Budget**		1,915.7	

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.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
725.5	675.7	674.0	PBS-PAES: **The financial variation between the Budget Estimate and the Revised Budget Estimate is due to reprogramming of forecasted expenditure of the Alliance contract and Foreign Military Sales forecasted payments.** PAES-Final Plan: **Variance is due to MYEFO & 2017-18 Pre-ERC Forex Updates.**
Variance $m	(49.8)	(1.7)	Total Variance ($m): (51.5)
Variance %	(6.9)	(0.3)	Total Variance (%): (7.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(94.5)	Australian Industry	The AWD underspend for Financial Year 2016-17 $141.3m. See Section 1.2 for further detail.
		(10.2)	Foreign Industry	
			Early Processes	
		(82.0)	Defence Processes	
		45.4	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
674.0	532.7	(141.3)	**Total Variance**	
		(21.0)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
US Government	Oct 05	842.7	1,090	FMS	FMS	1, 2
AWD Alliance	Oct 07	4,323.1	6,734.8	Variable with Pain/Gain Share	Alliance	3
Navantia	Oct 07	373.6	578.8	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 2017 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 2017 is based on actual expenditure to 30 June 2017 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 2017) 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 17		
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 17

See Section 1.2 Schedule Performance.

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	Aug 17	26	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, however Initial Materiel Release (IMR) has not been declared and is forecast for September 2017. The Materiel Acquisition Agreement states IMR should be declared as close as possible to Navy's declaration of Initial Operational Release, which is forecast to be achieved (with caveats) in September 2017.**

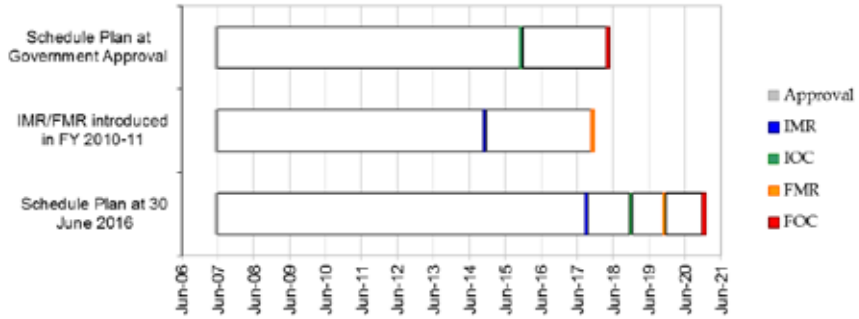
3.3 Progress Toward Materiel Release and Operational Capability Milestones

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	Dec 19	24	
Final Operational Capability (FOC)	May 18	Jan 21	32	2

Notes

1	The IMR and IOC dates have been reviewed and are expected to be approved with the release of a revised Materiel Acquisition Agreement 2.0.
2	FOC is scheduled 12 months after MR3.

Schedule Status at 30 June 2017

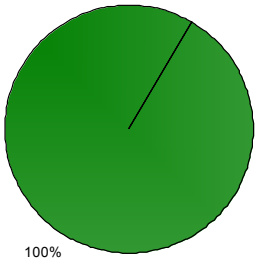


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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 currently expects to meet 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 is expected to be achieved in September 2017.**	Not yet achieved.
Final Materiel Release (FMR)	All three *Hobart* Class Ship Systems with up to Category 5 (sea acceptance) trials, testing and certification completed. All sustainment arrangements in place to provide materiel support to the *Hobart* Class. **FMR is expected to be achieved in December 2019.**	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
1. Integration of the *Hobart* Class Combat System. Key Risks: • The current version of the Aegis Weapons System has not been previously integrated in the platform. • Integration of Electronic Warfare and Communications Systems. • Equipment selections may impact on the topside design. • Sonar – the software development and integration.	The risks associated with the integration of the Aegis Weapons System are being actively managed through regular reviews between the Alliance, Platform System Designer, US Navy and Lockheed Martin (the Aegis equipment supplier to the US Navy). Action is taken to ensure emerging issues are identified and addressed in a timely manner. Electronic Warfare and Communications and Information Systems procurement strategies have been developed with a wide range of stakeholder engagement. These strategies are aimed at ensuring that the customer will be satisfied with the contracted solution and that the solution will have minimal impact on the platform design. The Integrated Test Team (ITT) comprised of Aegis specialists commenced on site to conduct Combat System set-to-work activities. **With Ship 1 successfully completing its CAT 5 trials in March 2017 and its Provisional Acceptance in June 2017, the risk to the program is now considered low.** Sonar – See Remedial Action at Risk 3.
2. Capability Acceptance: Certification requirements are unclear for some equipment, and US Navy and some Original Equipment Manufacturers are not disclosing requested objective quality evidence.	The Project Certification Plan has been agreed with the RAN. The Program is working closely with the US Navy and Original Equipment Manufacturers to obtain the required objective quality evidence. Working with RAN to establish processes, procedures and principles to achieve certification. **As the project progresses, the risk of missing objective quality evidence is being mitigated as deficiencies in evidence are not being realised.** All Safety certification required under FMS has been delivered to Alliance, no outstanding data.
3. Subcontractor Performance: Subcontractor performance may result in poor quality product, delays or changed requirements.	The performance of some subcontractors has required active management and intervention. **This risk is being mitigated, as all blocks have been delivered to the Adelaide shipyard and integration of Ship 3 is well underway. There is an outstanding remuneration claim from one of the constructors regarding block work.** Sonar – The Alliance is actively working with the Sonar Original Equipment Manufacturer (OEM) at all levels, including the embedding of Alliance staff on-site to manage risk associated with software development and integration. **While some tests of the Variable Depth Sonar were completed during Acceptance Trials, further testing will be completed post Provisional Acceptance. Testing of the hull mounted sonar has been successfully completed.**

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).	Mitigation strategies are in place to minimise the risk and work is in hand with the Alliance to develop strategies to progressively seek the data required to support the development of an optimised support system. Logistics Information Management System Management plan completed, implementation has begun including prototype data loading. Working with the Alliance to migrate and validate data between systems. **In March 2017, the Commonwealth accepted the Command Team Trainer at HMAS Watson, which was the first entire system delivered by the Alliance.**
5. Inadequate Configuration Management impact on Ship Acceptance.	**Early engagement and agreement on the process and expected deliverables is required to support ship Delivery and Acceptance.** **The Ship Certification Plan addresses how product conformance will be established, whilst the AWD Functional Configuration Audit and Physical Configuration Audit Plan provides direction on how these elements of the Design will be assessed.** **The AWD Acceptance Plan provides the overall framework for Delivery and Acceptance of the AWDs and other items of Supplies as detailed in the ABTIA.** **The Alliance PMO has appointed an Acceptance Manager and established an Acceptance Team who hold weekly meetings with the CoA to review progress on all delivery and acceptance related matters. The first major item of supplies (Hobart Class Command Team Trainer) has been Delivered and Accepted by the CoA, hence providing increased confidence in the delivery and acceptance framework and processes.**
6. Impacts to Test and Activation and Sea Trials due to equipment failure.	**The underlying risks have been retired or downgraded following successful completion of Builders Acceptance Trials for Ship 1. Engagement with OEMs and Navantia to ensure stocks of equipment and spares are adequate. Spares are being maintained according to manufacturers' specifications.**
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

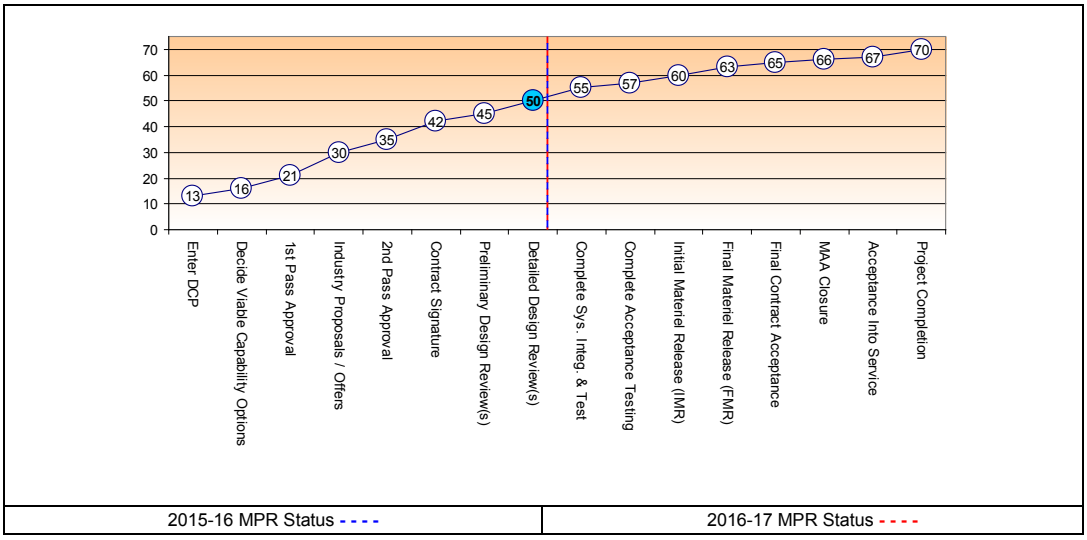
Description	Remedial Action
1. The delivery of FMS elements of the AWD supplies may not be possible, or may be delayed or compromised in integrity, due to the budget for FMS Engineering and Technical Assistance (ETA) not being sufficient.	**Development and implementation of Follow On Support business case framework and associated cases will allow sustainment of Ships 1 and 2 to be funded through CN40 (as required by Navy).** **The increased stability in the shipbuilding schedule due to AWD reform implementation has reduced risk of delays to delivery.** **Opportunities have been identified and taken to reduce expenditure of ETA.**
2. Shipbuilding Delay: The AWD Alliance will not meet contracted delivery dates for the three ships.	**This issue has been retired. The implementation of the AWD Reform has brought stability into the shipbuilding schedule.**
3. 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 • 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	A Design Chill was implemented in 2011 to reduce the level of change rolling into the production baseline. Effective engagement with key stakeholders has been critical to ensure the implications of change requests, approval and subsequent implementation are fully understood. Robust mechanisms to control the authorisation of change have been established within the Alliance and Program Office. The change management approval and implementation process has undergone a number of evolutions to expedite change as efficiently as possible. Delays in approval can result in significant cost and schedule impacts.

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; the final safety changes agreed for Provisional Acceptance of Ship 1. The change management process for minor change is in place with Navantia and is effective.**
4. Shipyard Productivity. AWD shipbuilding productivity has been independently reviewed and benchmarked since 2011. The current low level of shipbuilding productivity is considered a major issue in terms of the overall AWD program and to date the issue has only been partially addressed by ASC, the AWD Shipbuilder. Unless there is a near term improvement in shipbuilding productivity then the current shipbuilding performance, which is in excess of plan and budget, will negatively affect other components of the AWD program.	Annual independent reviews have been undertaken by First Marine International, a company internationally recognised for its expertise in shipbuilding productivity benchmarking. The most recent review was conducted **late 2016**. Reform long term arrangements commenced December 2015 placing Shipbuilding Management responsibility with Navantia. **This issue has been retired. The implementation of the Reform arrangements has improved shipyard performance, and stabilised cost and schedule performance.**
5. Intellectual Property rights are not clear resulting in risk exposure during Through-Life Support.	Issue previously raised as part of Risk 4, now realised as an Issue to promote visibility and management. Delivery of accurate and complete IP data is an Alliance responsibility and requires close Commonwealth monitoring. The Alliance is currently undergoing an IP data remediation process. **This issue has been retired. The Alliance has developed and implemented a 'make good' plan with records to be transferred from the Product Lifecycle Management system to the Team centre system.**
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	8	8	8	6	7	51
	Explanation	• **Requirement:** Reflects the successful completion of the Support System Detailed Design Review in August 2010. • **Technical Difficulty:** Reflects the completion of Communication Information System subsystem CDR. • **Commercial:** Reflects the lower than expected contractor performance in terms of shipbuilding productivity.							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Formation of the Alliance, a new organisational structure takes time and effort to develop the culture necessary to achieve improved outcomes. An external facilitator was engaged to assist in the initial and ongoing development of the Alliance and this has proved invaluable.	Governance
The Program Office, originally located in both Canberra and Adelaide was relocated to Adelaide to improve operations and interactions with the Alliance. The relocation involved considerable effort and a resultant loss in knowledge of staff who did not relocate. Earlier consolidation of the Program Office would have been beneficial.	Resourcing
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 2016-17

Position	Name
General Manager Ships	Mr Alan Nicholl **(to Feb 2017)** **Mr Patrick Fitzpatrick (Acting Feb 2017–current)**
Program Manager	CDRE Craig Bourke, RAN
Deputy Program Manager	Mr Greg McPherson

Project Data Summary Sheet[133]

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
Total Approved Budget (Current)	**$5,262.5m**
2016-17 Budget	**$1,108.6m**
Project Stage	**Integration and Test**
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 spent **$1,145.0m as at 30 June 2017** against a planned **in-year** budget of **$1,108.6m**, a variance of (**$36.4m**) or **3.3** per cent. This variance is primarily due to **re-programming of Air to Air Refuelling Clearance activities payment to Financial Year 2017-18 ($12.5m) and deferring procurement of Training System support, whilst advancing aircraft payments from Financial Year 2017-18.**

Project Financial Assurance Statement

As at **30 June 17**, 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, that 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.

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 Assurance Report* by the Auditor-General in **Part 3** of this report.

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 first aircraft, initially scheduled for delivery in January 2017, **was delivered in October 2016 (three months ahead of schedule). Since then aircraft two was delivered in February 2017 (six weeks ahead of schedule) and aircraft three in April 2017.** The USN have advised that all aircraft, that are currently on contract, are expected to be ready for delivery on time or earlier than required.

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 is planned for 2018, allowing the withdrawal of the AP-3C Orion to occur around 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 the risks associated with the Aircrew Training System, Mk 54 Torpedo and High Altitude Anti-Submarine Weapon Capability (HAAWC).

A number of risks for the effective and efficient sustainment of the P-8A are also currently being treated through efforts to more closely align the US and Australian sustainment processes.

The project has also identified issues with CP process development and aircraft fatigue testing results and are working with the USN to quantify the impact of these issues. The project is also seeking to mitigate the impact of forecast delays in the development and timely installation of Aircrew Training Devices.

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			
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
Mar 16	Real Variation - Scope	1,295.4		6
			4,729.1	
Jul 10	Price Indexation		20.5	7
Jun 17	Exchange Variation		368.7	
Jun 17	**Total Budget**		5,262.5	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Aircraft Acquisition Payments – Lot 6	(413.5)		8
	Contract Expenditure –Aircraft Acquisition Payments – Lot 7	(175.3)		
	Contract Expenditure – Aircrew Training System	(156.5)		
	Contract Expenditure – Aircraft Acquisition Payments – Lot 8	(139.0)		8
	Contract Expenditure – Aircraft Government Furnished Equipment	(120.4)		
	Contract Expenditure – Aircraft Retail Spares	(108.8)		8
	Contract Expenditure – PSFD MoU Contributions	(89.9)		
	Contract Expenditure – Increment 1 Contribution	(66.0)		
	Other Contract Payments/Internal Expenses	(310.9)		8,9
			(1,580.3)	
FY to Jun 17	Contract Expenditure – Aircraft Acquisition Payments – Lot 7	(339.1)		8
	Contract Expenditure – Aircraft Acquisition Payments –Lot 8	(80.2)		
	Contract Expenditure – Aircraft Acquisition Payments – Lot 6	(319.5)		
	Contract Expenditure – Aircrew Training System	(94.7)		
	Contract Expenditure – Aircraft Government Furnished Equipment	(63.4)		
	Contract Expenditure – Aircraft Retail Spares	(0.7)		
	Contract Expenditure – PSFD MoU Contributions	(14.2)		
	Other Contract Payments/Internal Expenses	(233.2)		10
			(1,145.0)	
Jun 17	**Total Expenditure**		(2,725.2)	
Jun 17	**Remaining Budget**		2,537.2	

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.
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 **2016** was comprised of Increment 3 contributions of **$40.0m, Wholesale Spares Pool of $39.2m, Maintenance Training Device scoping and acquisition costs of $36.4m, Mission Support System (MSS) of $21.2m,** MK 54 acquisition costs of **$17.0m**, Tactical Operational Centre/Mobile Tactical Operational Centre (MTOC) scoping and acquisition costs of **$14.9m, Support and Test Equipment (S&TE) acquisition costs of $14.4m, Aircrew Maintenance and Training costs of $14.4m, DIRCM spares of $10.9m,** Commonwealth Project Personnel (CPP) expenses of **$8.3m, Sonobuoys acquisition cost of $7.4m, 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 of $4.3m** and other operating expenditure not attributable to the listed major contracts of **$65.9m.**
10	Other expenditure to **30 Jun 2017** was comprised of Operational Loads Monitoring System **$39.0m, Increment 1 Development $20.8m, Spare Engine $16.8m,** Sonobuoys **$15.3m, Transition Training $14.7m, Strategic Support Partnership Contract (SSPC) $13.7m, Search and Rescue (SAR) Kit Integration Services $8.2m, MK54 acquisition cost of $7.1m, Training System Spare $4.6m, TOC/MTOC $4.6m** and other operating expenditure not attributable to the listed major contracts of **$88.4m.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
1,046.8	**1,089.6**	**1,108.6**	PBS - PAES: **The variation is due to earlier than planned payments for equipment, early establishment of the maintenance training contract and increase in Mission support system costs.** PAES – Final Plan: **The variance is due to advancing aircraft payments and re-programming of Air to Air Refuelling to Financial Year 2017-18 and the deferral of procurement of Training System support.**
Variance $m	**42.9**	**19.0**	Total Variance ($m): **61.9**
Variance %	**4.1**	**1.7**	Total Variance (%):**5.9**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**This variance is primarily due to advancing aircraft payments to account for in-year slippage of re-programming of Air to Air Refuelling clearance activities to Financial Year 2017-18 ($12.5); and deferring procurement of Training System support.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
		36.4	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
1,108.6	**1,145.0**	**36.4**	**Total Variance**	
		3.3	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
PSFD MoU - Contributions (US Government)	Mar 12	130.4	167.3	Cost Ceiling (Capped)	MoU	1, 8
Aircraft Government Furnished Equipment (GFE) (US Government)	Apr 14	142.9	227.2	Variable	MoU	2,7,8
AAC and Aircraft Production Lot 6 (US Government)	Aug 14	159.0	777.2	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	321.6	Variable	MoU	5,7,8,10
AAC and Aircraft Production Lot 7 (US Government)	Jun 15	182.5	766.4	Variable	MoU	6,7,8
AAC and Aircraft Production Lot 8 (US Government)	May 16	139.0	762.2	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 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 17 is based on actual expenditure to 30 June 2017 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 17		
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 ~~& Lot 8~~ (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	Various	Various	Training Systems Support Centre, Weapons	

(US Government)			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 17				
To date, 3 aircraft and 2 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. **To date, three aircraft have been delivered.**
4	No equipment has been delivered as part of this contract. The contract for acquisition of the second four aircraft was signed in January 2016.
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	Oct 17	6	1,**3**
Acceptance	Accept and deliver Lot 6 Aircraft (1-4)	Nov 16 – Sep 17	Nov 16 –Aug 17	Oct 16 - **Jul 17**	(2)	**4,5**
	Accept and deliver Lot 7 Aircraft (5-8)	Dec 17 – Sep 18	Dec 17 –Aug 18	Dec 17 – **Oct 18**	1	**4,5**
	Accept and deliver Lot 8 Aircraft (9-12)	Aug 19 – Feb 20	Aug 19 – Feb 20	Aug 19 – Feb 20	0	**4**
	MSS and two Deployable MSS	Sep 16 – Aug 18	**Nov** 16 – **Dec** 18	**Feb 17 -** Dec18	4	**6**
	Training System	Jan 18 – Mar 18	**Mar 18 –Jun 18**	**Jan 18** – Jun 18	3	**7**

Notes	
1	Fleet Releases are the final configurations for the incremental builds of the P-8A Weapon System. Increment 2 is being

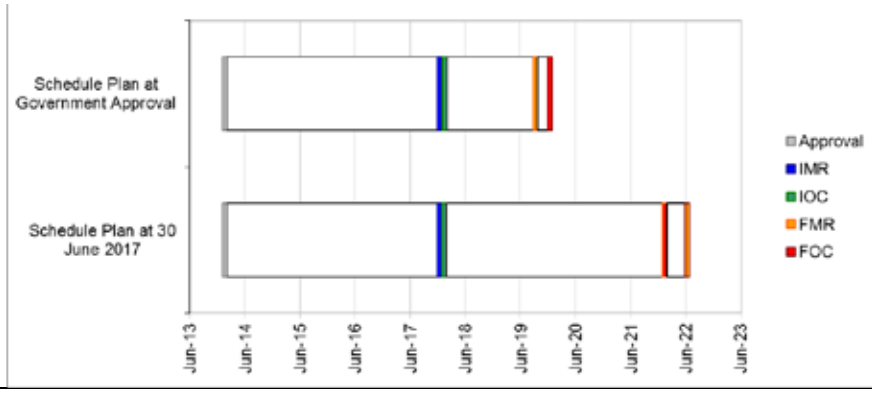
	delivered through a number of smaller Engineering Change Proposals. Variance from original planned dates are due to changes in the Boeing / USN schedule.
2	Due to data disclosure issues FR 40 was updated to 40.1 and finalised in November 2016
3	Fleet Release 50 has been re-titled Fleet Release 46 to align with the management of the Lot 8 production contract. The capabilities planned for FR50 remain unchanged as the change was solely based on nomenclature.
4	Australian Lot 6 aircraft are scheduled for delivery in October 2016 (achieved), February 2017 (achieved), April 2017 (achieved), and July 2017. Australian Lot 7 aircraft are scheduled for delivery in December 2017, February 2018, August 2018, and October 2018. Australian Lot 8 aircraft are scheduled for delivery in August 2019, September 2019, October 2019, and February 2020.
5	Australia will adopt a model of Recognition of Prior Acceptance for Aircraft certification.
6	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 aligning of delivery with facilities construction completion.
7	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	Jan 18	0	
Initial Operational Capability (IOC)	Feb 18	Jan 18	(1)	
Materiel Release 2 (MR2)	Dec 18	Dec 18	0	
Operational Capability 2 (OC2)	Jan 19	Jan 19	0	
Materiel Release 3 (MR3)	Dec 19	Oct 19	(2)	3
Operational Capability 3 (OC3)	Jan 20	Jan 20	0	3
Final Materiel Release (FMR)	Oct 19	Jun 22	32	4
Final Operational Capability (FOC)	Jan 20	Jan 22	29	4

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 and would be rescheduled to be delivered at IMR, at the completion of OT&E activities late in 2017.
3	Milestones MR3 and OC3 are new milestones associated with the approval of the third set of 4 aircraft.
4	FMR & FOC dates have moved to accommodate the purchase of an additional four aircraft.

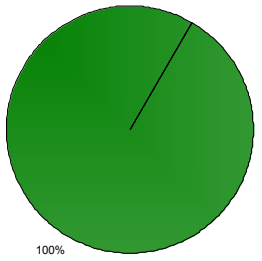
Schedule Status at 30 June 2017



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)	By IMR the following will be delivered: • **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 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 is expected to be achieved in January 2018.**	Not yet achieved
Final Materiel Release (FMR)	By FMR the following will be delivered: • **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 June 2022.**	Not yet achieved
Note		
The definitions of IMR and FMR were updated in the latest MAA, which was approved in October 2016.		

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 capability and performance risks associated with respective integration of the Air Vehicle and the Tactical Operations Centres (TOC) into the Defence single Information (SIE)	**Integration of the Air Vehicle and the Tactical Operations Centres (TOC) into the Defence Single Information Environment (SIE) risks have been downgraded to low due to successful and effective mitigation strategies, however capabilities require testing prior to risk closure.**
The Project has identified schedule risks associated with development and timely installation of the Aircrew Training Devices (ATD), aircrew training and potential delays importing **training devices and** spares due to export control restrictions and **contract delays**.	• Expedited construction of Operational Conversion Facility. • Continued, regular, engagement with USN and Boeing regarding Aircrew Training Device development **and acceptance**. • Continued work with US Navy International Programs Office and US Department of State to ensure clear understanding of US export controls for Australian P-8A **ATDs** spares and data. • **Software acceptance tasks and hardware delivery and installation tasks have been uncoupled in the schedule, to support timely installation of the ATDs** • **The Australian Embassy in the US has been closely engaged with their US State Department counterparts to enable export control decisions to be expedited.**
The Project has identified supportability risks associated with: • **potential delays importing Training System to support Ready for Training, due to export control restrictions** and • contract acquisition of a suitable range and depth of retail spares to support P-8A operations.	• 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. • Analysis of more mature spares modelling data, and a remodelling/adjustment of future spares purchases. • Agreement of access to USN wholesale spares pool. **The risk associated with the development of processes and establishing arrangements in support of the P-8A Sustainment System was realised as an issue with a medium rating.**

Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
The Project has identified capability and performance risks associated with the Mk 54 torpedo and the UNIPAC III (objective) Search and Rescue Kit.	• **Continued work with the US Navy to further investigate resolution and understanding of Mk54 performance and capability.** • **The UNIPAC III project resources have been rescoped to ensure effective resources have been applied to the program. The COA continues to work with the USN to schedule the most cost and time effective methods for approvals for this capability to be deployed from a P-8A. This risk has a low impact on capability as the interim Search and Rescue capability approved and is in place.**
The Project has identified schedule risks associated with development and timely installation of the: • **High Altitude Anti-submarine Warfare Weapon Capability for the MK54 torpedo.** • **Direct Infrared Counter Measures system.**	• **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 DIRCM USN developmental test schedule has yet to mature, with delays being experienced due to flight testing to be conducted by both the USN and USAF. ISRPO continue to monitor the situation to ensure capability schedules are met.**

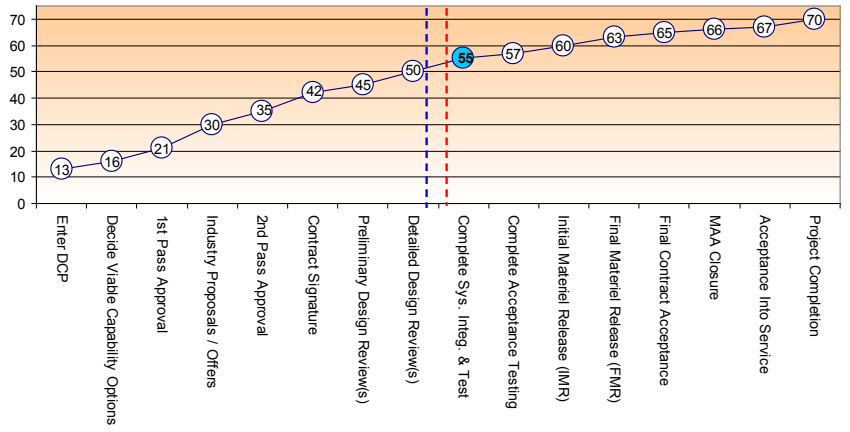
5.2 Major Project Issues

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.	• 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 the required remediation actions. • **Incorporation** of an Operational Loads Monitoring System on at least one P-8A aircraft **has now been contracted with Boeing by the USN**.
S&TE Support Solution for P-8A deficient. The deficiencies may cause an issue for both operational maintenance and serviceability.	**S&TE Support Solutions for P-8A issues were resolved and the have been or closed.**
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 Test	Project Status	8	8	8	7	8	8	7	54
	Explanation	• **Cost:** All major, initial, deliverables are now on contract. Contracted prices are within Project Budget. The Project Office have confidence that the remaining budget is sufficient. • **Technical Understanding:** Sustainment arrangements have been agreed in concept, but further work is required to document executable procedures. The CP with the USN provides insight and access to the P-8A capability. • **Operations and Support:** Australia continues to develop the mechanisms required to execute the proposed Cooperative Sustainment arrangements with the USN.							



2015-16 MPR Status ---- | 2016-17 MPR Status ----

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).	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
Purchase of OEM engines are more expensive through the CP than via DCS with the OEM - however ensure the articles can be supported by the USN.	Contract Management
INMARSAT connectivity and who pays for each segment is rarely clear. Ensure ownership of SIM cards as well as assigning the aircraft tail number to the correct SIM card is well understood.	Requirements Management
NAVAIR structures engineers supporting PMAs are generally conservative until they know more detail. Ensure they are aligned with the PMA priorities in terms of timeliness of product delivery	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 2015–16

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Adam Brown **(to Dec 16)** **AIRCDRE Leon Phillips (Dec 16–current)**
Program Director	GPCAPT Debbie Richardson
Project Manager	WGCDR Peter Hay **(to Jan 17)** **WGCDR James Badgery (Jan 17–current)**

Project Data Summary Sheet[134]

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)
Total Approved Budget (Current)	**$3,733.8m**
2016-17 Budget	**$175.5m**
Project Stage	Initial Materiel Release
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The Multi-Role Helicopter (MRH) Program is a key component of the Australian Defence Force (ADF) Helicopter Strategic Master Plan that seeks to rationalise the number of helicopter types in ADF service. The MRH Program consists of three phases of AIR 9000. Phase 2 (12 helicopters) is the acquisition of an additional Squadron of troop lift aircraft for the Australian Army, Phase 4 (28 helicopters) will replace Army's Black Hawk helicopters in the Air Mobile and Special Operations roles, and Phase 6 (6 helicopters) will replace Royal Australian Navy (RAN) Sea King helicopters in the Maritime Support Helicopter role. All three phases are grouped under the AIR 9000 MRH Program.

1.2 Current Status

On 28 November 2011, the Minister for Defence announced this project as a Project of Concern.

Cost Performance

In-year

The project has spent **$104.4m** against a budget of **$175.5m** to **June 2017**. The **$71.1m underspend to June 2017 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 **loss**.

Project Financial Assurance Statement

As at 30 June 2017, 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**, Fast Roping, Rappelling and Extraction System, Eurogrid Tactical Mission Computer, Multi Function Displays New Generation, and Landing Helicopter Dock supplies support**.

Schedule Performance

As a result of the Deed 2 negotiations with the contractor, the final delivery of aircraft has been 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, and the second Operational Capability Land (OCL2) in March 2016. The FMR and FOC dates are currently under review and are expected to be clarified in **Quarter 4 2017** with the approval of a revised Materiel Acquisition Agreement.

Forty six aircraft have been accepted into service **with the final aircraft programmed for acceptance in July 2017**. The first

134 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.

thirteen aircraft required an in-service retrofit to bring them up to the full Phase 2/4/6 capability baseline. All thirteen aircraft have now been retrofitted and accepted back into service.

Remediation to rectify concerns regarding configuration management issues of production aircraft has slowed the acceptance of production aircraft, this in turn has slowed the rate of capability growth.

The Chief of Army has agreed to delay introduction of MRH90 into 6th Aviation Regiment by 3 years, because of reliability and design shortfalls, extending the Black Hawk fleet to 2022 to mitigate the risk to capability. The delayed introduction to 6th Aviation Regiment will mean the growth in total MRH90 flying hours will temporarily stabilise below the planned mature rate. The aircraft intended for 6th Aviation Regiment will continue to be accepted and rotated through the fleet.

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.

MRH is currently achieving three quarters of the required Rate of Effort (ROE). . However, this is due to the proportionately larger stock of spares which is designed to support the full fleet. Further improvements to aircraft serviceability has commenced as part of a maintenance reliability program to maintain and subsequently improve this ROE as the final aircraft are delivered.

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 Group Australia Pacific (Airbus Group 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 Group 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 Group 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. Cabin integration issues, including the Fast Roping and Rappelling Device, the self-defence gun mount and the cabin seating have impacted the achievement of these capability milestones.

The volume of engineering change proposals has impacted aircraft delivery. In addition, the project is managing issues affecting Final Materiel Release including the Common Mission Management System, a replacement Fast Roping, Rappelling and Extraction System, the Electronic Warfare Self Protection System, the Full Flight Mission Simulator, the Enhanced Cargo Hook System, the Taipan Gun Mount and the Aero-medical Evacuation Capability.

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.

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.

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**	953.9		
Jun 06	Real Variation – Scope	2,565.6		2
Oct 06	Real Variation – Transfer	(219.0)		3
Oct 08	Real Variation – Transfer	(20.0)		4
Oct 08	Real Variation – Scope	31.5		5
			3,312.0	
Jul 10	Price Indexation		679.8	6
Jun 17	Exchange Variation		(261.3)	
Jun 17	**Total Budget**		3,733.8	
	Project Expenditure			
Prior to Jul 16	Contract expenditure – Airbus Group AP	(2,536.2)		
	Contract expenditure – CAE Australia	(169.7)		
	Other Contract Payments / Internal Expenses	(218.3)		
			(2,924.2)	
FY to Jun 17	Contract expenditure – Airbus Group AP	(80.4)		
	Contract expenditure – CAE Australia	(2.3)		
	Other Contract Payments / Internal Expenses	(21.7)		7
			(104.4)	
Jun 17	**Total Expenditure**		(3,028.6)	
Jun 17	**Remaining Budget**		705.1	

Notes	
1	This project's original budget amount is that prior to achieving Second Pass Government Approval.
2	Incorporation of AIR 9000 Phase 4 (Black Hawk Upgrade/Replacement) and AIR 9000 Phase 6 (Maritime Support Helicopter).
3	The funding related to facilities elements of the project was managed by Defence Estate and Infrastructure Group (DE&IG).
4	Transfer to DE&IG for Facilities Infrastructure.
5	Real Cost Increase funding for Full Flight Mission Simulator.

6	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.
7	Other expenditure: $21.7m for operating expenditure, contractors, consultants, contingency and 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
174.4	180.8	175.5	The variance between PBS and PAES estimates is due to new prime contract deliverables in Financial Year 2016-17 in relation to Eurogrid Tactical Mission Computer and Multi Function Displays New Generation and foreign exchange funding increase. The variance between PAES and Final Plan estimates primarily reflects reprogramming of prime contract milestone and Full Flight Mission Simulator Contract deliverables.
Variance $m	6.4	(5.3)	Total Variance ($m): 1.1
Variance %	3.7	(3.0)	Total Variance (%): 0.6

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(77.5)	Australian Industry	The $71.1m underspend reflects net adjustments to payment phasings across the Prime Acquisition, Full Flight Mission Simulator and Upgrade Contract, a foreign exchange loss against foreign currency payments and other minor procurement requirements.
			Foreign Industry	
			Early Processes	
		6.9	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
		(0.5)	Effort in Support of Operations	
			Additional Government Approvals	
175.5	104.4	(71.1)	**Total Variance**	
		(40.5)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Airbus Group AP	Jun 05	846.3	2,888.4	VARIABLE	ASDEFCON (Strategic)	1, 2, 3, 4
CAE Australia	Dec 07	180.5	176.6	VARIABLE	ASDEFCON (Complex)	4, 5

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 2016, there have been key CCPs processed for a Fast Roping, Rappelling and Extraction System, Eurogrid Tactical Mission Computer, Multi Function Displays New Generation, and Landing Helicopter Dock supplies support
4	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 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.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
Airbus Group AP	12	47	MRH90 Aircraft	1
CAE Australia	2	2	Full Flight and Mission Simulator	

Major equipment received and quantities to 30 Jun 17

Forty six 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 (Most Recent)	Jul 14	Jun 17	Jun 17	35	10
	MRH aircraft #47 (Next aircraft)	Jul 17	Jul 17	Jul 17	0	10
	MRH aircraft #47 (Final Aircraft)	Jul 17	Jul 17	Jul 17	0	

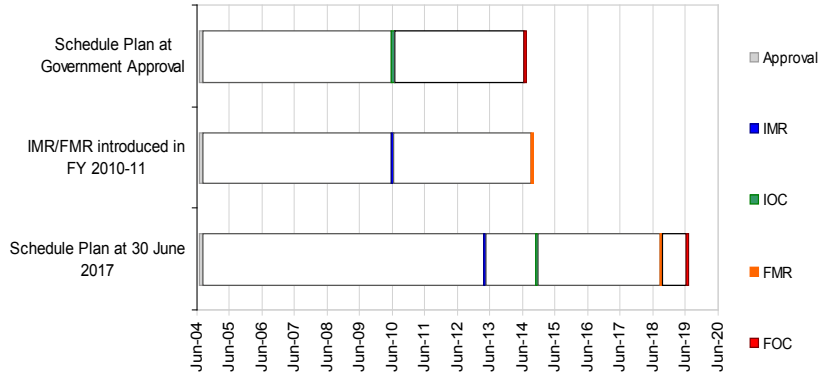
Notes	
1	Phases 4/6 were rolled into the MRH Program from aircraft 13 onwards, which increased the number of aircraft from 12 to 46.
2	The acceptance and test-readiness of the Ground Mission Management System (GMMS) was broken into six lots post contract signature. The lots compose of GMMS deliverables 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 Group 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 most recent aircraft (#46) accepted in June 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	Oct 18	48	4,5
Final Operational Capability (FOC)	Navy	Dec 12	-	-	5,6
	Army	Jul 14	Jul 19	60	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 Group 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 most recent aircraft (#46) accepted in June 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 2017 with the approval of a revised Materiel Acquisition Agreement.
5	FOC is now only forecast as a single date. The last capability subset is to be realised by Army.

Schedule Status at 30 June 2017

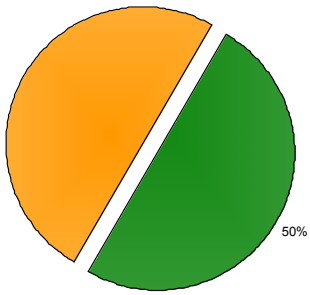


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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, 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. 47 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 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
There is a **risk** that the achievement of the FMR will be affected by delays in the delivery of supplies according to the contracted schedule leading to an impact on cost, schedule and performance.	a. Formation of Cabin Integration Working Group. b. Industry Prototyping. c. Accept incremental improvements. d. Use of Liquidated Damages as offset. e. Leverage NATO Helicopters 90 community solutions. This risk has been amended to reflect the focus of delivering materiel leading up to FMR.
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.
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
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**

5.2 Major Project Issues

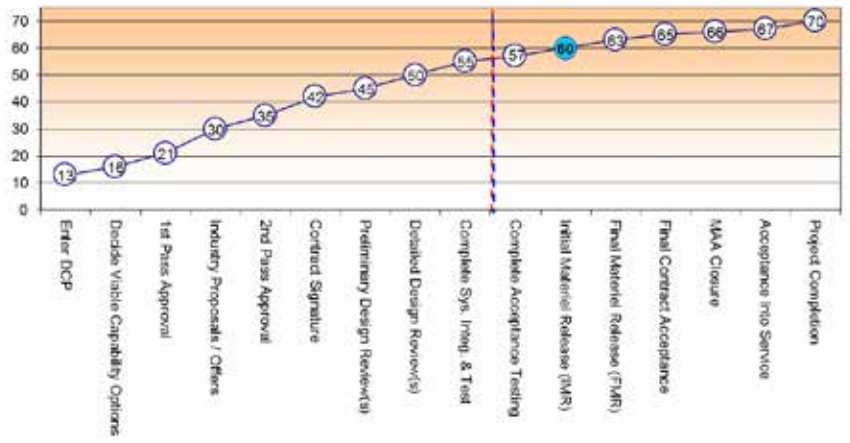
Description	Remedial Action
The Full Flight Mission Simulator configuration alignment with the MRH90 aircraft has been affected by the length of time required to upgrade to Sustainment Software Build 1.1.	1. Evaluate options for consolidating Full Flight Mission Simulator technologies to a single manufacturer. 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 MRH90 Search / Landing Light (SLL) was assessed as not fit for purpose due to beam width and lack of covertness. This reduced the range of illuminations under which the aircraft could conduct night flying and limited operational use.	1. Identify a replacement bulb for SLL capability. 2. Implement solution to meet capability milestones. A satisfactory replacement SLL solution has been identified, hence this Issue has been retired following delivery of the solution (Novermber 2016).
The Electronic Warfare Self Protection system is not performing to specification during specific aircraft manoeuvres.	1. Industry to 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 Defence Science and Technology Group. 3. Verification and validation of the remediation activities by Industry. 4. Implement solution to meet capability requirements.
The Identification, Friend or Foe Mode 4 fitted to the MRH90 is not performing during specific scenarios.	**This issue has been retired due to the achievement of service release in July 2016.**
The volume of engineering change proposals has impacted the timing and effective delivery of aircraft.	**This issue has been downgraded due to the increasing maturity of engineering processes.**
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.
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. Implement agreed 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.	**5. Formation of user working group. 6. Develop and agree on options to meet capability requirements. 7. 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.**

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 late 2017 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.							



2015-16 MPR Status - - - -

2016-17 MPR Status - - - -

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 2016-17

Position	Name
Division Head	MAJGEN Andrew Mathewson
Branch Head	BRIG Anthony McWatters (Oct 15 **to Apr 17**) **BRIG Jeremy King (Apr 17 to current)**
Project Director	COL James Allen **(to Jan 17)** **COL Brad Warren (Jan 17 – current)**
Project Manager	Mr Hilton Hunter

Project Data Summary Sheet[135]

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
Total Approved Budget (Current)	**$3,495.0m**
2016-17 Budget	**$165.8m**
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 Jun 2017**, the project spent **$168.2m** against a budget of **$165.8m**. The **overspend** of **$2.4m was caused by increased FMS case billing sought for Jun quarter 2017, partially offset by delayed contract signatures (and spend) for Advanced MTTES and Deployable Mission Planning Facilities, and slow billing for US based Initial Operational Test and Evaluation (IOT&E) activities.**

Project Financial Assurance Statement

As at 30 June 2017, 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 achieve**d** the initial In-Service Date milestone in January 2017, as well as the subsequent **Initial** Materiel Release **(IMR)** milestone **on schedule on 14 Feb 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**

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.

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** 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**.

The project is due to achieve its next Major Materiel release (MR 2) milestone in May 2018. This milestone is for an initial MTTES training capability in Queensland.

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 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 will be procured. Air Combat Manoeuvring Instrumentation pods will also be procured for the Growler fleet to maximise training effectiveness.

In addition to modifying aircrew and maintenance training devices 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 will also acquire 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 AIR 5349 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.

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.

IMR Caveats
Achievement of the IMR Milestone was declared with two caveats in Feb 2017 relating to the following issues:
• Delay to the upgrade to the Tactical Operational Flight Trainers (TOFTs).
• Delayed delivery of Aircrew Computer Based training.
Further details are provided in Section 5.2.

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 once the EA-18G is introduced to service. 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.

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
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**
			1,421.5	
Jun 17	Exchange Variation		**918.1**	
Jun 17	**Total Budget**		**3495.0**	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – US Government (AT-P-SCI)	**(1,253.7)**		**7**
	Contract Expenditure – US Government (AT-P-LEN)	**(591.2)**		
	Contract Expenditure – US Government (AT-P-AZN)	**(40.9)**		**7**
	Contract Expenditure – US Government (AT-P-GUW)	**(17.0)**		**7**
	Contract Expenditure – US Government (AT-D-YLB)	**(15.2)**		**7**
	Contract Expenditure – US Government (AT-P-GTM)	**(12.3)**		**7**
	Other Contract Payments / Internal Expenses	**(38.7)**		**8**
			(1,969.1)	
FY to **30 Jun 17**	Contract Expenditure – US Government (AT-D-YLB)	**(46.3)**		**7**
	Contract Expenditure – US Government (AT-P-GUW)	**(28.5)**		
	Contract Expenditure – US Government (AT-P-GTM)	**(23.4)**		**7**
				7
	Contract Expenditure – US Government (AT-P-LEN)	**(21.4)**		**7**
	Contract Expenditure – US Government (AT-P-AZN)	**(7.2)**		**7**
	Other Contract Payments / Internal Expenses	**(41.4)**		**9**
			(168.2)	
FY to Jun 17	**Total Expenditure**		**(2,137.3)**	
Jun 17	**Remaining Budget**		**1357.7**	

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: Direct Commercial Sales contracts for F414 Engine Spares ($11.2m), Air Combat Manoeuvring Instrumentation (ACMI) pods ($5.5m), FMS Weapons procurement – Case AT-P-AYW ($3.9m). Remaining expenditure comprises: Operating expenditure, contractor support, consultants, and other capital expenditure not attributable to the aforementioned 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
242.0	157.4	165.8	Key drivers to the variance between PBS and PAES is revised FMS disbursement forecasts and phasings to outer years, and the September 16 release of reserved termination liability funds which impacted the value of case payments required. Key driver to the variance between PAES and final plan is the funding transfer in support of the April 2017 Advanced MTTES approval.
Variance $m	(84.7)	8.4	Total Variance ($m): (76.3)
Variance %	(35.0)	5.3	Total Variance (%): (31.5)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(3.4)	Australian Industry	Variance due to increased FMS case billing for Jun quarter 2017, partially offset by delayed contract signatures (and spend) for Advanced MTTES and Deployable Mission Planning Facilities, and slow billing for US based Initial Operational Test and Evaluation (IOT&E) activities.
		(8.0)	Foreign Industry	
			Early Processes	
		(8.0)	Defence Processes	
		21.8	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
165.8	168.2	2.4	**Total Variance**	
		1.5	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun17 $m	Type (Price Basis)	Form of Contract	Notes
US Government (AT-P-LEN)	Aug 12	944.2	893.6	Reimbursement	FMS	1, 2
US Government (AT-P-AZN)	May 13	36.2	79.0	Reimbursement	FMS	1, 2
US Government (AT-P-SCI)	Jul 13	1,313.1	1,526.5	Reimbursement	FMS	1, 2
US Government (AT-P-GTM)	Sep 13	19.3	85.5	Reimbursement	FMS	1, 2, 3
US Government (AT-P-GUW)	Feb 15	88.6	150.3	Reimbursement	FMS	1, 2,5
US Government (AT-D-YLB)	Feb 15	84.6	127.6	Reimbursement	FMS	1, 2, 4
CEA Technologies Pty Ltd	Jun 17	87.3	87.3	Firm	Official Order	6

Notes

1	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 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

Contractor	Quantities as at Signature	Quantities as at 30 Jun 17	Scope	Notes
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 17				
Transfer of ownership for aircraft procured under ATPSCI commenced in Jan 17 and transfer of all 12 aircraft is now complete.				
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	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.					

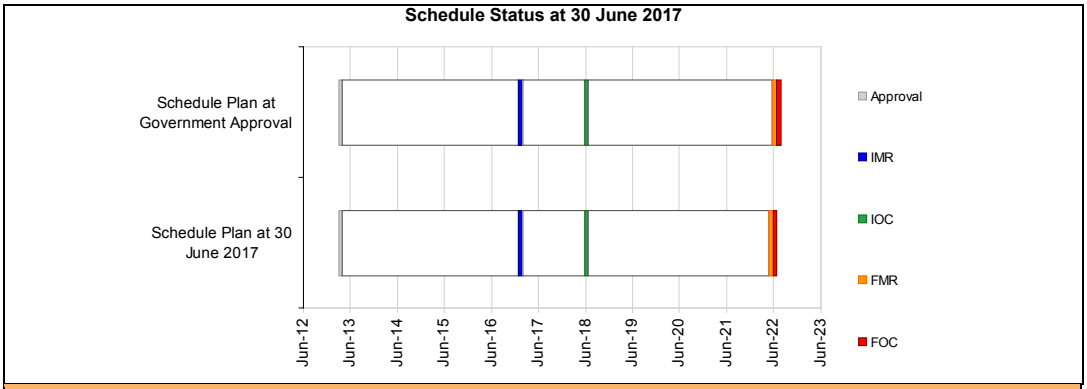
3.2 Contractor Test and Evaluation Progress

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	TBD	N/A	May 18		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	Jul 18	10	3
	Modified IVEMTs	Nov 16	N/A	Nov 16	0	
	MTTES–Queensland Ranges	TBD	N/A	May 18	0	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.
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.
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

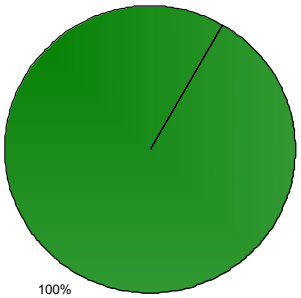
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Feb 17	Feb 17	0	1
In-Service Date (ISD)	Jan 17	Jan 17	0	
Materiel Release 2 (MR2)	Oct 17	May 18	7	2
Materiel Release 3 (MR3)	Jul 18	Aug 18	1	
Materiel Release 4 (MR4)	Mar 19	Sep 19	6	3
Materiel Release 5 (MR5)	Jul 19	Jul 19	0	
Materiel Release 6 (MR6)	Mar 20	Mar 20	0	
Materiel Release 7 (MR7)	Jul 20	Jul 20	0	
Materiel Release 8 (MR8)	Jul 21	Jul 21	0	
Initial Operational Capability (IOC)	Jul 18	Jul 18	0	
Final Materiel Release (FMR)	Jul 22	Jun 22	(1)	
Final Operational Capability (FOC)	Jul 22	Jun 22	(1)	



Note
Forecast dates in Section 3 are excluded from the scope of the review.
1. IMR was declared with Caveats on 14 Feb 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.
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.

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. • Sufficient aircrew and maintenance personnel to support Growler operations from ISD. • Initial in-country aircrew training. **IMR was declared on 14 Feb 2017.** **The caveats associated with this declaration are detailed in Section 5.2.**	**Achieved 'with caveats'**
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.	Not yet achieved

	FMR is a future dated milestone projected for June 2022.	

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a possibility that the Growler support contract will not be in place to support post ISD activities.	This risk was closed following the establishment of the Air Combat and Electronic Attack Support Contract.
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 support contracts for MTTES will not be established in time to meet Operative Dates.	This risk has been closed with a revised contracting strategy that establishes short term support arrangements prior to the required MTTES operative dates.
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
N/A	N/A

5.2 Major Project Issues

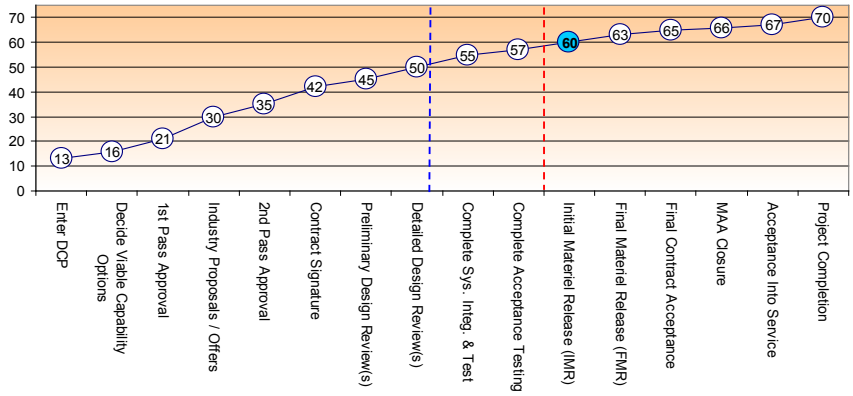
Description	Remedial Action
Late Delivery of the upgrade to the Tactical Operational Flight Trainers (TOFTs).	The delay to the TOFT was a deliberate decision made to reduce the risk of extended TOFT down time for the conduct of the upgrade. This was achieved by agreeing to a revised schedule that enabled US based upgrades to be conducted prior to the Australian based upgrade. The upgrade is currently in progress and on track to be ready for training in July 17.
Late Delivery of Aircrew Computer Based Training (CBT).	Delivery of Aircrew CBT for the aircraft software build is late due to delays in contract award and materiel release concerns. An interim solution has been delivered and the new Aircrew CBT package is due to be delivered by the end of 2017.

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	9	8	8	9	58
	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 Initial Operational Test and Evaluation is not yet complete.							



2015–16 MPR Status - - - - 2016–17 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

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Gregory Hoffmann
Project Director	Mr Gavin Healy
Project Manager	WGCDR Darren Spee (to Jan 17) WGCDR Andrew Harrigan (Jan 17 – current)

Project Data Summary Sheet[136]

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
Total Approved Budget (Current)	**$3,462.5m**
2016–17 Budget	**$141.0m**
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 underspend of $17.3m is primarily caused by delays in disbursements and delivery against the MK54 Torpedo FMS case. The Project has also experienced delays in invoicing for Facilities, minor Project related expenditure and ANZAC & AWD ship integrations. This has been partially offset by the increased expenditure on the MH-60R FMS Case and FOREX gains.

Project Financial Assurance Statement

As at **30 June 2017**, 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)**, 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.

Twenty **four** aircraft have now been accepted.

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.

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, as of **31 March 2017** 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 for the period 2018 to 2028.

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 Australia 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 **two** 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.

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		
Jun 14	Real Variation – Budgetary Adjustment	(39.2)		3
			2,990.1	
Jul 10	Price Indexation		0.1	4
Jun 17	Exchange Variation		471.9	
Jun 17	**Total Budget**		3,462.5	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – US Government (AT-P-SCF)	(1,683.9)		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	(85.7)		6
			(1,889.1)	
FY to Jun 17	Contract Expenditure – US Government (AT-P-SCF)	(74.7)		5
	Contract Expenditure – US Government (AT-P-AHV)	(7.9)		5
				5
	Other Contract Payments / Internal Expenses	(41.0)		7
			(123.7)	
	Total Expenditure		(2,012.8)	
Jun 17	**Remaining Budget**		1,449.7	

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 Sonobuoys ($14.2m), ANZAC, AWD and FFG Ship Modifications ($8.2m), Facility related expenditure ($4.8m), Spares ($4.4m), DSTG ($3.0m), contractor support ($2.0m), Technical Services ($1.6m), Freight ($1.3m), Resident Project Team ($0.6m), travel ($0.5m), legal support and general support activities ($0.5m).**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
230.0	183.9	141.0	PBS to PAES: **Variation is primarily due to reprogramming, slippage of FMS billing, slippage of integration activities, and foreign exchange gain. This has been partially offset by increased requirements for facilities, sonobuoys and other project related costs.** PAES to Final Plan: **Variation is primarily due to the reprogramming of FMS billing, slippage of integration activities, reduction in facilities remediation due to funding covered by Regional Facilities budget and reduction in other project related activities.**
Variance $m	(46.1)	(42.9)	Total Variance ($m): (89.0)
Variance %	(20.0)	(23.3)	Total Variance (%): (38.7)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The variance is primarily caused by delays in disbursements and delivery against the MK54 Torpedo FMS case. The Project has also experienced delays in invoicing for Facilities, minor Project related expenditure and ANZAC & AWD ship integrations. This has been partially offset by the increased expenditure on the MH-60R FMS Case and FOREX gains.
		(11.5)	Foreign Industry	
			Early Processes	
		(5.8)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
141.0	123.7	(17.3)	**Total Variance**	
		(12.3)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $m	Type (Price Basis)	Form of Contract	Notes
US Government (AT-P-SCF)	Jun 11	2,090.3	2,417.5	Variable	FMS	1, 3
US Government (AT-P-AHV)	Aug 11	168.1	209.1	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	14.3	Variable	FMS	1, 3

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 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 17	Scope	Notes
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-P-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	

Major equipment received and quantities to 30 Jun 17

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

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	Jun 19	Jun 19	9	1
	Air Warfare Destroyer	TBA	TBA	TBA	TBA	
Acceptance	ADF Mission System Options – Phase 1	Aug 16	Aug 16	Sep 16	1	1
	ADF Mission System Options – Phase 2	Sep 18	Dec 18	Dec 18	3	1
	Acceptance of first MH-60R	Jun 14	Dec 13	Dec 13	(6)	
	Acceptance of final MH-60R	Sep 18	Aug 16	Aug 16	(25)	
	Air Warfare Destroyer	TBA	TBA	TBA	TBA	

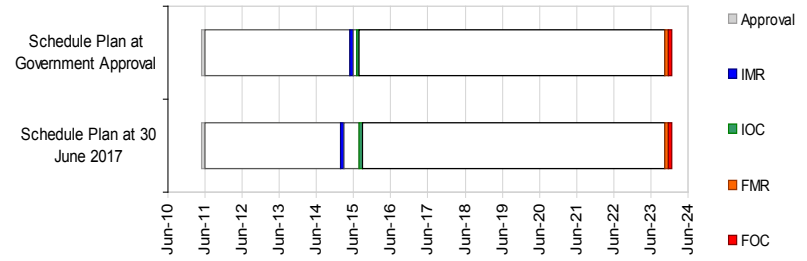
Notes	
1	The ADF Mission System Options were split into two phases. Phase 1 SOW for ADF Unique Mission System Options was agreed by the PO, USN, Sikorsky and Lockheed Martin. SOW for Phase 2 was released as part of USN request for tender 26 February 2014, and contract signature with Lockheed Martin was achieved in October 2014. 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.

3.3 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	Jun 19	0	
Materiel Release 4 (MR4)	Dec 20	Dec 20	0	
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.**

Schedule Status at 30 June 2017

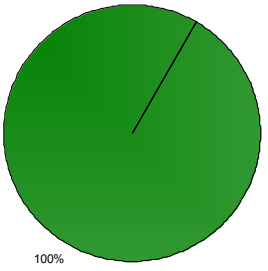


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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 2016-17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

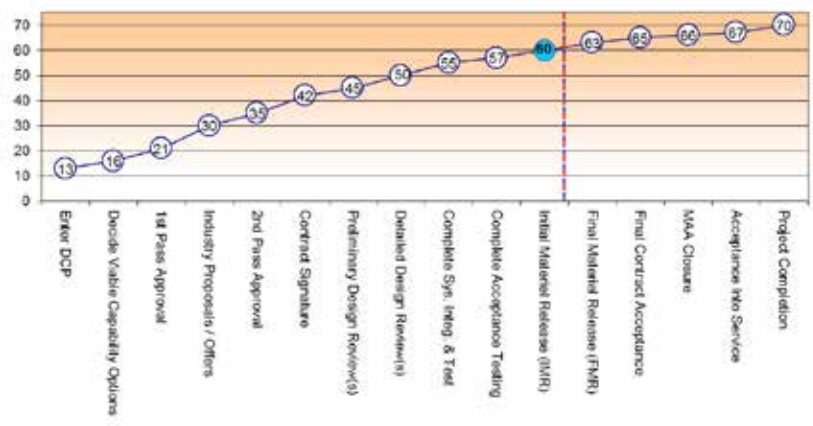
Description	Remedial Action
N/A	N/A

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							
		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	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.							



2015-16 MPR Status - - - -	2016-17 MPR Status - - - -

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 2016-17

Position	Name
Division Head	MAJGEN Andrew Mathewson AM
Branch Head	CDRE Scott Lockey **CSC RAN**
Project Director	CAPT Peter Ashworth **RAN** (to Nov 16) **CAPT Malcolm Wright RANR (Nov 16 current)**
Project Manager	CMDR Michael Rainey **RAN**

Project Data Summary Sheet[137]

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
Total Approved Budget (Current)	**$3,363.5m**
2016-17 Budget	**$670.3m**
Project Stage	Detailed Design Review
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);
- 1,704 trailers will be acquired from Haulmark Trailers (Australia);
- 122 Geländewagen (G-Wagon) 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;
- 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 June 2017**, financial year **2016-17** expenditure was **$701.1m** against the forecast expenditure of $**670.3m. The variation is primarily due to delivery of Batch 7 and partial delivery of Batch 8 earlier than forecast and payments made in the current year but budgeted for in the following year.**

Project Financial Assurance Statement

As at 30 June 2017, 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

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.

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 Preliminary Design Phase and Detailed Design Phase. Contract performance and achievement of Financial Milestones is being monitored by the RMMV Executive Board who have provided assurance that Financial Year targets will be achieved.

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 June 2017 Rheinmetall MAN Military Vehicles Australia has delivered 563 of 2,536 vehicles and Haulmark Trailers (Australia) has delivered 457 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, integration issues with new generation communication equipment**, capacity of LAND 121 Introduction into Service facility at Meeandah, delay to the recovery capability** and access to public roads. The key issues concerning the project are the performance of key subcontractors, and interface issues between vehicles, trailers and modules.

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 deliver**ed** 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.

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.

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	
Jun 17	Exchange Variation		**78.8**	
Jun 17	**Total Budget**		**3,363.5**	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	**(191.4)**		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	**(60.6)**		
	Rheinmetall MAN Military Vehicles Australia (Support)	**(0.4)**		
	Other Contract Payments / Internal Expenses	**(71.2)**		7
			(323.7)	
FY to-**Jun 17**	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	**(610.8)**		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	**(63.3)**		
	Rheinmetall MAN Military Vehicles Australia (Support)	**(4.0)**		
	Other Contract Payments / Internal Expenses	**(23.1)**		**8**
			(701.1)	
Jun 17	**Total Expenditure**		**(1,024.8)**	9
Jun 17	**Remaining Budget**		**2,338.8**	

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.
7	Expenses comprise of ($**27.8**m) for the acquisition of G-Wagons by LAND 121 Phase 3A on behalf of LAND 121 Phase 3B, ($**21.5**m) for salaries, **($4.8m) for the acquisition of trailers, ($1.7m) for the Protected Mobility Vehicle** and ($**15.4m**) for other project office costs not associated with the prime contracts.
8	Expenses comprise of ($**7.0m) for** the Protected Mobility Vehicle **($3.9m)** for salaries, and ($**12.1m**) 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
685.6	681.6	670.3	PBS to PAES: Variation is due to bringing forward the delivery of trailers into 2015-16 and vehicles into 2016-17 to align with industry's capability to deliver. PAES to Final Plan: Variance is due to an update to PBS 2017-18 exchange rates.
Variance $m	(4.0)	(11.3)	Total Variance ($m): (15.3)
Variance %	(0.6)	(1.7)	Total Variance (%): (2.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		15.5	Australian Industry	Variance is primarily due to delivery of Batch 7 and partial delivery of Batch 8 earlier than forecast and payments made in the current year but budgeted for in the following year.
			Foreign Industry	
			Early Processes	
		15.3	Defence Processes	
			Foreign Government Negotiation/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
670.3	701.1	30.8	**Total Variance**	
		4.6	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $m	Type (Price Basis)	Form of Contract	Notes
Rheinmetall MAN Military Vehicles Australia (Acquisition)	Jul 13	1,585.9	1,892.5	Variable	ASDEFCON	1, 2
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	Jul 13	397.7	493.2	Variable	ASDEFCON	1, 2
Rheinmetall MAN Military Vehicles Australia (Support)	Jul 13	32.3	47.4	Variable	ASDEFCON	1, 2

Notes

1	Additional commitments of $28.3m and $4.7m are included in the Mercedes Benz Australia Pacific Pty Ltd and Haulmark Trailers contracts in Section 2.3 of the LAND 121 Phase 3A Project Data Summary Sheet. These items are being procured by LAND 121 Phase 3A, on behalf of the LAND 121 Phase 3B project. Commitments in relation to General Maintenance Vehicles will be funded by LAND 121 Phase 3B.
2	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 17	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 17

RMMVA Batch 0 - Two MHC vehicles have been accepted to support design and verification activities.
RMMVA Batch 01A and 02A - 49 vehicles and 60 flatrack modules have been delivered to support training development activities.
RMMVA Batches 1-8A - Delivered 514 Vehicles and, 1,101 Flatracks including 347 Flatrack Cargo Gate Kits.
Haulmark Trailers (Australia) has delivered (as at 30 June 2017): 229 Medium weight Cargo trailers, 206 Heavy ILH trailers, 15 Heavy Equipment Trailers, 1 Medium Equipment Transporter, 1 Heavy Bulk Fuel Tanker, 5 Dolly Low Loaders, 140 Cargo Kits and 40 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, 4
	Trailers	Jun 16	Jan 17	Jan 17	7	1, 5, 8
Detailed Design	Vehicles	May 15	Sep 16	Jun 17	25	1, 2,
	Modules	Nov 14	Jun 15	Mar 16	16	1, 4,
	Trailers	Jan 17	Jul 17	Jun 17	5	1, 5, 8
Critical Design	Vehicles	Aug15	Jan 17	Nov 17	27	1, 2 3, 6, 7
	Modules	Mar 15	Nov 15	Sep 16	18	1, 3, 4 6

Notes	
1	All dates represent the Approval of the exit for the Reviews of the last vehicle, module and trailer variants.
2	All vehicle and trailer variants have exited preliminary and detailed design reviews. All vehicle variants, with the exception Medium Recovery vehicles, have exited CDR.
3	Delays by RMMVA to secure its subcontractor has impacted the completion of nominated review.
4	All module variants have exited all design reviews, and are now progressing through the Verification Testing phase.
5	All ten trailer variants have exited all design reviews.
6	Senior management attention (Defence and the RMMV Board) is expected to improve the schedule performance for completion of the remaining single vehicle design review and Acceptance Test and Evaluation for vehicles and modules.
7	Current Planned Date changes to vehicles Detailed and Critical Designs are IAW CCP064 signed 15 July 2016. Only design reviews not completed prior to May 2016 per RMMVA's CMS Update 31 were re-baselined.
8	Date changes were IAW Group C BCR (June 2016) outcomes and agreements.

3.2 Contractor Test and Evaluation Progress

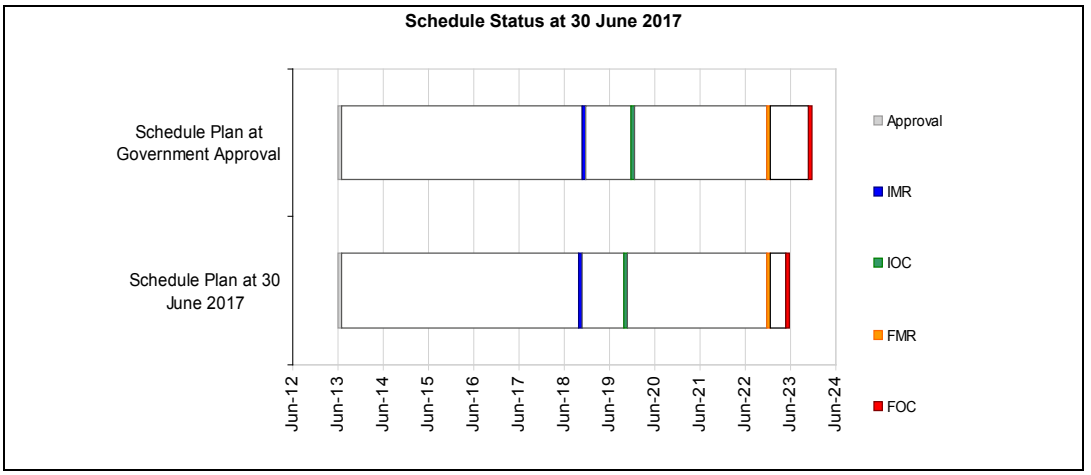
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration, Acceptance Test and Evaluation (AT&E)	Vehicles	Jul 16	Aug 18	Apr 19	33	1, 2, 3, 4
	Modules	Nov15	Jun 17	Aug 18	33	1, 2, 3, 4, 5
	Trailers	Sep 17	May 18	May 18	8	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	Nov 18	(1)	1
Initial Operational Capability (IOC)	Dec 19	Nov 19	(1)	
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.

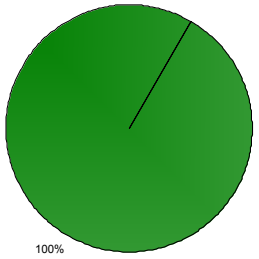


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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: 101 medium and heavy vehicles, 250 modules, 59 trailers, sufficient training for operators and maintainers to support Army's introduction into service plan and adequate logistic support arrangements. Forecast achievement November 2018.	Not yet achieved
Final Materiel Release (FMR)	FMR requires the following to be delivered: 2,707 medium and heavy vehicles, 3,858 modules, 1,704 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 **is diminishing** as the design review process nears completion.
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.
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
Emergent Risks (risk not previously identified but has emerged during 2016–17)	
Description	Remedial Action
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.**	**Fleet Transition Working Groups (AHQ/RAAF/JLC and Project) have an established plan in place to manage this risk.** **Additionally, an Introduction and Withdrawal Working Group has been established to coordinate and manage this risk.**
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.**	**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.**

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.** There is still concern that Holmwood Highgate may pursue a similar approach to Varley, as they recently advised RMMVA that they are unable to deliver against the contract schedule and are developing a remediation plan. Although there will be some schedule refinements, there are no impacts to the achievement of MAA milestones anticipated. This issue is being closely managed at **Assistant Secretary** level and weekly updates are sought from RMMVA to assess progress and, where the option is available, further negotiation may occur.
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.	**Establish an Interface Control Working Group. (ICWG)** The project is actively managing a range of integration and interface issues between vehicles, modules and trailers that have a potential impact on cost, schedule and performance. The ICWG convene as required (last one held 12 Nov 15) with the CoA, prime contractors and subcontractors (as appropriate) where integration

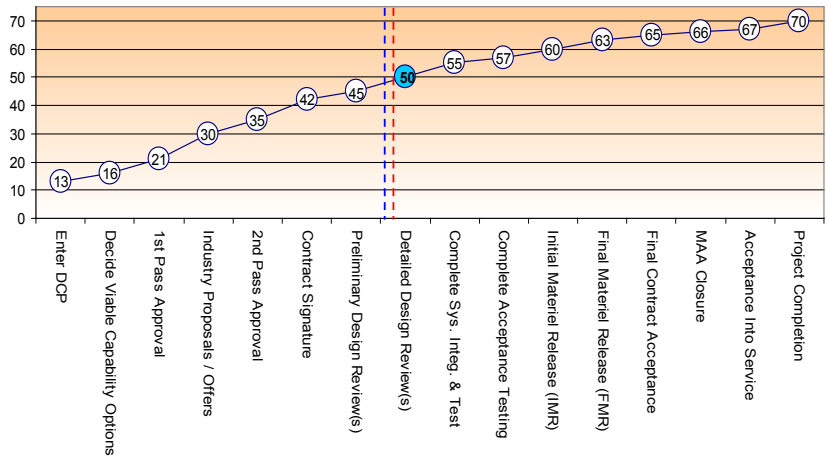
	issues affecting trailers, vehicles and modules are identified and addressed. Interface Control Documents have also been developed for vehicles, modules and trailers, and designs are under constant review. Prototype vehicles were acquired to support trailer verification testing.
42M Medium Recovery Vehicle **The project has been affected by the delay in design and verification of the 42M recovery vehicle impacting on cost, schedule and performance.**	**Engagement with key stakeholders (RMMVA and RMMV) and implementation of a range of system engineering processes including delivery of prototypes.** **The project is actively managing this issue with regular workshops and meetings held with RMMVA. An additional test vehicle was provided for Development Test and Evaluation Original Equipment Manufacture qualification. Detailed Design Review and stowage trials were successfully conducted (May 2017) in the USA with CoA presence. Schedule slippage was agreed in principle and some changes have occurred to specifications. Critical Design Review is due in October 2017.**

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	8	7	7	7	7	**7**	6	**49**
	Explanation	• **Schedule:** Concurrent activity and schedule float contribute to confidence that schedule will be within the tolerance of the Materiel Acquisition Agreement. • **Technical Understanding:** Technical data and Intellectual Property provisions will allow Defence to operate, support, maintain, modify and dispose the materiel elements of the capability. • **Operations and Support:** Detailed operational and support requirements have been specified and In-Service Contracts are in place.							



2015-16 MPR Status - - - -	2016-17 MPR Status - - - -

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	Contract Management

avoid impact on contract deliverables and slippage to key engineering reviews.	
'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 2016–17

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

Project Data Summary Sheet[138]

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
Total Approved Budget (Current)	**$3,091.9m**
2016–17 Budget	**$18.2m**
Project Stage	Initial Materiel Release
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The JP 2048 Phase 4A/4B project is providing the Australian Defence Force (ADF) with an increased amphibious deployment and sustainment capability through the acquisition of two Landing Helicopter Docks (LHDs) 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

End of year underspend is $5.6m. This is primarily due to the delay in Prime Contractor payment milestones and the Survey and Quote work for the inventory and critical spares.

Project Financial Assurance Statement

As at 30 June 2017, project 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

The Prime Contractor Final Acceptance milestone has slipped to June 2018 (33 months behind schedule). This will impact Final Materiel Release (FMR), slipping it from November 2016 to September 2018 (37 months behind schedule).

Major project milestones achieved in **2016-17** include:

- Recommended Provisioning List Contract Change Proposals;
- LHD 02 Harbour Acceptance Trials **100** per cent complete; **and**
- LHD 02 Sea Acceptance Trials **100** per cent complete.

Technical issues have impacted the availability of the LHDs to progress operational test and evaluation activities. The issues diverted resources and delayed the rectification of outstanding on-board acquisition 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).

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.

Materiel Capability Delivery Performance

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

- Carriage, in addition to the crew, of approximately 1,200 personnel in the force ashore with a further 800 personnel providing helicopter operations, logistics, command and intelligence as well as other supporting units;
- Space and deck strength sufficient to carry around 100 armoured vehicles, including tanks, and 200 other vehicles (approximately 2,400 lane metres);
- Hangar space for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously landed;
- 45 days endurance for crew and embarked force including sustainment, medical, rotary wing and operational maintenance and repair support to these forces whilst ashore for 10 days;
- Command and control of the land, sea and air elements of a Joint Task Force; and
- The ability to conduct simultaneous helicopter and watercraft operations in conditions up to Sea State 4.

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.

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

While the LHDs are based on an existing Spanish LHD design, the Australianisation changes, the incorporation of an existing SAAB Combat System, and the development and integration of the internal and external communication systems will result 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). System performance of the propulsion pods had a significant impact upon the availability of both ships in the first two Quarters of 2017 requiring the docking of HMAS *Adelaide* and a trial program for HMAS *Canberra* prior to exercise TALISMAN SABRE 2017. The project is transferring to the Maritime Systems Division (MSD) branch managing sustainment 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 a number of systems of concern. 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 (two per cent of the total tasks) continues 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. The transfer of the project combined with the remediation activity has introduced a new risk regarding the transition and retention of existing corporate project knowledge.

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		
Oct 08	Real Variation – Transfer	9.3		4
			2,964.5	
Jul 10	Price Indexation		428.4	5
Jun 17	Exchange Variation		(304.1)	
Jun 17	**Total Budget**		3,091.9	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – BAE Systems	(2,666.7)		
	Other Contract Payments / Internal Expenses	(111.9)		6
			(2,778.6)	
FY to Jun 17	Contract Expenditure – BAE Systems	(10.6)		
	Other Contract Payments / Internal Expenses	(2.0)		7
			(12.6)	
Jun 17	**Total Expenditure**		(2,791.2)	
Jun 17	**Remaining Budget**		300.7	

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 and Minor Capital expenditure not attributable to the Prime contract and not included in the main contracted labour support areas.

7	Other expenditure comprises: project management costs ($1.1m), Integrated Logistics Support ($0.4m) and other contract payments not attributable to the Prime Contract ($0.5m)

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
19.5	32.9	18.2	PBS–PAES: The variation is primarily due to the delay in delivery of key milestones (Recommended Provisioning Lists Spares) from 2015-16 to 2016-17. PAES–Final Plan: The variation is primarily due to delays in the survey and quote contract for additional spares as well as Prime Contractor payment milestones (including final acceptance milestone) reprogrammed to FY 17-18.
Variance $m	13.4	(14.7)	Total Variance ($m): (1.3)
Variance %	68.9	(44.8)	Total Variance (%): (6.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(5.6)	Australian Industry	End of year underspend of $5.6m is due to the delay in the Prime Contractor payment milestones and the Survey and Quote work for the inventory and critical spares.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
18.2	12.6	(5.6)	**Total Variance**	
		(30.8)	**% 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 17 $m			
BAE Systems	Oct 07	2,268.1	2,689.1	Variable	ASDEFCON	1, 2

Notes	
1	Contract Price at Revision 123. Amendments to Contract since signature include execution of contracted options for Training and Spares.
2	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
BAE Systems	2	2	LHD ships and integrated support systems.	

Major equipment received and quantities to 30 Jun 17
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

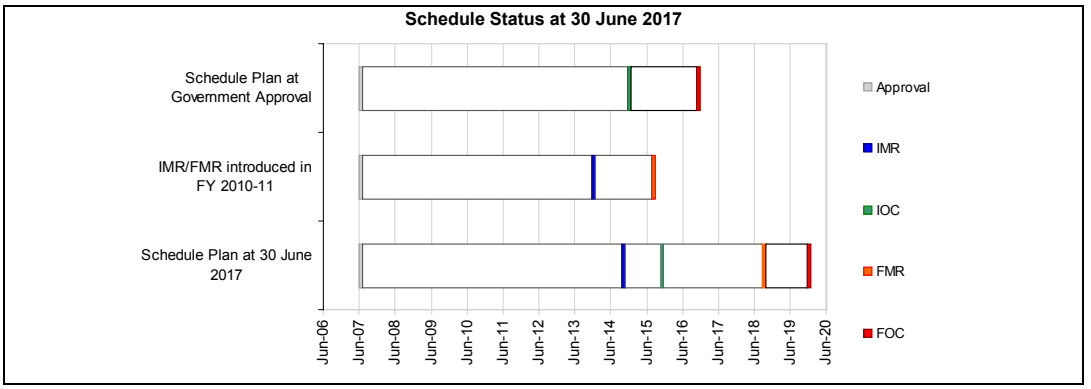
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	Oct 15	7	1
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Feb 14	Oct 14	9	2
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Oct 15	2	3
	LHD Final Acceptance	Sep 15	Nov 16	**Jun 18**	**33**	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	The change from Original Planned Date to Current Planned Date for Final Acceptance is due to the relationship this has with LHD 02 Project Acceptance and scheduled defect/deficiency close-out activities and milestones.

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	**Sep 18**	**37**	4
Final Operational Capability (FOC) (LHD 02)	Nov 16	**Dec 19**	**37**	5

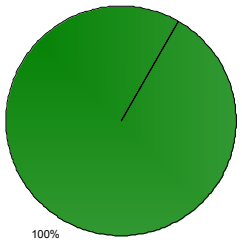
Notes	
1	LHD 01 production delays impacted System Integration and set to work activities resulting in the delay to achievement of IMR.
2	The change is a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in 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. **The Prime Contractor Final Acceptance milestone has slipped to June 2018. This will impact Final Materiel Release (FMR), slipping it from November 2016 to September 2018.** 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 2017**.
5	The variance to the Capability Manager defined milestone relates to the availability of both LHD ships to demonstrate operational scenarios. This milestone will confirm the two LHDs combined ability to operate as part of an Amphibious Task Group and support an Amphibious Ready Group in a complex amphibious warfare environment. **Both LHDs are expected to be available in Quarter three and four 2017, after which time Operational Test and Evaluation will resume for both ships. The Operation Test and Evaluation activities planned in 2018 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:** Defects and associated operational capability limitations identified against Materiel Capability Delivery Performance requirements were identified during harbour and sea trials and declared to the Capability Manager prior to ship acceptance. All limitations have allocated remediation plans to address and achieve all Materiel Capability Delivery Performance requirements. **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. • FMR is expected to be achieved in **September 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
The LHD Project organisation will be impacted through the lack of the correct number of appropriately qualified personnel available to undertake required LHD Project Office commitments.	• Engaging External Service Providers (Contractors). • Utilise personnel from CASG maritime matrix organisation and available personnel from the SPO. **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 2016-17)	
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.	• **Project engaging External Service Providers to review & make recommendations on the Logistics Supportability Analysis Record.** • **Verification activity (analysis) to be done across all technical data deliverables and Configuration Baseline Specification to ensure consistency.** • **Project to continue to review all engineering changes to ensure spares have been correctly identified.**
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.	• **Transition and Remediation Program (TARP) established to address system performance issues (remediation) and progress rectification of outstanding acquisition deficiencies and defects.** • **Project is transferring to the branch that sustains the capability and integrated with TARP effective 1 July 2017, to ensure effort required for all activities is coordinated.**
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.	• **Prime Contractor to schedule defect and test activity to occur during each availability.** • **Project Office to provide subject matter expertise to witness tests based upon schedule.** • **Prime Contractor (acquisition) and In-Service Support Contractor to coordinate the development of a combined schedule for an availability period.**
There is a chance that FMR won't be achieved as forecast due to the amount of outstanding issues leading to an impact on schedule and cost.	**This risk was realised and is now disclosed as an issue in Section 5.2.**
There is a chance that the Final Acceptance CCP won't be accepted due to the amount of outstanding work to be transferred to the Transition In-Service Support Contract (TISSC) leading to an impact on schedule.	**This risk was 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.	• **Transfer plan developed incorporating activities for outgoing project team to prepare guidance for incoming team to review.** • **Several resources retained and included in the transfer to support the establishment of the new PMO.** • **Colocation with LHDSPO will assist new PMO to obtain current knowledge of ships and schedule.**

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.	• Early 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 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.**

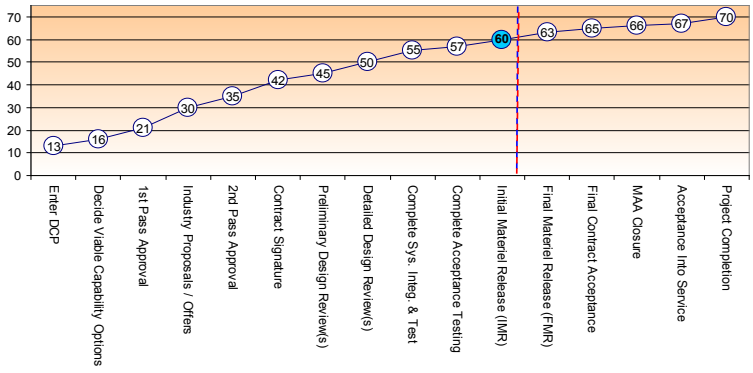
Description	Remedial Action
The forecast FMR date has been affected by the rejection of the FWT CCP leading to an impact on schedule.	• The project is working with the Contractor to accept and close out Warranty, Latent Defect claims and items in the Defect and Deficiency List - relating to unverified Mission System Specification 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 rejection of the Final Work Transfer (FWT) CCP intended to transfer the remaining scope of work to the in-service support contract leading to an impact on schedule.	• Resolution of the outstanding deficiencies and defects will be undertaken by the Prime contractor. • The establishment of the TARP will ensure improved collaboration between outstanding acquisition tasks, remediation tasks and on-going sustainment tasks being undertaken to the LHDs.

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: 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.							



2015-16 MPR Status ---- 2016-17 MPR Status ----

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 2016-17

Position	Name
Division Head	Mr Alan Nicholl (Dec 15–**Feb 17**) **Mr Patrick Fitzpatrick (Acting Feb 17–current)**
Branch Head	Mr Peter Croser
Project Director	Mr Peter Croser
Project Manager	Mr Paul Hegarty

Project Data Summary Sheet[139]

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
Total Approved Budget (Current)	$1,951.1m
2016-17 Budget	$55.4m
Project Stage	Preliminary 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.

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 may perform the following role:
  - Utility - Carriage of two personnel and cargo.

Thales Australia has been contracted by Defence for the development, production and through-life-support of the PMV-L capability. Thales Australia is also the nominated Prime Systems Integrator for the ICS.

1.2 Current Status

Cost Performance

In-year

The project identified a risk of $27.8m against contracted Milestones 14 and 15 due to the extension of Stage 1 in order for Thales to prove the reliability of the Hawkei vehicle. This slippage was realised at the end of Feb 17 and reported to DEPSEC CASG. The balance primarily relates to planned C4IDA activities tied to Milestone 14, part payment of Milestone 13 and ILS spend delayed until early FY 2017-18.

In 2009 an amount of $43.0m was spent to pursue the development of a 'next generation' PMV-L by joining the US Joint Light Tactical Vehicle (JLTV). The funding was provided by Capability Development group and has not formed part of the LAND 121

139 Notice to reader

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

Phase 4 project budget.

Project Financial Assurance Statement

As at 30 June 2017, 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

Thales Australia is providing the deliverables as required under the contract. 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 is required to conduct a Reliability Growth Trial (RGT) and successfully exit Stage 1 prior to commencing Stage 2 (Low Rate Initial Production). During RGT, the performance of the vehicles exceeded the number of critical failures allowable. Defence requested Thales Australia remediate these critical failures in order to fulfil the contractual reliability requirements of Stage 1. This remediation activity resulted in an additional RGT, extending Stage 1 by a further four months, with the exit of Stage 1 now expected to occur in August 2017. It is currently anticipated that this extension of Stage 1 has no overall impact on Initial Materiel Release (IMR) and Final Materiel Release (FMR).

From July 2016 the system definition for the ICS was finalised and design reviews successfully undertaken on schedule. An ICS Integration Lab in Sydney was established and a bench (stand-alone) and on-vehicle demonstration of the ICS capability was undertaken as contracted. The project is on track to undertake a live demonstration of the ICS with the capability manager in July 2017.

In March 2017, the PMV-L successfully passed its scheduled survivability test events for the specified level of under-belly land mine threat. Both the 4 door and 2 doors PMV-L Pilot build state were subjected to land mine testing and passed all criteria.

Following Thales Australia's successful exit of Stage 1, all other supplies and project activities are expected to be delivered in accordance with the Materiel Acquisition Agreement (MAA) schedule.

Materiel Capability Delivery Performance

10 PMV-L pilot vehicles and 5 trailers have been delivered out of a total planned delivery of 1116 PMV-L and 1067 trailers (of which 16 vehicles and 9 trailers are for test purposes only).

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 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 ten 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 is required prior to exiting Stage 1.
- Stage 2: Low Rate Initial Production. Includes the production of 106 vehicles and 104 trailers, including test vehicles and trailers based on an approved Production baseline; the conduct of a production reliability assessment test, and final acceptance testing and evaluation activities. Acceptance of these results by Defence is required prior to exiting Stage 2.
- 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.

Support requirements for the PMV-L have been incorporated into the existing Protected Mobility Vehicle (Bushmaster) Through Life Support Contract, as integrating the support arrangements for both fleets is predicted to 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 - Integrated Computing System (ICS); and
- Utilise a modular armour system to enable enhanced protection based on mission specific roles.

Major Risks and Issues

The Project Office previously managed a number of open risks associated with vehicle reliability with the highest level of pre-mitigation being medium. During RGT3 from 03 May till 28 July, 2017, on the third Incident Scoring Board (ISB#3) it was found that the vehicles had experienced seven (7) critical failures which was greater than the allowable range specified in the Contract.

As a result, risk items are now recorded and managed as 'Issue". The Commonwealth letter was subsequently issued and requested remediation plan from the contractor. Thales is contractually required to conduct further activities under a Reliability Remediation Plan to overcome these critical failures and meet the contracted reliability.

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.
- LAND 121 Phase 3B – This project will provide 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		
			1.943.1	4
Jul 10	Indexation		0.4	
Jun 17	Exchange Variation		5.9	
Jun 17	**Total Budget**		**1,951.1**	

	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Thales Australia (Prime Contract)	(161.3)		
	Contract Expenditure – Thales Australia prototyping activities (MSA Stage 1 and Stage 2 Contract)	(58.7)		5
	Other Contract Payments/Internal Expenses	(28.6)		6
			(248.6)	
FY to Jun 17	Contract Expenditure – Thales Australia (Prime Contract)	(20.3)		
	Other Contract Payments/Internal Expenses	(4.0)		7
			(24.3)	
Jun 17	**Total Expenditure**		**(272.9)**	4
Jun 17	**Remaining Budget**		**1,678.2**	

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 has not formed part of the LAND 121 Phase 4 project budget.
5	These expenditures relate to pre Second Pass costs associated with exploring the Government initiated MSA Option (Option 3) and the contracts are now closed.
6	Expenses comprise of: MAV prototyping activities ($17.7m). Project administrative costs ($4.0m); External Service Providers ($2.1m); Legal costs ($2.0m); US JLTV Program ($1.6m); and MSA Option (Option 3) costs not related to major projects ($1.1m).
7	Expenses comprise of: External Service Providers ($1.9m); Costs related to testing/trials ($1.1m); Project administrative costs ($1.0m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
95.2	55.8	55.4	PBS – PAES: The variation is primarily due to the rescheduling of design review payments from June to July 2017. PAES – Final Plan: The variation is due to foreign exchange budget update.
Variance $m	(39.4)	(0.4)	Total Variance ($m): (39.8)
Variance %	(41.4)	(0.7)	Total Variance (%): (41.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan (Jun 17) $m	Actual (Jun 17) $m	Variance (Jun 17) $m	Variance Factor	Explanation
		(31.1)	Australian Industry	The project identified a risk of $27.8m against contracted Milestones 14 and 15 due to the extension of Stage 1 in order for Thales to prove the reliability of the Hawkei vehicle. This slippage was realised at the end of Feb 17 and reported to DEPSEC CASG. The balance) primarily relates to planned C4IDA activities tied to Milestone 14, part payment of Milestone 13 and ILS spend delayed until early FY 2017-18.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
55.4	24.3	**(31.1)**	**Total Variance**	
		(56.1)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Thales Australia	Jul 10	9.0	58.7	Firm	ASDEFCON	3
Thales Australia	Oct 15	1,328.5	1352.2	Variable	ASDEFCON	1, 2
Notes						

1	Price variation from Contract Signature is due to: a. approved Contract Change Proposals, predominantly to progress the development and integration of ICS.
2	Contract Value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at 30 June spot rates current exchange rates, and includes adjustments for escalation (where applicable).
3	Price variation from contract signature was to exercise the MSA Stage 2 option.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
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 17

Defence received 10 vehicles and five trailers from Thales Australia on schedule for the purpose of further development and testing under Stage 1 (Engineering and Manufacturing Development) of the LAND 121 Phase 4 Acquisition Contract.

Notes

1	In addition to the above quantities Thales is also contracted to deliver 16 test vehicles and 9 test 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 Review	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	Aug 17	4	3
Support System Detailed Design Review	Support System	Jun 17	N/A	Nov 17	5	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 Dec, 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 Apr 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 5 months is due to the LRIP baseline not ready for SSDDR review till CDR exit in August 2017 and the contractor failed to meet the entry criteria in SSDDR Checklist (Annex D Attachment A of Statement of Work).

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	Mar 17	3	1
Reliability Growth Trial (RGT)	PMV-L and Trailer	Mar 17	Jul 17	Jul 17	4	2
Development Test & Evaluation (DT&E)	PMV-L, Trailer and ICS	Mar 17	N/A	Jul 17	4	3
Maintenance Evaluation	PMV-L, Trailer and ICS	Oct 17	N/A	Oct 17	0	
Production Reliability Acceptance Test (PRAT)	PMV-L and Trailer	Jun 18	N/A	Jun 18	0	
Acceptance Verification and Validation (AV&V)	PMV-L, Trailer and ICS	Jun 18	N/A	Jun 18	0	
Low Rate Initial Production (LRIP) Acceptance Last Batch	PMV-L, Trailer and ICS	Jun 18	Sep 18	Sep 18	3	4
Full Rate Production (FRP) Acceptance Last Batch	PMV-L, Trailer and ICS	Oct 20	Jan 21	Jan 21	3	4

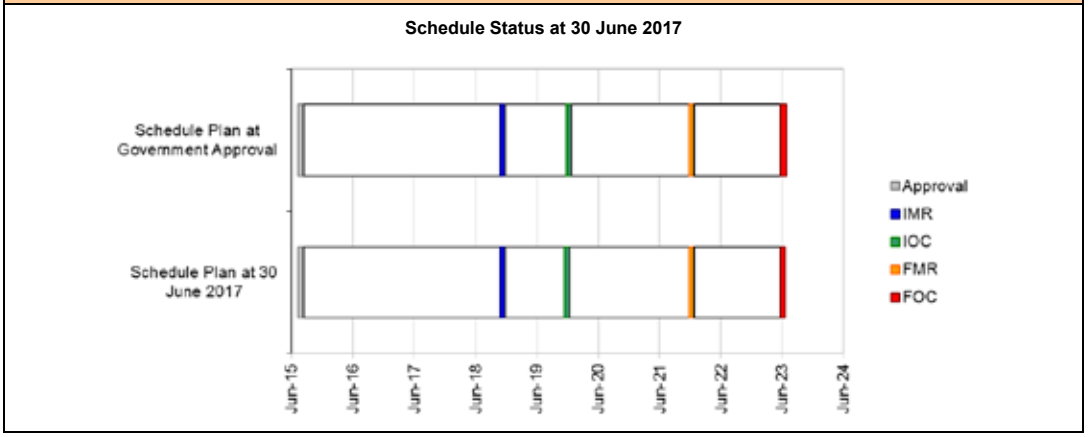
Notes

1	The variance is due to availability of resources over the Christmas/New Year Stand Down period.
2	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 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.
3	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).
4	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	Dec 18	0	
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	

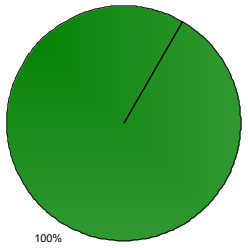
Notes



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 December 2018. By IMR, the following will be delivered: • 110 PMV-L and 103 Trailers to be delivered in accordance with the Force Generation Cycle; and • All logistics support arrangements.	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 2016-17)	
Description	Remedial Action
N/A	N/A

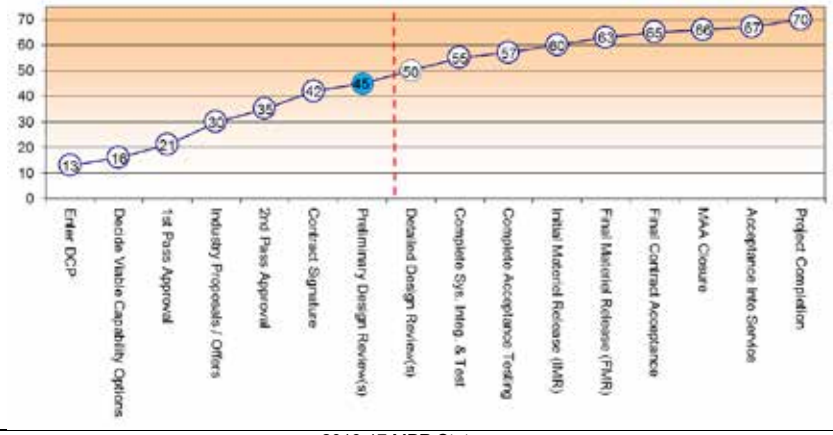
5.2 Major Project Issues

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 undertake an additional RGT in order to fulfil the contractual requirements of Stage 1. It is anticipated that Thales Australia: • have reprioritised technical and assembly resourcing effort; • are progressing the remediation activity in concurrence to other scheduled activities; • will introduce additional vehicle monitoring systems for root cause analysis; • will continue to conduct progressive Critical Design Reviews (CDRs); and • will undertake a mid-point review to evaluate the PMV-L and progress of additional RGT against the remediation activity.

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	7	6	7	7	45
Preliminary Design Review	Project Status	6	7	7	7	7	8	6	48
	Explanation	• **Cost:** The project is on track to achieve outcomes within the allocated budget. • **Requirement:** Design reviews indicate that the requirement will be met. • **Technical Difficulty:** The design is being developed and validation activities are underway through the RGT. • **Operations and Support:** The project is still in the design and development phase. • **Commercial:** Contractor on track to achieve Detailed Design Review (Land 121- 4 Critical Design Review, Aug 2017)							



2016-17 MPR Status - - - -

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. 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.	Governance Contract Management First of Type Equipment
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

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	MAJGEN David Coghlan
Branch Head	BRIG Haydn Kohl (to Oct 16) Ms Sarah Myers (Oct 16 – current)
Project Director/Manager	COL John McLean

Project Data Summary Sheet[140]

Project Number	**AIR 87 Phase 2**
Project Name	**ARMED RECONNAISSANCE HELICOPTER**
First Year Reported in the MPR	2007-08
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Army
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Mar 99
Total Approved Budget (Current)	**$1867.8m**
2016–17 Budget	**$1.1m**
Project Stage	**Project Completion**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project was approved to provide a reconnaissance and fire support capability for the Australian Defence Force (ADF). The project has delivered 22 aircraft including an instrumented aircraft (permanently fitted with in-flight test instrumentation), a Full Flight and Mission Simulator, two Cockpit Procedures Trainers, Groundcrew Training Devices, Electronic Warfare Mission Support System, Ground Mission Equipment, with supporting stores, facilities and ammunition.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2017, the Final Plan estimate of **$1.1m** has been achieved.

Project Financial Assurance Statement

As at 30 June 2017, project AIR 87 Phase 2 **closed in April 2017.** The residual budget of **$2.0m** allocated in Financial Year 2016/17 for the delivery of the Deployable Aircraft Maintenance Rig capability **was** transferred to sustainment and the remainder of the project's budget of $163.0m (contingency and unallocated funds) returned. There is no requirement for project funds to address the treatment of the Final Operational Capability (FOC) caveats. Funding to address the caveats will be provided through sustainment or other means.

Tiger is probably the most technically complex rotary wing weapon system in the ADF inventory and, though direct comparison with other aircraft types is difficult, it remains relatively expensive to operate. A range of sustainment improvements implemented in 2015 are driving Tiger cost of ownership down, with an average cost of $29,874 per flying hour in Financial Year 2015-16 compared to $39,825 in Financial Year 2013-14 and a target of approximately $27,000 in Financial Year 2017-18. **The cost per flying hour achieved in Financial Year 2016/17 was $28,096 (see note).**

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

The Final Materiel Release (FMR) Approval Certificate was signed by all stakeholders on 19 March 2014, with Army caveats, (20 months behind schedule).

FOC was declared in April 2016 (82 months behind schedule) by the Chief of Army with **the** caveats (detailed below).

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.

Materiel Capability Delivery Performance

As at 30 June 2017, all 22 ARH have been accepted by the Commonwealth in the Initial Operational Test and Evaluation Readiness configuration; five are being used for training, one of which is also being used to support test activities; and 17 are being used to raise, train and sustain the operational squadrons in Darwin in order to maintain directed levels of capability. All three simulators have been accepted and are being used for aircrew training in Oakey and Darwin.

The rebaselined schedule included all planned engineering activities required to deliver a fully compliant ARH System. Full compliance, or Service Release, of all Engineering Change Proposals was achieved in May 2013.

Operational readiness of the delivered ARH capability is being progressed by Army. The Operational Capability (OC) 2 milestone, a deployable squadron, was granted by the Chief of Army on 11 July 2013. The OC3 milestone, a deployable squadron plus troop by land into a non-permissive environment, was granted by the Chief of Army on 2 December 2014.

Chief of Army declared FOC of the ARH capability in April 2016 with the following caveats:

- Electronic Warfare Self-Protection System – the system exhibits some deficiencies which will be rectified by industry by the end of 2016 at no cost to the Commonwealth. **The Electronic Warfare Self Protection now displays satisfactory performance, and the Caveat has been closed.' . Caveat closed by Chief of Army in July 2017.**
- Availability and Rate of Effort – Tiger availability is likely to plateau at 50% (four from eight aircraft per two squadrons), compared to the originally envisaged 75% (six from eight aircraft per two squadrons), with Tiger planned to fly 4,800 hours during Financial Year 2016-17 with the mature Rate of Effort unlikely to exceed 5,300 hours (a mature Rate of Effort of 7147 hours per year was initially expected). In Financial Year 2015-16, Tiger achieved an annual Rate of Effort of 3,996 hours. This is an increase of 8.6% on the 3,678 achieved in Financial Year 2014-15 and continues a positive trend up from 3,019 hours achieved in Financial Year 2013-14. Defence and industry are continuing to collaboratively identify ways to improve aircraft availability and achievement of Rate of Effort. **As at 30 June 2017, Tiger flew 3,971.8 hours against the Capability Manager's plan of 4,800 hours for Financial Year 2016/17.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
- Identification Friend or Foe System – the system was experiencing technical issues which have been rectified. **All systems are serviceable and all have been upgraded. Caveat closed by Chief of Army in July 2017.**
- Communication and mission planning – limitations exist with the voice and data communications systems and the Ground Mission Equipment mission planning suite. Radio obsolescence replacement and a new Common Mission Management System is being developed to support both the Tiger and Taipan platforms, funded by the AIR 9000 Ph2/4/6 Multi-Role Helicopter (Taipan) Project, with resolution planned to be achieved by 2019.
- Missiles – AGM-114M Hellfire missiles are no longer being manufactured. Sufficient stocks are available in the short term. Defence and industry are undertaking the engineering effort to certify the replacement AGM-114R missile for use on Tiger. **All integration testing of the AGM-114R missile has been completed. Service Release is on track to be achieved in Quarter four 2017.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
- Ammunition – limited stocks are available. Additional stocks have been procured **and delivered.**
- Spare parts and consumables – supply constraints on breakdown spares and consumables. Demand satisfaction rates for breakdown spares and consumables **and repairable items continues to vary around the contracted target of 90%. Current performance for quarter four Financial Year 2016-17 is 93.4% and 79.2% respectively.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
- Class IX Fly Away Kits – each kit is designed to support a troop-level deployment in a field environment for 14 days. 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.
- Support – Defence and industry engineering capacity is constrained with the potential to affect capability. Defence and industry are closely managing Tiger engineering priorities. This issue **continues to be** managed by the Tiger sustainment organisation.

Commitment from Industry

Following agreement in August 2014 to principles relating to Rate of Effort, cost of ownership, rapid targeted action, transparency and partnership, which were confirmed in the Viability Review Deed of December 2014, Airbus Group Australia Pacific, its parent company Airbus Helicopters, and the industry partners supporting the Tiger Armed Reconnaissance Helicopter have remained positively engaged in addressing issues with the ARH capability.

Note

Forecast dates and capability assessments are excluded from the scope of the review.
The cost per flying hour presented in this MPR does not include system upgrade costs and therefore does not reflect the total investment into Tiger as per the Portfolio Budget Statements.

1.3 Project Context

Background

The project received Government approval in March 1999 to replace the Army's aerial reconnaissance and fire support capability, which was based on the 1960s technology Bell Kiowa and Iroquois helicopters. The project's acquisition strategy specified substantial Australian Industry Involvement and, in December 2001, the Commonwealth entered into separate contracts with Australian Aerospace for the Acquisition and Through Life Support (TLS) programs.

The first four aircraft were manufactured and assembled in France and the remaining 18 aircraft were manufactured in France and assembled in Brisbane. One ARH is fitted with flight test instruments to assist the test and evaluation of ARH capability upgrades.

The training system relies heavily on simulation devices using the Full Flight and Mission Simulator and Cockpit Procedures Trainers which were built in France, then shipped to Australia. The Full Flight and Mission Simulator and one Cockpit Procedures Trainer are installed at Oakey (Queensland); the second Cockpit Procedures Trainer is installed at Darwin (Northern Territory).

The project experienced delays in achieving the Initial Operational Capability (IOC) critical contractual milestone, which was originally contracted for June 2007, resulting in the Commonwealth exercising its contractual right to stop all payments on the Acquisition Contract while maintaining payments on the TLS Contract.

Delays resulted in insufficient numbers of aircraft, training devices and logistics support in service to enable the required training outcomes.

Airbus Group Australia Pacific (formerly Australian Aerospace) served a notice of dispute in October 2007 and the parties entered into a formal Dispute Resolution process over issues affecting both the Acquisition and TLS contracts. The dispute resolution process resulted in both parties signing a Deed of Agreement in April 2008 which established a revised Acquisition Contract Price and Delivery Schedule, a revised TLS Contract pricing structure that transitioned it to a Performance Based Contract, and established networks for work done by third-party support subcontractors. The re-plan included integration of a program necessary to retrofit all ARH to the final configuration where all mission systems are certified for employment by Army crews (known as the retrofit program). Partial payments to Airbus Group Australia Pacific on the ARH Acquisition Contract were recommenced in April 2008, with full payment due on signing of the Contract Change Proposals (CCP).

Changes to the Acquisition Contract arising from the signing of the Deed of Agreement were agreed between the parties in February 2009, with full payment recommencing from this date.

The commensurate major documentation amendment through a CCP was approved in May 2009, and the Contract Amendment was issued in June 2009.

Inadequate contractor supply and maintenance support networks and slow resolution of technical issues continued to affect the growth of the ARH capability. Flying Rate of Effort and aircraft availability remained below expectations, posing a risk to FOC. A Viability Review Deed of Agreement was signed between Airbus Group Australia Pacific and the Commonwealth in December 2014 which introduced a more rigorous performance based contract to reduce the cost per flying hour by almost half by Financial Year 2016-17.

Uniqueness

The Australian Tiger ARH design is based on the Eurocopter French and German Tiger helicopters. The ARH design varies from the French and German designs through changes made to the following systems:

- Secure radio communication systems;
- Digital Map System;
- Integration of the Hellfire Missile weapon system;
- 70mm rocket modifications;
- Storage Bay and Digital Video Recorder;
- Roof Mounted Sight multi-target tracking system; and
- Helmet Mounted Sight and Displays in both cockpits.

The ADF's Airworthiness certification of the ARH Tiger aircraft relies on the French Airworthiness certification process undertaken by the French acquisition agency (Direction Générale de l'Armement). The ADF's Director General Technical Airworthiness recognises the French acquisition agency as a competent certification agency, and subsequently accepts the French acquisition agency certification of common Tiger systems used in the Australian ARH Tiger. In doing so, the French acquisition agency certification of the French aircraft became an integral part of the ADF's ARH certification plan. Consequently, delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program resulted in the contractor failing to achieve the original contracted IOC critical milestone.

Major Risks and Issues

All major risks identified in the 2013-14 Major Projects Report have been retired from an Acquisition perspective and AIR 87 Phase 2 project closure activities **have been completed.**

The caveats, **associated with the declaration of FOC by the Chief of Army in April 2016,** are being managed by the Tiger sustainment organisation. The resolution of these caveats, and additional operational and sustainment issues pertaining to amphibious operations and LHD integration, workforce and obsolescence, is addressed in detail under Section 5.2 below.

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 ARH training system.

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			
Mar 99	Original Approved		1,584.0	
Oct 02	Real Variation – Transfer	(18.2)		1
Dec 03	Real Variation – Transfer	(59.1)		2
Aug 04	Real Variation – Budgetary Adjustments	(2.2)		3
Sep 04	Real Variation – Transfer	(3.0)		4
Jun 05	Real Variation – Transfer	(4.0)		5
Aug 05	Real Variation – Budgetary Adjustments	(4.5)		6
			(91.0)	
Jul 10	Price Indexation		418.2	7
Apr 17	Exchange Variation		121.5	
May 17	Real Variation – Project Closure		(165.0)	8
Jun 17	**Total Budget**		1,867.8	8
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Airbus Group Australia Pacific	(1,710.3)		9
	Other Contract Payments / Internal Expenses	(156.4)		10
			(1,866.7)	
FY to Jun 17	Other Contract Payments / Internal Expenses	(1.0)		11
			(1.0)	
Jun 17	**Total Expenditure**		(1,867.8)	
Jun 17	**Remaining Budget**		0.0	8

Notes	
1	Transfer to the then Defence Support Group (DSG) Oakey Redevelopment Project to develop ARH specific infrastructure.
2	Transfer to the then DSG 1 Aviation Relocation Project (Darwin) to develop ARH specific infrastructure.
3	Administrative Savings harvest.
4	Transfer to the then Defence Science and Technology Organisation (now Defence Science and Technology Group) to fund studies in support of ARH.
5	Transfer to the then DSG to fund AIR 87 facilities constructed as part of the Darwin 1 Aviation Relocation Project.
6	Skilling Australia's Defence Industry harvest.
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $414.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $3.3m having been applied to the remaining life of the project.
8	**The remaining Budget was reduced to zero with $165.0m returned to program as a result of project closure; this includes the $2.0m transfer to sustainment for the delivery of the Deployable Aircraft Maintenance Rig capability.**
9	Includes first five years support costs of the TLS Contract (two years Pre-Implementation and the first three Contract Years), Preliminary Engineering Proposals and Indefinite Quantity tasks performed in Acquisition
10	Other expenditure comprises: operating expenditure, External Service Providers, Foreign Military Sales, research and development costs and other capital expenditure not attributable to the aforementioned contract, minor contract expenditure and discounts on upgrades to Ground Mission Equipment received as liquidated damages.
11	Other expenditure includes $1.1m for the costs associated with the delivery of the Deployable Aircraft Maintenance Rig capability.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
3.3	3.2	1.1	PBS – PAES: The variance is due to cost savings. PAES – Final Plan: The variance is largely due to the transfer of $2.0m to sustainment for the Deployable Aircraft Maintenance Rig.
Variance $m	(0.1)	(2.1)	Total Variance ($m): (2.2)
Variance %	(3.4)	(65.6)	Total Variance (%): (66.8)

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	
1.1	1.0	(0.0)	Total Variance	
		(0.0)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $m	Type (Price Basis)	Form of Contract	Notes
Airbus Group Australia Pacific	Dec 01	1,139.9	1,710.3	Variable	SMART 2000	1, 2

Notes

1	Increase in price is due to updates for Price and Exchange over the life of the project as well as the approval of Contract Change Proposals. A Deed of Closure to the Airbus Group Australia Pacific Prime Contract was signed on 28 May 2013.
2	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 17	Scope	Notes
Airbus Group Australia Pacific	22	22	Tiger Armed Reconnaissance Helicopter	

Major equipment received and quantities to 30 Jun 17

22 aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements have been established.

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	ARH System	Mar 02	N/A	Feb 03	11	1
	Aircrew Training Devices	Jun 02	N/A	Feb 03	8	2
System Design	ARH System	Jun 02	N/A	Feb 03	8	1
	ARH System - Delta System Design Review	Mar 03	N/A	Apr 03	1	1
	Aircrew Training Devices	Apr 03	N/A	Jul 03	3	2
Preliminary Design	ARH Tiger	Oct 02	N/A	May 03	7	3
	Aircrew Training Devices	Mar 03	N/A	Oct 04	19	2
Critical Design	ARH Tiger	Mar 03	N/A	Jul 04	16	4
	Aircrew Training Devices	Sep 03	N/A	Jun 05	21	2

Notes

1	Reliance on the certification of the French Tiger variant was critical to the Australian design review and acceptance program. The project's ability to leverage from the French program was adversely impacted because the French program had not achieved design approval outcomes in the timeframe expected.

2	The Full Flight and Mission Simulator required customisation to both the visual system and the motion systems following contract signature in order to account for capability deficiencies associated with the proposed simulator design. A major cause of the delay in delivering training devices can be attributed to the efficacy with which the software provided from the aircraft manufacturer's test program was being managed to produce a high fidelity simulator.
3	As the ARH is a variant of the French and German Tiger helicopters, the ADF Technical Airworthiness Authority planned to utilise the existing certification work undertaken by the French acquisition agency (Direction Générale de l'Armement). Delays experienced directly impacted on design and development and the Australian Military Type certification achievement.
4	The maturity of the ARH design has required ongoing engineering changes to the approved ARH product baseline presented to the Airworthiness Board at the In Service Date. As a result, subsequent flight testing was required to confirm contract compliance and operational acceptance of incorporated design changes to enable removal of Australian Military Type Certificate and Service Release limitations.

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	Full Flight and Mission Simulator Contractor In-plant	Jul 04	N/A	Oct 07	39	1
	Cockpit Procedures Trainer Oakey Contractor In-plant and On-Site	Jul 04	N/A	Jun 08	47	1
	Cockpit Procedures Trainer Darwin Contractor In-plant and Army In-plant	Jul 04	N/A	Dec 08	53	1
Acceptance	ARH					
	Type Acceptance Review Special Flight Permit	Oct 04	N/A	Jun 05	8	1
	Australian Military Type Certificate	Jun 05	N/A	Oct 05	4	1
	Aircrew Training Devices - Final Acceptance Test and Evaluation					
	Full Flight and Mission Simulator (Transition Training capability)	Feb 05	N/A	Nov 07	33	1
	Full Flight and Mission Simulator (Full Training capability)	Feb 05	N/A	Nov 09	57	1
	Cockpit Procedures Trainer Oakey	Feb 05	N/A	Nov 09	57	1
	Cockpit Procedures Trainer Darwin	Feb 05	N/A	Feb 10	60	1
	Acceptance					
	ARH #11	Jul 06	N/A	Apr 08	21	1
	ARH #22	Apr 08	N/A	Nov 11	43	1, 2

Notes	
1	The difference between the Original Planned and Achieved dates is due to contractor delays in delivering conforming supplies.
2	The acceptance of the 22nd production ARH was contracted for July 2011. The milestone was achieved on 25 November 2011. Note: Production aircraft (#22) is the 22nd aircraft accepted by the Commonwealth which is not to be confused with the milestone for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration under the Acquisition Contract. The 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration was achieved on 14 December 2012 following the delivery of A38-002 from retrofit.

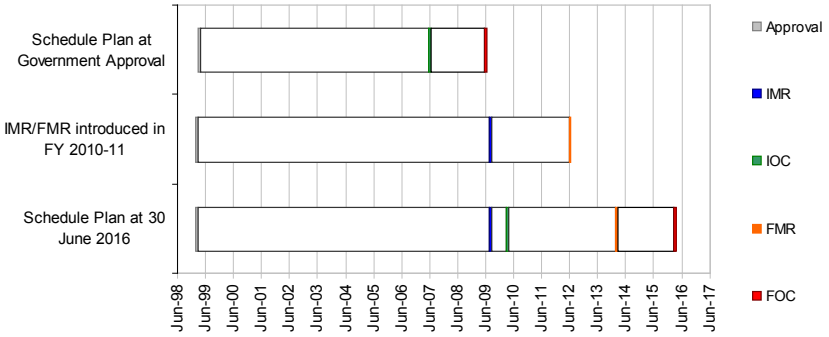
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Sep 09	N/A	
Initial Operational Capability (IOC)	Jun 07	Apr 10	34	1
Final Materiel Release (FMR)	Jul 12	Mar 14	20	2
Final Operational Capability (FOC)	Jun 09	Apr 16	82	3

Notes	
1	Operational Capability 1 (OC1) (IOC) was granted by Chief of Army on 8 April 2010 with the variance primarily due to contractual delays.
2	No FMR originally identified. Current FMR is the date agreed in Amendment No. 2 to the project AIR 87 Phase 2 Materiel Acquisition Agreement. Delays in the achievement of the Final Acceptance Milestone under the contract with Airbus Group

	Australia Pacific, delays in the formal transition of capability components to the respective in-service management agencies and the time taken to get all stakeholders to sign off on the FMR Approval Certificate contributed to the delay in achieving FMR. The FMR Approval Certificate was signed by all stakeholders on 19 March 2014, with Army caveats that are being managed by the Tiger sustainment organisation.
3	Previously, as a result of the reduction in flying Rate of Effort experienced by the ARH fleet, as well as a requirement to conduct amphibious operations from LHD ships, Army amended it's Acceptance into Operational Service Plan, to reflect the associated training delays. Consequently, Chief of Army advised that the previously anticipated achievement date of December 2012 would not be met, and that a date of January 2016 was planned. Chief of Army has since advised that FOC has not been delayed by a new requirement to conduct amphibious operations but that the delay was solely due to the reduced Rate of Effort of the aircraft. The FOC milestone, full regiment (16 aircraft) by land into a medium threat, non-permissive environment, was progressed to plan with Chief of Army granting the OC2 milestone, a deployable squadron (eight aircraft), on 11 July 2013 and the OC3 milestone, a deployable squadron plus troop (11 aircraft) by land into a non-permissive environment, on 2 December 2014. On 14 April 2016, Chief of Army advised the Minister that he had declared FOC of the ARH capability with the caveats, as detailed at Section 1.2 Materiel Capability Delivery Performance and Section 5.2 Major Project Issues. • Electronic Warfare Self-Protection System **– remediated and closed** • Availability and Rate of Effort **– ongoing management** • Identification Friend or Foe System (Mode 4) **– remediated and closed** • Communication and mission planning **– partially remediated with ongoing management** • Missiles **– ongoing management** • Ammunition **– partially remediated and ongoing management** • Spare parts and consumables **– ongoing management** • Class IX Fly Away Kits **– ongoing management** • Support **– ongoing management**.

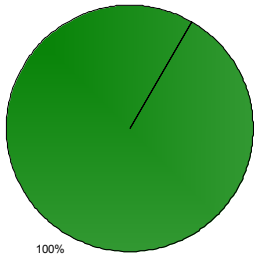
Schedule Status at 30 June 2017



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 the** Materiel Capability requirements as expressed in the MAA. The project has delivered all 22 Armed Reconnaissance Helicopters in the final configuration and had the required numbers of aircrew, groundcrew and technicians trained prior to the achievement of FMR. **All** items of Support and Test Equipment **and the Deployable Aircraft Maintenance Rigs have been delivered and accepted.**
	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. The Pie Chart reflects delivery of the materiel elements required under the MAA.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• Three ARH in the Initial Operational Test and Evaluation Readiness configuration; • Aircraft Availability and Reliability parameters met; • Initial Integrated Logistic Support elements in place to support three ARH flying an annual Rate of Effort of 325 airframe hours/ARH; and • Trained aircrew, groundcrew, and technicians.	Achieved

Final Materiel Release (FMR)	• Remaining 19 ARH (22 in total) in the Initial Operational Test and Evaluation Readiness configuration delivered;
	• Aircraft Availability and Reliability parameters met;
	• All Initial Integrated Logistic Support elements in place to support remaining 19 ARH (22 in total) flying an average annual Rate of Effort of 325 airframe hours/ARH.
	• Trained aircrew, groundcrew, and technicians; and
	• Additional requirements as endorsed by Capability Development Group as being in scope of the project delivered.
	• FMR was agreed achieved provided the following Army caveats are addressed:
	  • Rate of Effort Generation;
	  • Groundcrew Training Devices;
	  • Electronic Warfare System; and
	  • Cost of Ownership.
		Achieved with caveats

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 2016-17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

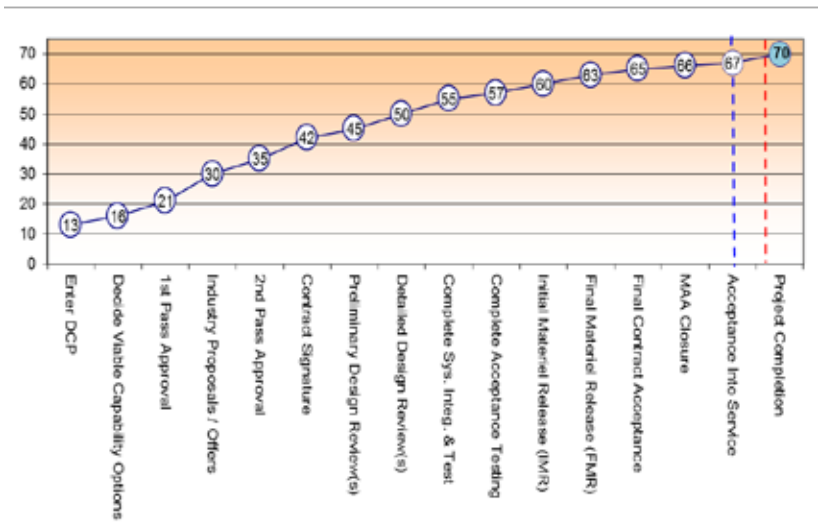
Description	Remedial Action
The Electronic Warfare System fitted to the ARH is not performing to specification during specific aircraft manoeuvres.	Industry rectified the Electronic Warfare System performance issue at no cost to the Commonwealth however, emergent technical issues in system performance were discovered during ground testing in late 2015. Industry **corrected** the software regression at no cost to the Commonwealth. **Outstanding deficiencies have been resolved, however EW development is an ongoing process and therefore** this issue **continues to be** managed by the Tiger sustainment organisation.
Cost of Ownership. In Financial Year 2013-14 the cost of sustaining the ARH Capability in exchange for flying hours represented a very poor return on investment for Army, equating to approximately $40,000 per flying hour. Army required adjustment to the sustainment contract to ensure value for money.	Following signature of the Viability Review Deed in December 2014, a range of sustainment improvements have been, and continue to be, implemented to drive down the cost of ownership for Tiger. The cost per flying hour was reduced to $29,874 in Financial Year 2015/16 with a target of approximately $27,000 in Financial Year 2016/17. **The cost per flying hour achieved in Financial Year 2016/17 was $28,096.** This figure includes Integrated Logistic Management Services (including Engineering, Maintenance Management, Supply Support and Technical Services), ARH Fleet Deeper Maintenance Services, Aircrew and Maintainer Training, Flight Simulators and Maintenance Training Systems Support Services, Software Support Services, Instrumented ARH Capability Operations and Support Services, and Management and Administration provided by the contractor in support of the ARH Capability. Industry remains positively engaged in addressing this issue in accordance with the principles contained within the Viability Review Deed. This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
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 is likely to plateau at 50% (four from eight aircraft per two squadrons) A mature Rate of Effort of 7,147 hours per year was initially expected. Defence is now planning to fly 4,800 hours during Financial Year 2016-17 with the mature Rate of Effort unlikely to exceed 5,300 hours per year.	In Financial Year 2015/16, Tiger achieved an annual Rate of Effort of 3,996 hours. This is an increase of 8.6% on the 3,678 achieved in Financial Year 2014/15 and continues a positive trend up from 3019 hours in Financial Year 2013/14. **As at 30 June 2017, Tiger flew 3,971.8 hours against the Capability Manager's plan of 4,800 hours for Financial Year 2016/17.** Defence and industry continue to collaboratively identify ways to improve aircraft availability and achievement of Rate of Effort. This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
Identification Friend or Foe System. The system was experiencing technical issues.	These issues have now been rectified. **All systems are serviceable and all have been upgraded.**
Communication and mission planning. Limitations exist with the voice and data communications systems and the Ground Mission Equipment mission planning suite.	Radio obsolescence replacement and a new Common Mission Management System is being developed to support both the Tiger and Taipan platforms with resolution planned to be achieved by 2019. This issue **continues to be** managed by the Tiger sustainment organisation and is being funded by the AIR 9000 Ph2/4/6 Multi-Role Helicopter (Taipan) Project.
Missiles. AGM-114M Hellfire missiles are no longer being manufactured.	Sufficient stocks are available in the short term. Defence and Industry are undertaking the engineering effort to certify the replacement AGM-114R missile for use on Tiger. **All integration testing of the AGM-114R missile has been completed. Service Release is on track to be achieved in Quarter four 2017.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
Ammunition. Limited stocks are available.	Additional stocks have been **delivered.**
Spare parts and consumables. Supply constraints on breakdown spares and consumables.	Demand satisfaction rates for breakdown spares and consumables **and repairable items varies around** the contracted target of 90**%. Current performance for quarter four Financial Year 2016-17 is 93.4% and 79.2% respectively.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.

Class IX Fly Away Kits. Each kit is designed to support a troop-level deployment in a field environment for 14 days. Defence currently has limited stocks.	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.
Support. Defence and Industry engineering capacity is constrained with the potential to affect capability.	Defence and Industry are closely managing Tiger engineering priorities. This issue **continues to be** managed by the Tiger sustainment organisation.
Workforce. Army has experienced issues training and retaining sufficient Ground Crewman Aircraft Support and Ground Crewman Mission Support personnel as well as key aviation technical trades, and achieving the required aircrew training progression as a result of inadequate aircraft availability and Rate of Effort. The Tiger sustainment organisation has also experienced issues with staff turnover and retention.	Army **continues to** actively **manage** these workforce issues as part of the broader ARH capability considerations by the Tiger Weapon System Review Committee. Additionally, staggered posting cycles are being maintained for key military positions within the Tiger sustainment organisation. The issue of aircraft availability and Rate of Effort, which is impacting aircrew training progression, is addressed previously within this section.
Amphibious operations and LHD integration. While not an acceptance criteria for FOC, Army requires the ARH Tiger to be capable of conducting amphibious operations from Navy's LHD ships. This requirement has not yet been satisfied.	Tiger First of Class Flight Trails are due to be complete in the second half of 2018.
Obsolescence. Army has been operating the ARH Tiger since 2004. As with all major systems with a protracted life of type, a number of significant components require replacement in order to address obsolescence and supportability issues. The number and complexity of these issues are beyond the financial scope of treatment available through sustainment.	Army is working closely with Airbus Group Australia Pacific to identify and rectify Tiger obsolescence issues. In the short term, materiel obsolescence management is incorporated under the current Tiger sustainment contract through to **2020**. Longer term, and more significant capability obsolescence issues, will be addressed under the Armed Reconnaissance Helicopter Capability Assurance Program.
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	**10**	10	10	10	**10**	**10**	**70**
Project Completion	Project Status	10	**10**	10	10	10	9	**10**	**69**
	Explanation	**Cost – Project costs have been reconciled and project financial closure achieved. Commercial – contractor's performance would not merit their consideration as a preferred supplier for future similar requirements however, there is a good basis for confidence that the contractor's in-service support performance will be satisfactory. Operations and Support – materiel and support systems are fully operational.**							



2015-16 MPR Status - - - -	2016-17 MPR Status - - - -

Note
The Project Maturity Score has been developed in accordance with Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, Project Maturity Scores at Life Cycle Gates, September 2010, and has been drawn from the Monthly Reporting System Majors Master Data in accordance with the requirements of the 2016-2017 Major Projects Report Guidelines. The score reflects the Project's maturity against a benchmark relevant to its life cycle gate stage and does not necessarily reflect the maturity of the broader ARH Capability.

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Aircraft still undergoing development by their parent Defence force or Original Equipment Manufacturer should not be classed as off-the-shelf.	Off-The-Shelf Equipment
Delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This has caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program have resulted in the contractor failing to achieve the IOC critical milestone on schedule.	Off-The-Shelf Equipment
Resolve or escalate minor disputes as they arise to prevent escalation to major contract dispute.	Contract Management
Use integrated teams with strong processes and empowered staff facilitated by appropriate contractual arrangements.	Resourcing Contract Management
The AIR 87 TLS Contract needs constant management by experienced contract management staff with ready access to legal support. The Commonwealth must challenge the contractor on performance and must not enter into contract change discussions with the contractor where the Commonwealth will not receive value for money for the contracted services.	Contract Management
In respect of the out-sourced Systems Program Office core functions, the notion that the Commonwealth can optimise resource availability by outsourcing activities needs to be challenged. This value for money hypothesis is flawed.	Resourcing Contract Management
Better arrangements should be put in place to ensure that appropriate consultations occur before the Commonwealth enters into similar contracts with the same contractor. AIR 9000 did not consult AIR 87 to any significant extent before signing the Multi-Role Helicopter Sustainment Contract and over time this contract has proven to be similarly flawed.	Contract Management
Defence needs to re-evaluate its policy in relation to the use of 'cost-plus' contracts. A cost-plus contract for the initial years of the AIR 87 TLS Contract would have ensured effective performance parameters could be set for a more robust mature-state stage of the contract.	Contract Management

The Commonwealth must seek adequate evidence from the Contractor that its sustainment arrangements with its suppliers/subcontractors are in place and effective and that any provisions contained in the head contract have been adequately flowed down into any subcontracts. Demonstration should be linked to sustainment contract signature or as an entry obligation to the achievement of In-Service Date.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	MAJGEN Andrew Mathewson
Branch Head	BRIG Anthony McWatters (**to Apr 17**) **BRIG Jeremy King (Apr 17–current)**
Project Director	COL Michael Millar
Project Manager	Mr Cliff Meyer

Project Data Summary Sheet[141]

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
Total Approved Budget (Current)	$1,406.7m
2016-17Budget	$60.7m
Project Stage	Integration and Test
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 (previously known as Alenia Aermacchi, Finmeccanica, Leonardo-Finmeccanica) 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 FOC and the relocation of the C-27J to RAAF Amberley until December 2019. Project acquisition includes the ten aircraft, training system, support system materiel elements and three years of initial FMS training and support services from aircraft In-Service Date (ISD), through Initial Operational Capability (IOC) to Final Operational Capability (FOC).

1.2 Current Status

Cost Performance

In-year

The year-end variance of ($12.1m) reflects an underspend in contracting effort associated with the procurement of Commercial Spares, support equipment and Aircraft baseline modification contract activity including delays in deliveries against support contracts for the Project.

Project Financial Assurance Statement

As at 30 June 2017, 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, whilst there is sufficient budget remaining for the project to complete against the agreed scope, yet to execute contracts carry 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. The revised schedule agreed by Government moved FOC out to be achieved by Dec

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.

2019 (24 months behind original schedule); noting, the capability will continue to mature beyond FOC. The most significant milestones achieved in financial year 2016-17 include achievement of IOC (with caveats), delivery of Aircraft A34-005, A34-006 and A34-007 and transition from US based contractor provided training to Air Force delivered training in Australia.

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. Seven aircraft have been accepted to date and a total of nine are expected to be delivered by December 2017 with the tenth and final aircraft delivered on schedule in January 2018.

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 manufactures the C-27J Military Industrial Baseline Aircraft configuration which is then flown to the US for modification. L-3 PID, acting as the prime contractor to the US Government, is responsible for post-production integration of US improved mission systems. The design and integration work by L-3 PID enhances 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 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) will leverage heavily on 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 effort and schedule risk associated with achieving MTC which will have a cost impact. 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.

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 Identify Friend or Foe 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:

C27-J 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 the 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.

Training. Delays in establishment of contracts between the US Government and L-3 impacted training schedule and student throughput. The courseware standard delivered required active involvement by the project office and Air Mobility Group to implement ongoing improvements and meet perceived gaps in US based training. The project has undertaken detailed planning to ensure the continuity of training is maintained when training activities transition from the US to Australia in mid 2017. The risk will reduce as the first maintainer training course successfully completes in Australia and the first aircrew course is scheduled

to commence in July 2017.

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. In parallel, a Through Life Support (TLS) contract is in negotiation with the preferred tenderer, Northrop Grumman. The contract is expected to be in place in the second half of 2017, with a phase in period to support hand off to the enduring sustainment system managed by in-service organisations in 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.

Contracting. 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 will delay delivery of Aircraft 5 through 10 by up to 20 months. The magnitude of production restructure made the December 2017 FOC date unachievable. Leonardo have applied additional resources in an effort to recover the schedule where possible and are now executing aircraft production to a revised approved schedule and exceeding performance targets.

IMR/IOC Caveats. Achievement of these milestones were declared with caveats relating to deficiencies in supply support and training courseware. Further details are provided in Section 5.2.

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		1,156.5	
Jun 17	Exchange Variation		250.2	
Jun 17	**Total Budget**		1406.7	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – US Government	(633.1)		1
	Contract Expenditure – Leonardo	(34.5)		2
	Other Contract Payments/Internal Expenses	(24.0)		3
			(691.6)	
FY to Jun 17	Contract Expenditure – Leonardo-Finmeccanica	(15.6)		2
	Contract Expenditure – US Government	(15.0)		1
	Other Contract Payments/Internal Expenses	(18.1)		4
			(48.6)	
Jun 17	**Total Expenditure**		(740.2)	
Jun 17	**Remaining Budget**		666.4	

Notes

1	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
2	Alenia Aermacchi, Finmeccanica and Leonardo-Finmeccanica are now shown as Leonardo due to a partial corporate de-merger.
3	Other expenditure comprises: operating expenditure, minor contract expenditure and other capital expenditure not attributed to the listed contracts.
4	Other expenditure comprises: Support and Test Equipment, spares and global freight costs ($8.2m), operating expenditure related to initial sustainment costs ($4.0m), contractor support costs for certification purposes ($3.7m) and other minor project administrative costs also contribute to other expenditure ($2.1m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
147.6	72.8	60.7	PBS - PAES: The variation is primarily due to adjustments to commitment obligations held against the project's Foreign Military Sales case with the US Government. PAES - Final Plan: Variance primarily due to further reductions in Foreign Military Sales case spend driven by case ramp down and reprogramming of spend associated with Structural Substantiation Program to reflect the latest program schedule.
Variance $m	(74.8)	(12.1)	Total Variance ($m): (86.9)
Variance %	(50.7)	(16.6)	Total Variance (%):(58.9)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Year End Variance reflects an underspend due to delays in contracting for Commercial Spares, support equipment and associated deliveries and delays against Technical support contracts including Engine Maintenance Support, engineering support, Aircraft Certification services, Structural Substantiation Program and Aircraft baseline modification contracting activities reflecting delayed contract development and lower contract throughput.
		(3.5)	Foreign Industry	
			Early Processes	
		(8.6)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
60.7	48.6	(12.1)	**Total Variance**	
		(19.9)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $m	Type (Price Basis)	Form of Contract	Notes
US Government	May 12	882.4	717.8	Reimbursement	FMS	1,2,4
Leonardo	May 12	62.0	71.1	Firm Price	Modified ASDEFCON (Complex)	1,3

Notes

1	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 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	Alenia Aermacchi is now known as Leonardo due to a partial corporate de-merger.
4	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.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 17	Scope	Notes
US Government	10	10	10 C-27J Aircraft and associated training, training equipment, spears, ground support equipment and initial support	
Leonardo	N/A	N/A	C-27J Intellectual Property and Technical Data	

Major equipment received and quantities to 30 Jun 17

Seven 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 2018 following the completion of **future** aircraft baseline configuration **planning**.

3.2 Contractor Test and Evaluation Progress

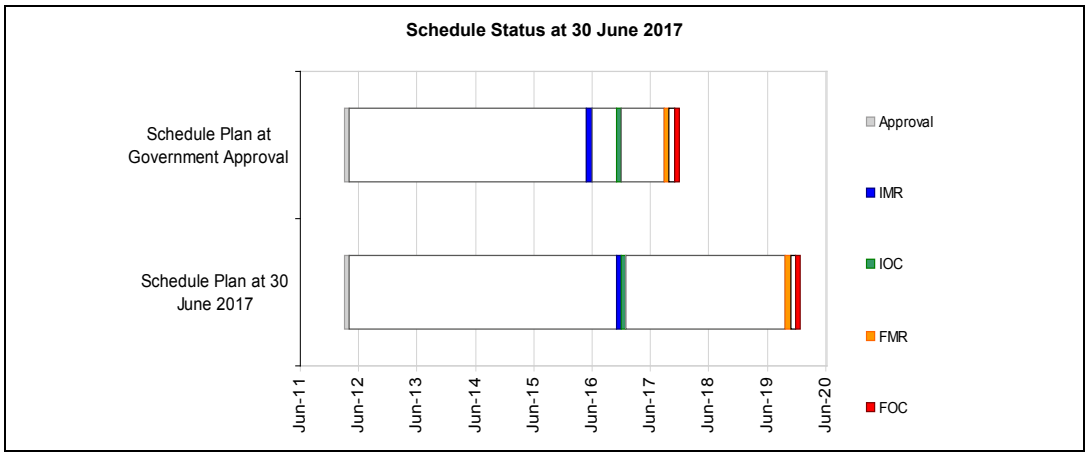
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Acceptance	C-27J Aircraft 1 (A34-001)	Jul 14	N/A	Nov 14	4	3
	C-27J Aircraft 2 (A34-002)	Sep 14	N/A	Dec 14	3	3
	C-27J Aircraft 3 (A34-003)	Nov 14	N/A	Aug 15	9	3, 4
	C-27J Aircraft 4 (A34-004)	Feb 15	N/A	Mar 16	13	**3,** 5
	C-27J Aircraft 5 (A34-005)	Aug 15	N/A	**Aug 16**	**12**	**3**, 5, 6
	C-27J Aircraft 6 (A34-006)	Oct 15	N/A	**Nov 16**	**13**	**3**, 5, 6
	C-27J Aircraft 7 (A34-007)	Dec 15	N/A	**Mar** 17	**15**	**3**, 5, 6
	C-27J Aircraft 8 (A34-008)	Feb 16	N/A	Aug 17	**18**	5, 6
	C-27J Aircraft 9 (A34-009)	Apr 16	N/A	Nov 17	19	5, 6
	C-27J Aircraft 10 (A34-010)	May 16	N/A	Jan 18	20	5, 6
	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	The Project expects to approach the market to procure a suitable flight simulator in 2018 following the completion of **future** aircraft baseline configuration **planning.**
3	Aircraft 1, 2, 3**, 4, 5, 6 and 7** have been Accepted by the Commonwealth of Australia and have been placed on the Australian State Register.
4	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).
5	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 component**s** for use on another aircraft.
6	**Leonardo's** decision to close its Naples fuselage production facility and consolidate all C-27J production at its Turin facility **has** result**ed** in a delay to delivery of Aircraft 5 through 10. However, Leonardo's production consolidation has been beneficial to the overall production of aircraft. From Aircraft 5, there have been considerable improvements in aircraft build quality and the project has been able to recover some lost production schedule. Continued improvements are expected as a result of Leonardo's consolidation decision and management of its supply chain to reduce delivery risks such as working with **Dowty** to deliver propellers after a **Dowty** production line fire (potentially effecting Aircraft 8**, 9** and 10).

3.3 Progress Toward Materiel Release and Operational Capability Milestones

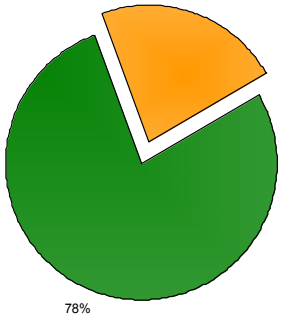
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Mar 15	Jun 15	3	1
Initial Materiel Release (IMR)	Jun 16	**Dec 16**	**6**	2
Initial Operational Capability (IOC)	Dec 16	**Dec 16**	**0**	3
Final Materiel Release (FMR)	Oct 17	**Oct 19**	**24**	4
Final Operational Capability (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 described at IMR.**
4	Variance due to delays in aircraft production, acquisition of Mature Training System devices and construction of facilities at RAAF Amberley. A substantial delay to FMR/FOC is anticipated as a result of the decision by **Leonardo** to consolidate aircraft production at its Turin facility. Noting this delay, and in conjunction with other USAF C-27J divestiture considerations, the project office has undertaken a detailed planning review to enable an appropriate **re-baseline** of the project schedule. In May 2016 Government agreed to delay FOC to December 2019 and redefine FOC to exclude the flight simulator. These changes are being progressed through 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, **except for deficiencies in supply support and training courseware described at IMR.** **Amber:** **The inability to undertake Operational Test and Evaluation as described at IOC encompass the materiel caveats described by the project at IMR.** **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 MOB. 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. Following confirmation of divestment, USAF subsequently ceased MTC and rectification of a number of known 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 including Electronic Self Protection systems impacting project budget and schedule. Prior to divestiture, the USAF was operating the JCA C-27J under a Military Flight Release with broad capability scope and mitigators for the known incomplete capability requirements. They are not anticipated to be an impediment to achieving ISD or IOC; however, the overall capability is expected to mature beyond FOC.	A capability baseline confirmation process has been established to address the known deficiencies. The baseline confirmation process will culminate in a plan for addressing deficiencies. Each deficiency will be assessed based on its acceptability 'as is' or importance to capability in order to determine a priority for rectification. Once priorities and costs are determined, available project budget will be allocated on a priority basis. **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 approved by Government in the original 2012 project approval, an upgrade to Mode 5 IFF/ADS-B systems is progressing to contract signature with the Original Equipment Manufacturer of the aircraft.** **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 has undertaken detailed planning to ensure the continuity of training is maintained when training activities transition from the US to Australia in mid 2017. **The first maintainer training course has successfully completed in Australia with the first aircrew course scheduled to commence in July 2017.**	The project worked closely with the USAF FMS Program Office to minimise delays to the delivery of training and implement improvements to courseware. **The project will transition training from the US to Australia in July 2017 and commence training at RAAF Richmond in Australia from Aug 2017. 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 project has engaged with Estate and Infrastructure Group to ensure a suitable training facility is available when the Mature Training System assets are acquired for installation via the alternative approach.**
Sustainment The availability of spares, Support and Test Equipment 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 undertaken a detailed analysis of future requirements for spare parts and Support and Test Equipment, including a review of the supply pipeline, delivery timeframes, stock levels to improve the operational availability. **The project has redirected a range of acquisitions away from the FMS case to the aircraft Original Equipment Manufacturer and other suppliers through direct commercial sales as a result of the detailed analysis**.	The project is continuing to work closely with the USAF FMS Program Office and L-3 to minimise delays to the delivery of spares, Support and Test Equipment. The project office is directly engaging with industry suppliers to acquire items not on order under the FMS case. The project is also working closely with the Air Force to improve the breadth and depth of spares available and enhance supply chain responsiveness to improve operational availability. **In addition the project closely manages critical spares, Support and Test Equipment. The project 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. In parallel, a Through Life Support (TLS) contract is in negotiation with the preferred tenderer, Northrop Grumman. The contract is expected to be in place early in the second half of 2017, with a phase in period to support hand off to the enduring sustainment system managed by in-service organisations in 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.**	**The** Parliamentary Works Committee approved **the** facilities enabling detailed planning for establishment of mature training in Australia. **The training facility design and construction has preceded selection of training devices but is designed to accommodate anticipated training devices. Government approved a decoupling of mature training to FOC and it will now be delivered post FOC. The post mitigation activities for the facilities assess the risk as low.**
Emergent Risks (risk not previously identified but has emerged during 2016–17)	
Description	Remedial Action
N/A	N/A

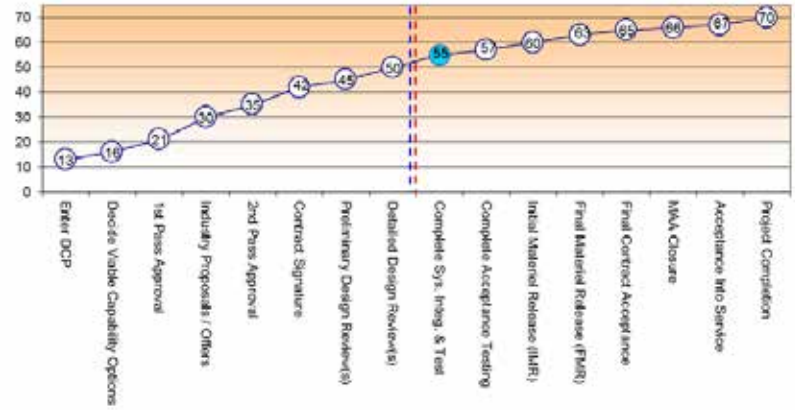
5.2 Major Project Issues –

Description	Remedial Action
USAF Divestiture of C-27J. The risk that USAF C-27J divestiture would have a greater than anticipated impact on project budget and schedule has been realised. Accelerated USAF divestiture resulted in incomplete military type certification by the USAF and the unanticipated requirement for interim training to be relocated from Robins Air Force Base to L-3 facilities in Texas, with conduct of flying training to be contracted by the USAF utilising the ADF Airworthiness Management System (AMS) rather than the USAF AMS as originally planned.	In the absence of USAF Military Type Certification, completion of MTC has required additional Project resourcing to be applied. MTC will be achieved with nil impact to IOC/FOC schedule. Implementation of ADF AMS requirements in USAF contracts with L-3 took longer than anticipated. All stakeholders (CoA, USG and L-3) underestimated the time required to relocate and re-establish the training school at its Texas facilities resulting in approximately a six month delay to the planned start of training. The delayed start to training translated to a three month delay to achievement of the planned ISD at 35 Squadron. Finalisation and throughput management of the training system is ongoing between the Commonwealth of Australia, USAF and L-3. The final impact to cost will be understood once the mature training system contracts have been finalised, until final cost impact is known this remains an issue.
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 continues to work closely with the USAF FMS Program Office to contain the cost and schedule impact.
Aircraft Production. The unlikely risk that significant aircraft production delays would occur and impact the project IOC/FOC schedule has been realised as a result of Leonardo commercial decision to close its Naples fuselage production facility and consolidate all C-27J production at its Turin facility and subsequent delays to aircraft modification in the USA. The decision by Leonardo in May 2015 will affect delivery of Aircraft 5 through 10 by up to 20 months. The magnitude of production restructure has made the December 2017 FOC date unachieveable. Leonardo have applied additional resources in an effort to recover the schedule.	The Project is working with USAF and L-3 to implement a mitigation strategy that maximises available aircraft utilisation in support of training and 35 Squadron to support IOC. **The Government was advised of Leonardo's production restructure in 2016 and agreed to an updated FOC of Dec 2019.** The Project has engaged USAF, L-3 and Leonardo to convey the Commonwealth of Australia's requirement to improve the aircraft production schedule. Noting the substantial delay to FOC, the project office has undertaken a detailed planning review to enable an appropriate re-baseline of the project schedule. **Leonardo continues to apply resources and effort to recover schedule and meet the currently agreed schedule.**
Spares Availability. The availably of spares and Support and Test Equipment 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 is undertaking a detailed analysis of future requirements for spare parts and Support and Test Equipment, including a review of the supply pipeline, delivery timeframes, stock levels to improve the operational availability.	**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 office is directly engaging with industry suppliers to acquire items not on order under the FMS case.** **The project is also working closely with the Air Force to improve the breadth and depth of spares available and enhance supply chain responsiveness to improve operational availability.** **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 are being managed in Australia by the project office in conjunction with Air Mobility Group under the aircrew 'Check to line' process and similar for 35 Squadron maintenance workforce certifications.** **In addition training will cease in the US in July 2017. Aircrew ground training will be conducted in Australia with the simulator element undertaken in Italy. All maintenance training will be undertaken in Australia**
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.	**The supply chain has been exceedingly slow to deliver against orders. As a result Air Lift Systems Program Office (ALSPO) are managing a significant number of priority demands each month to support 35 Squadron (SQN). The aircraft Rate of Effort achieved by 35 SQN is being affected by spares Support and Test Equipment availability. The deficiencies identified are being managed by the project office and ALSPO and will continue to be managed to achievement of a suitable level of spares support.**

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 Test	Project Status	7	6	8	8	9	6	8	52
	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. • **Technical Difficulty:** Necessary logistics data and arrangements for its employment in support of the capability are in place. • **Commercial:** Contractor is in the early stages of delivery and starting to demonstrate some degree of risk management necessary.							



2015-16 MPR Status - - - -	2016-17 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 project office 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 2016-17

Position	Name
Division Head	AVM Catherine Roberts (Mar 16-current)
Branch Head	AIRCDRE Phil Tammen
Project Director	GPCAPT Gerry van Leeuwen (Dec 15-current)
Project Manager	WGCDR Jamie Scott (Jan 16-current)

Project Data Summary Sheet[142]

Project Number	**LAND 116 Phase 3**
Project Name	**BUSHMASTER PROTECTED MOBILITY VEHICLE**
First Year Reported in the MPR	2007-08
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Capability Manager	**Chief of Army**
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 98
Total Approved Budget (Current)	**$1,250.6m**
2016-17 Budget	**$10.3m**
Project Stage	**MAA Closure**
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project **has delivered** 1,015 vehicles in seven variants; troop, command, mortar, assault pioneer, direct fire weapon, air defence and ambulance. These vehicles will provide protected land mobility to Army units and Royal Australian Air Force Airfield Defence Guards. In addition to the acquisition of the vehicles through the Approved Major Capability Investment Program, a number of enhancements are being made to the vehicles through the Rapid Acquisition process. These enhancements do not form part of the Project LAND 116 Phase 3, but do impact upon the project. Vehicle production information is represented below:

Production Period (PP)	Quantity	Description
PP1	300	300 vehicles were acquired in six variants.
PP2	144	144 vehicles were acquired in five variants.
PP3	293	293 additional vehicles were acquired in seven variants to meet the medium Protected Vehicles component of LAND 121 Phase 3 Project Overlander.
PP4	70	70 troop variant vehicles were acquired to meet future operation attrition. An additional 31 troop variant vehicles were acquired to replace battle damaged Protected Mobility Vehicles (PMVs), which were managed as a funded sustainment activity.
PP5	208	208 vehicles in four variants **were** acquired to maintain critical skills at Thales Bendigo site for the production of Hawkei. In addition, six troop variant vehicles were acquired and funded by LAND 17 Phase 1A.
Total	**1,015**	

1.2 Current Status

Cost Performance

In-year

The full year spend was $5.0m against a final budget of $10.3m. The underspend of $5.3m was primarily due to contract vehicle payments.

Project Financial Assurance Statement

As at 30 June 2017, project LAND 116 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

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.

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

All vehicle deliveries are now complete. **The project declared FMR in September 2016. The FMR declaration was formally acknowledged by the Capability Manager in October 2016. FOC was declared in January 2017, one month behind schedule.**

Materiel Capability Delivery Performance

All variants **meet** their required specifications.

The External Composite Armour (ECA) Detailed Design solution was completed in November 2012. The project entered a contract with Thales Australia for the production of 101 sets of Opaque Armour and 20 sets of Transparent Armour on 21 December 2012. Delivery occurred in May 2014.

The PMV Trailer tender response from Thales on 22 May 2009 was evaluated and deemed non-compliant and not value for money. On 8 July 2013 the Government approved the removal of the trailer capability from the project scope.

Note

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

1.3 Project Context

Background

The Bushranger Project **was** conducted in three phases:

Phase 1 involved the motorisation of the infantry battalions of 6 Brigade, with 268 interim infantry mobility vehicles, based on the in-service Land Rover PERENTIE 4x4 and 6x6 vehicles and the procurement of an additional 25 support vehicles.

Phase 2 consisted of Phase 2A the development of the infantry mobility vehicle specification and the release of an Invitation to Register Interest and Phase 2B the release of a Request for Tender and the trialling and evaluation of successful contender vehicles.

Phase 3 **was** the full rate production of the protected vehicles. The Production Contract Option was executed on 1 June 1999 with Australian Defence Industries for the supply of 370 Bushmaster vehicles by December 2002. A range of problems emerged with design enhancements, cost, and schedule slip in the contract, shortly after the Production Option was exercised, leading to renegotiation of the Contract in July 2002 for 299 vehicles. This phase **was** divided into five separate production periods that **reflected** the increase over time in the quantity of vehicles being acquired. The Production Periods **were** as follows:

Production Period One (PP1): During this Production Period 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. Defence had contracted for 299 vehicles; however, it then sold 25 vehicles back to Thales for sale to the Netherlands and received 26 vehicles from Thales as consideration.

Production Period Two (PP2): During this Production Period 144 vehicles were acquired in five variants consisting of**:** troop, command, mortar, direct fire weapon and ambulance. Defence had contracted for 143 vehicles; however, it then allowed Thales to divert 24 vehicles from the production line for sale to the United Kingdom, thereby delaying delivery to Defence. Defence received one additional vehicle from Thales as consideration.

Production Period Three (PP3): During this Production Period an additional 293 vehicles were acquired to meet the Medium Protected Mobility vehicle component of LAND 121 Phase 3 Project Overlander. This included all six variants and an air defence variant. In addition purpose designed ECA was also acquired.

Production Period Four (PP4): In May 2011 the Government announced the acquisition of an additional 101 PMVs to replace 31 battle damaged PMVs and to accommodate future attrition. As part of this requirement LAND 116 Phase 3 also procured 70 **Middle East Area of Operations** (MEAO) upgrade kits (current standard blast kits as opposed to the improved blast protection). Delivery of the additional 101 PMVs was completed in May 2013.

Production Period Five (PP5): In June 2012 the Government approved the acquisition of a further 214 PMVs to maintain critical skills at Thales Bendigo, which would be required for the possible production of Hawkei. The approval identified that LAND 116 Phase 3 would acquire 50 command variants and up to 158 troop variants and that LAND 17 Phase 1A would acquire six troop variants. In July 2014 the Government approved a change to the variant mix of PP5 reducing the number of troop variants from 158 to 118 and including 20 mortar variants and 20 ambulance variants. In November 2015 Defence allowed Thales to divert 12 vehicles from the production line for sale to the Netherlands, thereby delaying delivery to Defence.

As a result of operational experience a number of enhancements were made to the Bushmaster vehicle to enhance crew survivability. These include Protected Weapon Stations, Automatic Fire Suppression Systems and purpose-designed Spall Curtains which were progressively fitted to vehicles under a Rapid Acquisition Framework. These were funded outside of LAND 116 Phase 3.

In December 2007 the Chief of Army redesignated the Bushmaster Infantry Mobility Vehicle as the Bushmaster PMV.

Uniqueness

The Bushmaster PMV has been developed and built in Australia by Thales to meet a niche requirement of Australian forces.

Major Risks and Issues

Managing the integration and configuration of the baseline vehicle while incorporating upgrades to meet current operational threats will continue to be an issue – see section 5 Major Project Issues for more information.

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			
Nov 98	Original Approved		295.0	
Jul 07	Real Variation – Scope	154.8		1
Aug 07	Real Variation – Scope	360.6		2
Oct 11	Real Variation – Scope	103.9		3
Mar 13	Real Variation – Scope	221.2		4
Aug 13	Real Variation – Scope	(7.0)		5
Jun 14	Real Variation – Scope	(1.3)		6
			832.1	
Jul 10	Price Indexation		124.6	7
Jun 17	Exchange Variation		(1.1)	
Jun 17	**Total Budget**		1,250.6	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Thales Australia (Prime)	(839.8)		
	Contract Expenditure – Thales Australia (SOTASip)	(30.2)		
	Other Contract Payments/Internal Expenses	(161.2)		8
			(1031.1)	
FY to Jun 17	Contract Expenditure – Thales Australia (Prime)	(1.3)		
	Other Contract Payments/Internal Expenses	(3.7)		9
			(5.0)	
Jun 17	**Total Expenditure**		(1036.1)	
Jun 17	**Remaining Budget**		214.5	

Notes	
1	Additional PMV for Enhanced Land Force requirements.
2	Additional PMV for Overlander requirements.
3	Additional PMV to replace Battle Casualty Vehicles.
4	Additional Protected Mobility Vehicles to maintain critical skills.
5	Removal of trailer requirement and transfer of funds to LAND 121 phase 3B trailers.
6	Transfer of funds to Health System Program Office (SPO) to support Integrated Logistics Support (ILS) requirements of the PMV Ambulance variant.
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $118.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $5.7m having been applied to the remaining life of the project.
8	Other expenditure comprises: ILS deliverables ($60.3m), ancillary equipment ($27.0m), ECA ($18.8m), project management and operating expenses ($17.7m), Automatic Fire Suppression Kits (AFSS) ($9.7m), SOTAS headsets ($7.2m), facilities ($7.1m), test and evaluation ($6.1m), system engineering ($5.6m), Professional Service Providers ($0.9m), travel ($0.7m) and support test equipment ($0.1m).
9	Other expenditure comprises: project management and operating expenses ($2.9m) and ECA ($0.8m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
5.6	10.5	10.3	PBS – PAES: The variation is primarily due to the slippage of contract vehicle payments from 2015-16 to 2016-17. PAES – Final Plan: The variance is due to cost reduction in delivery of Engineering Change Orders.
Variance $m	4.9	(0.2)	Total Variance ($m): 4.7
Variance %	87.5	(1.9)	Total Variance (%): 83.9

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The full year spend was $5.0m against a final budget of $10.3m. The underspend of $5.3m was primarily due to contract vehicle payments.
			Foreign Industry	
			Early Processes	
		(5.3)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
10.3	5.0	(5.3)	**Total Variance**	
		(51.8)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Thales Australia	June 99	170.0	841.0	Variable	DEF PUR 101	1
Thales Australia (SOTASip)	Feb 09	35.8	30.2	Fixed	ASDEFCON Vol 2	

Notes

1	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
Thales Australia	370	1,015	Bushmaster Protected Mobility Vehicles	
Thales Australia (SOTASip)	737	737	Communication System	

Major equipment received and quantities to 30 Jun 17

All vehicle deliveries are now 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 Requirements	Troop Vehicle	N/A	N/A	Aug 03	N/A	1
	Assault Pioneer Vehicle	N/A	N/A	Oct 06	N/A	
	Command Vehicle	N/A	N/A	Jan 06	N/A	
	Mortar Vehicle	N/A	N/A	Feb 09	N/A	
	Direct Fire Weapon Vehicle	N/A	N/A	Feb 09	N/A	
	Ambulance Vehicle	N/A	N/A	Feb 09	N/A	
	Air Defence Variant	N/A	N/A	Oct 10	N/A	
Preliminary Design	Troop Vehicle	Oct 99	N/A	Oct 99	0	
	Assault Pioneer Vehicle	Nov 99	N/A	Feb 00	3	
	Command Vehicle	Oct 99	N/A	Oct 99	0	
	Mortar Vehicle	May 03	N/A	Mar 03	(2)	
	Direct Fire Weapon Vehicle	May 03	N/A	Mar 03	(2)	
	Ambulance Vehicle	Jul 03	N/A	May 03	(2)	
	Air Defence Variant	April 10	N/A	Dec 09	(4)	
Critical Design	Troop Vehicle System Verification Review	Oct 02	N/A	Sep 02	(1)	
	Assault Pioneer Vehicle Initial Production Vehicle Review	Oct 04	N/A	Dec 06	26	

	Command Vehicle Initial Production Vehicle Review	Oct 04	N/A	Mar 06	17	
	Mortar Vehicle Initial Production Vehicle Review	Apr 06	N/A	May 07	13	
	Direct Fire Weapon Vehicle Initial Production Vehicle Review	Apr 06	N/A	Apr 07	12	
	Ambulance Vehicle System Verification Review	Oct 05	N/A	Feb 07	16	
	Air Defence Variant Initial Production Vehicle Review	Sep 11	N/A	Aug 11	(1)	

Notes

1	Initial testing of the first variant revealed a number of deficiencies against the specification that required rectification and design changes prior to acceptance and production. This had a consequential effect on the system and design review progress for the subsequent variants. As a result additional testing was required which impacted on completing critical design review and contractor test and evaluation.

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	Troop Vehicle	Jun 04	N/A	Dec 04	6	1
	Command Vehicle	Sep 04	N/A	Mar 06	18	
	Assault Pioneer Vehicle	Oct 04	N/A	Dec 06	26	
	Mortar Vehicle	Apr 06	N/A	May 07	13	
	Direct Fire Weapon Vehicle	Apr 06	N/A	Apr 07	12	
	Ambulance Vehicle	Aug 07	N/A	Feb 08	6	
	Air Defence Vehicle	Sep 11	N/A	Jul 11	(2)	
Acceptance	All PP1 vehicles except Ambulance	Jun 06	N/A	Jul 07	13	
	PP1 – Ambulance	Jul 07	N/A	May 08	10	
	Troop Vehicle	May 06	N/A	Jun 09	37	
	Command Vehicle	Jul 06	N/A	Jun 09	35	
	Assault Pioneer Vehicle	Jan 07	N/A	Jun 09	29	
	Mortar Vehicle	May 07	N/A	Jun 09	25	
	Direct Fire Weapon Vehicle	Mar 07	N/A	Jun 09	27	
	Ambulance Vehicle	Jul 07	N/A	Jun 09	23	
	Air Defence Vehicle	Apr 12	N/A	Apr 12	0	

Notes

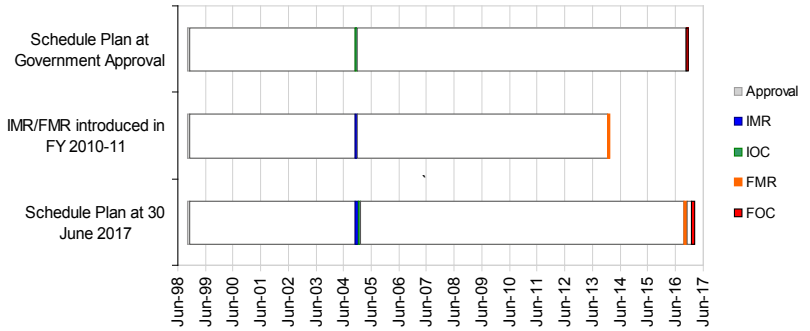
1	Additional reviews and testing requirements impacted the ability of Thales to conduct Production Acceptance Testing and Evaluation in the original timeframe. The situation was also impacted by the priority to support vehicles deployed on operations. Technical issues that resulted in design changes impacted on the ability to finalise Production and Acceptance Testing and Evaluation.

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 04	N/A	1
Initial Operational Capability (IOC) - PP1	N/A	Dec 04	N/A	2
Final Operational Capability (FOC) - PP1	Oct 07	Nov 10	37	3
Initial Operational Capability (IOC) - PP2	Jul 08	Nov 08	4	4
Final Operational Capability (FOC) - PP2	Apr 09	Nov 10	19	5
Initial Operational Capability (IOC) - PP3	Oct 11	Oct 11	0	6
Final Operational Capability (FOC) - PP3	Apr 12	Mar 13	11	7
Initial Operational Capability (IOC) - PP4	Jul 12	Jul 12	0	8
Initial Operational Capability (IOC) – PP5	Dec 13	Nov 13	(1)	9
Final Operational Capability (FOC) - PP4	Apr 14	Nov 13	(5)	10
Final Materiel Release (FMR)	Sep 16	Oct 16	1	11
Final Operational Capability (FOC) – PP5	Dec 16	Jan 17	1	12

Notes	
1	IMR was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
2	IOC was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
3	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles were being retrofitted before issue to Army.
4	This was due to the restructure of Army under Enhanced Land Force not fully completed and the unavailability of the communications harness. Army have accepted the initial vehicles without the communications capability.
5	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles were being retrofitted before issue to Army.
6	DMO no longer tracks multiple IOCs due to a change in policy.
7	This variance was due to clarification of the requirements in reaching FOC. FOC was achieved when the final subset of PP3 vehicles was operationally employed by Army.
8	IOC was achieved when the first subset of LAND 116 PP4 vehicles was operationally employed by Army.
9	IOC was achieved when the first subset of LAND 116 PP5 vehicles was employed by Army.
10	FOC was achieved when the final subset of PP4 vehicles was operationally employed by Army.
11	Completion of delivery of supplies listed in the Projects MAA at section 4 – Supplies, to the Customer. Change to original planned date is due to creation of additional production period. **The project declared FMR on 21 September 2016 and the FMR declaration was formally acknowledged by the Capability Manager on 21 October 2016.**
12	FOC **was** achieved when the final subset of PP5 vehicles **were** operationally employed by Army.

Schedule Status at 30 June 2017

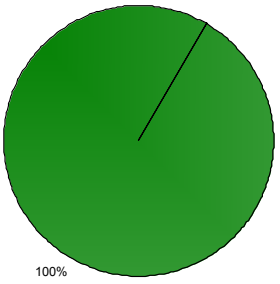


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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 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)	Commencement of delivery of full rate of production for PP1.	Achieved.
Final Materiel Release (FMR)	Completion of vehicle deliveries for all five production periods as detailed in Section 1.1.	**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 2016-17)	
Description	Remedial Action
N/A	N/A

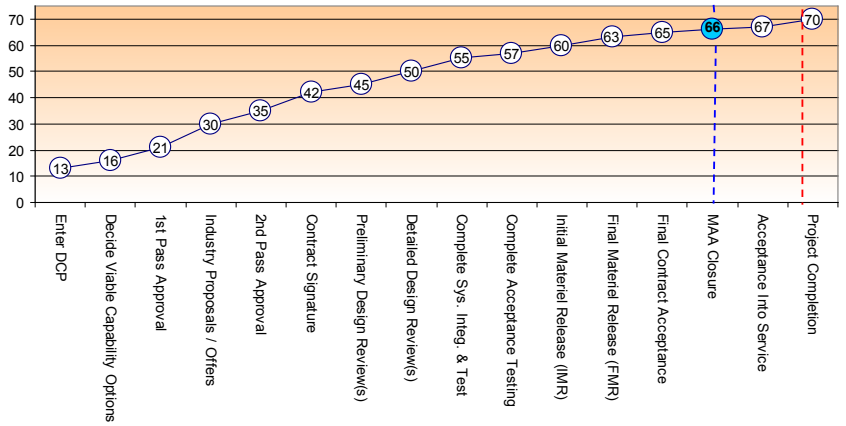
5.2 Major Project Issues

Description	Remedial Action
There is a backlog of engineering changes due to the Commonwealth and Thales reprioritising engineering effort to higher priority operationally focused tasks. This backlog needs to be addressed in order to baseline the PMVs configuration.	The application of a more managed approach and the commitment of additional resources by the Commonwealth and Thales in an effort to reduce the backlog. **Engineering changes largely completed and remaining work resourced and in progress and therefore the issue is downgraded to medium.**
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**	**10**	9	**9**	9	**66**
MAA Closure	Project Status	**10**	9	10	10	10	**10**	10	**69**
	Explanation	• Technical Difficulty: The vehicle design has been proven. • **Commercial: All contracted items have been delivered and support is now conducted through the sustainment contract.** • Operations and Support: The vehicle has fully transitioned to the PMV Fleet.							



2015-16 MPR Status - - - -	2016-17 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
In the early planning phases of the project, the operational concept and functional performance requirements were not clearly defined, making it difficult to understand and undertake appropriate cost-capability trade-offs.	Requirements Management
Cost Estimating – there was a lack of industry capability to provide adequate cost estimates and inability by Defence to evaluate the validity of the cost data.	Contract Management
Testing program – significant contingency planning should be conducted for compliance testing of a new capability.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	MAJGEN David Coghlan
Branch Head	BRIG Simon Stuart (Jul 15–**Jul 16**) **Mr Robert Lumley (acting Jul 16-Oct 16)** **BRIG Haydn Kohl (Oct 16–current)**
Program Director	Mr Luke Crampton **(to Nov 16)** **Mr Steven Brown (Nov 16–current)**
Project Manager	Mr Steven Brown

Project Data Summary Sheet[143]

Project Number	**LAND 121 Phase 3A**
Project Name	**OVERLANDER VEHICLES**
First Year Reported in the MPR	2009-10 (as Phase 3) 2012-13
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Capability Manager	**Chief of Army**
Government 1st Pass Approval	Jun 04 – Phase 3 Aug 11 – Phase 5A Dec 11 – Phase 3A
Government 2nd Pass Approval	Aug 07 – Phase 3 Aug 11 – Phase 5A Dec 11 – Phase 3A
Total Approved Budget (Current)	**$1,017.6m**
2016–17 Budget	**$58.6m**
Project Stage	**Acceptance into Service**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

In December 2011, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A – Lightweight and Light Capability (LLC) (incorporating the approved Phase 5A); and LAND 121 Phase 3B – Medium and Heavy Capability (MHC).

LAND 121 Phase 3A **has** deliver**ed** 2,146 lightweight (4x4) and light (6x6) Mercedes-Benz Geländewagen (G-Wagons), associated modules and 1,799 matching Haulmark trailers. LAND 121 Phase 3A variants include:

- 4x4 lightweight: Station Wagon, Carryall Hardtop and Carryall Soft Top;
- 6x6 light single cab: Ambulance and Cargo;
- 6x6 light dual cab: Canine, Command Post Module (CPM), Dual Cab Cargo and Line Laying Modules; and
- 6x6 Surveillance and Reconnaissance.

In addition, the project office **facilitated** the purchase of 122 G-Wagon based General Maintenance Vehicles (GMV) and 122 related trailers that form part of the scope of LAND 121 Phase 3B.

LAND 121 Phase 3A **replaced** approximately two-thirds of the current Land Rover 4x4 and 6x6 vehicle fleets that have been in service since the mid-1980s (the remainder to be replaced under LAND 121 Phase 4). The new G-Wagons, together with the modules and trailers, **are being employed** by the Army and Air Force for training and to support domestic security and emergency response efforts. The vehicles will also be employed on humanitarian assistance/disaster relief and low-threat operations.

1.2 Current Status

Cost Performance

In-year

In-year variance is due to invoices paid in the previous financial year but budgeted for in the current financial year.

Project Financial Assurance Statement

As at 30 June 2017, Project LAND 121 Phase 3A 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

Between July 2012 and March 2017, the 2,146 G-Wagons and 1,799 Haulmark trailers that are within the approved LAND 121 Phase 3A scope were issued to units throughout Australia.

Introduction into Service began on 2 July 2012 with the delivery of 20 G-Wagons and 18 trailers to the 7th Brigade in Brisbane. As of 31 March 2017, 2,146 G-Wagons and 1,799 trailers had been delivered to Defence units. The Initial Materiel Release (IMR) milestone was achieved, with caveats, in May 2014, 29 months behind schedule due to delays in implementing the vehicle support system and processing the IMR report. Declaration of Initial Operating Capability (IOC) with caveats was approved on 17 December 2015. Final Materiel Release (FMR), and Final Operating Capability (FOC) with caveats, were achieved on 28 October 2016, three months behind schedule due to delays in design, and test and evaluation activities for the CPM module.

Materiel Capability Delivery Performance

The Project is has met the capability requirements as expressed in the Materiel Acquisition Agreement (MAA) and in accordance with the requirements of the relevant Technical Regulatory Authorities. As of 30 June 2017 the Contractors have delivered 2,268 production vehicles and 1,921 production trailers to the project. This includes deliveries against 122 vehicles and trailers being acquired on behalf of LAND 121 Phase 3B.

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 Field Vehicles, Modules and Trailers (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 to specialist assets such as command shelters and communications terminals.

LAND 121 Phase 3 was approved in August 2007 to acquire 1,187 Mercedes-Benz G-Wagons, and 973 matching trailers from Haulmark Trailers (Australia). 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, Rheinmetall MAN Military Vehicles Australia for the vehicle and module requirements and with Haulmark Trailers (Australia) for the MHC trailer requirements.

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 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 subsequently achieved second pass approval in July 2013 following contract negotiations.

Uniqueness

LAND 121 Phase 3A rolled out the FVM&T capability to multiple locations throughout Australia. This presented a unique logistic challenge requiring a robust Support System to achieve stated availability requirements at the lowest life cycle cost.

Major Risks and Issues

Concurrency of critical activities

There was a chance that the project would be affected by the concurrency of critical activities including developing the design and support system, and introducing into service the Ambulance and CPM modules. This risk has been retired as the project managed the workload within the current workforce allocation through FOC leading to project closure.

IMR/IOC Caveats

Achievement of the IMR Milestone was declared with three caveats in May 2014 relating to the following issues:

- Carryall Hardtop and Station Wagon load restraint;
- G-Wagon air transportability; and
- Vehicle warning systems operating during blackout and reduced lighting operation.

FOC Caveats

Achievement of the FOC Milestone was declared on 28 October 2016 with three caveats relating to the following issues:

- **Air Transportability, external lift by CH47 for the G-Wagon FoV;**
- **Introduction Into Service (IIS) Directed Training Requirement (DTR) for G-Wagon Command Post Module (CPM) Training**
- **IIS DTR for G-Wagon Winch Gap Training.**

Further details are provided in Section 5.2.

Other Current Sub-Projects

LAND 121 Phase 3B will provide the ADF with 2,707 protected and unprotected medium and heavy vehicles which, along with 1,704 matched trailers. This will provide payloads of between four and seventy tonnes for a range of logistics functions including vehicle recovery, freight, bulk liquid distribution and personnel carriage. LAND 121 Phase 3B is formally scoped for the delivery of 122 General Maintenance **Module variants, based on the G-Wagon cab-chassis**. This aspect of the Phase 3B capability **was being managed** through Phase 3A Project Office**, however has now transitioned to LAND 121 Phase 3B due to Phase 3A project closure**.

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.

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	362.7		2
Jul 12	Real Variation – Scope (Transfer of funds to 3B)	(2,549.2)		3
			(2,186.5)	
Jun 17	Exchange Variation		32.9	
Jun 17	**Total Budget**		1,017.6	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	(569.1)		4
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(78.6)		4
	Contract Expenditure – Cablex Pty Ltd	(52.0)		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Support)	(3.3)		
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Support)	(2.8)		
	Other Contract Payments / Internal Expenses	(153.3)		4
			(859.1)	
FY to Jun 17	Contract Expenditure – Cablex Pty Ltd	(16.5)		
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	(1.4)		
	Other Contract Payments / Internal Expenses	(23.5)		5
			(41.4)	
Jun 17	**Total Expenditure**		(900.5)	
Jun 17	**Remaining Budget**		117.1	

Notes	
1	Phase 3 project budget prior to the split into Phase 3A and Phase 3B.
2	Additional scope from LAND 121 Phase 5A.
3	Removal of Medium/Heavy Capability scope to LAND 121 Phase 3B.

4	Other expenditure comprises Phase 3A C4I Government Furnished Materials ($24.0m) Outsourced Services, Contractors and Consultants ($23.3m), Salaries ($18.9m), Ambulance Intercom Module ($6.2m) and ($63.7m) for other Project Office costs not associated with the prime contracts. This includes $17.2m for expenditure on Medium and Heavy Capability activities for Phase 3B that could not be recorded as being against Phase 3B due to financial system and reporting constraints.
5	Other expenditure comprises: C4I Government Furnished Materiels and Integration ($10m), Vehicle Load Restraints ($3.2m), Dual Cab Cargo Modules ($3.0), Miscellaneous Vehicle Equipment ($3.2m), freight of vehicles to units ($1.0m), Outsourced Services ($0.4m), and other project office costs not associated with the prime contracts ($2.7m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
37.4	58.6	58.6	PBS to PAES: The variation is primarily due to a reprogramming of deliverables into 2016-17 to align with industry's capacity to deliver. PAES to Final Plan: There is no variance.
Variance $m	21.3	0.0	Total Variance ($m): 21.3
Variance %	56.9	0.0	Total Variance (%): 56.9

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Variance is due to invoices paid in the previous financial year but budgeted for in the current financial year.
			Foreign Industry	
			Early Processes	
		(17.3)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
58.6	41.4	(17.3)	**Total Variance**	
		(29.5)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $m	Type (Price Basis)	Form of Contract	Notes
Mercedes Benz Australia Pacific Pty Ltd (Acquisition)	Oct 08	321.8	599.1	Variable	ASDEFCON	1, 2
Mercedes Benz Australia Pacific Pty Ltd (Support)	Oct 08	45.1	59.3	Variable	ASDEFCON	2, 3
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	Apr 10	42.0	83.3	Variable	ASDEFCON	1, 2, 4
Haulmark Trailers (Australia) Pty Ltd (Support)	Apr 10	22.2	25.2	Variable	ASDEFCON	2
Cablex Pty Ltd	Mar 15	1.5	68.6	Firm	ASDEFCON	2, 5

Notes

1	Note that the Mercedes-Benz Australia/Pacific Pty Ltd and Haulmark Trailers (Australia) Pty Ltd Contract Prices 30 June 2017 above includes $28.3m and $4.7m respectively for GMV commitment. This item is being procured by LAND 121 Phase 3A, on behalf of the LAND 121 Phase 3B project which is funding the GMV, in accordance with the LAND 121 Phase 3B Second Pass Government Approval in July 2013.
2	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
3	Increase is due to the inclusion into the Contract price of price adjustment forecasts.
4	The majority of the increase accounts for the acquisition of additional trailers under LAND 121 Phase 5A and for the GMV trailers acquired on behalf of LAND 121 Phase 3B.
5	The increase in value of this contract reflected the contracting approach of procuring prototype Module Installations Kits followed by production Module Installation Kits.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 17	Scope	Notes
Mercedes Benz Australia Pacific Pty Ltd (Acquisition)	1,187	2,268	Vehicles with associated modules	1

Mercedes Benz Australia Pacific Pty Ltd (Support)	N/A	N/A	Support Contract for vehicles and modules	
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	979	1,921	Production Trailers	1
Haulmark Trailers (Australia) Pty Ltd (Support)	N/A	N/A	Support Contract for Trailers	
Cablex Pty Ltd	2	172	C4I Installation Kits for the CPM Module	

Major equipment received and quantities to 30 Jun 17

- All design reviews completed under Phase 3.
- All ten mission system variants have completed Production Readiness Review.
- 13 prototypes delivered.
- 2,268 production vehicles delivered to the project by the Contractor including those acquired on behalf of LAND 121 Phase 3B.
- 1,921 production trailers delivered to the project by the Contractor including those acquired on behalf of LAND 121 Phase 3B.

Notes

1	The quantity figures being communicated publicly exclude modules and prototypes. An additional 122 vehicles and trailers have been acquired for the GMV variant on behalf of LAND 121 Phase 3B. The GMV capability **is based on the 6x6 G-Wagon Dual Cab chassis. This aspect was being managed through the Phase 3A Project Office, however it has now transitioned to the LAND 121 Phase 3B due to Phase 3A project closure.**

Section 3 – Schedule Performance

3.1 Design Review Progress

Design reviews were completed under LAND 121 Phase 3.

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	Vehicles	Apr 09	N/A	Jun 09	2	1
	Modules	Mar 09	N/A	Mar 09	0	
	Trailers	Oct 10	N/A	Oct 10	0	
Critical Design	Vehicles	Jun 10	N/A	Jun 10	0	
	Modules	Jul 10	N/A	Oct 11	15	2, 3
	Trays and Trailers	Mar 11	N/A	Aug 11	5	2
Critical Design (Redesign)	Module (Light Ambulance, Cab Chassis)	Feb 15	N/A	Apr 15	2	4
	Module (Light CPM)	Sep 15	N/A	Mar 16	6	5

Notes

1	Vehicle Preliminary Design occurred as planned from 22 April 2009 to 6 May 2009, however, exit was unable to be granted until 12 June 2009 when the Commonwealth was satisfied with the way ahead for issues identified during the review.
2	Critical Design Review variance was due to a change in specification by the Commonwealth.
3	All work on the Personnel/Cargo Restraint System (PCRS) Module ceased post Critical Design following advice from Capability Development Group (CDG) that removed the requirement for a PCRS Module. CDG recommended the acquisition of 15 additional Modules (Light Cargo) in lieu of the PCRS module. Army Headquarters and Air Force Headquarters concurred with this change.
4	Two extra months taken for retesting of electromagnetic compatibility performance and in preparation of conduct of Critical Design Review and Functional Configuration Audit.
5	Two month variance was due to delay in initial completion of the prototypes. A further four month variance due to the need to repeat a number of tests, availability of testing resources/facilities and other competing priorities.

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	Module (Light Ambulance, Cab Chassis)	Oct 10	Jan 12	Feb 12	16	1
	All other vehicle, module (except Ambulance) and trailer variants had passed under Phase 3	Jul 11	Dec 11	Dec 11	5	2
	Module (Light Ambulance, Cab Chassis) (Redesign)	Nov 14	N/A	Nov 14	0	
	Module (Light CPM) (Redesign)	Feb 15	N/A	Aug 15	6	3

Functional Configuration Audit	Module (Light Ambulance, Cab Chassis)	Apr 11	Aug 12	Apr 15	48	2
	Tray (Light Surveillance and Reconnaissance)	Feb 11	Sep 12	Nov 12	21	2
	All other vehicles and modules completed under Phase 3	Feb 11	Oct 11	Oct 11	8	2
	Module (Light CPM) (Redesign)	May 15	N/A	Oct 16	17	3
Acceptance Verification and Validation	Light and Lightweight Trailers completed under Phase 3	Jul-Oct 11	N/A	Jul-Nov 11	1	4
	Module (Light Ambulance, Cab Chassis) (Redesign)	Nov 14-Feb 15	N/A	Nov 14-Apr 15	2	5
	Module (Light CPM) (Redesign)	Feb-May 15	N/A	Oct 16	17	3

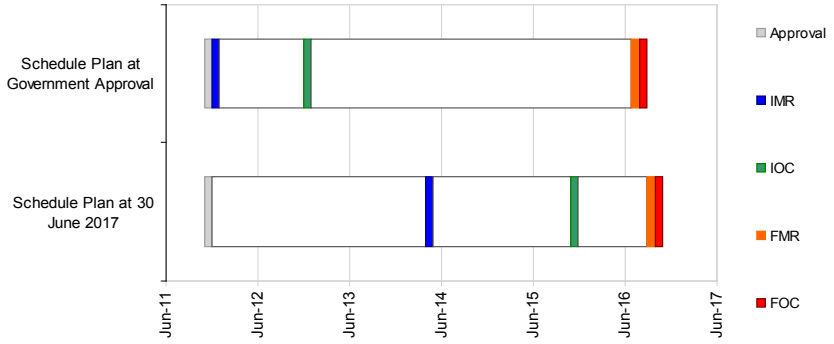
Notes	
1	Delayed from originally planned first week of January 2012 to February 2012 due to collective availability and conduct of Surveillance and Reconnaissance User Trial in mid to late January 2012.
2	Variances are due to specification changes by the Commonwealth.
3	This Test and Evaluation phase relates only to Commonwealth re-design and integration with digital C2 systems. Delay due to design activities taking longer than anticipated and delay in the completion of the prototypes.
4	One extra month taken for retesting.
5	Two extra months taken for retesting of electromagnetic compatibility performance and in preparation of conduct of Critical Design Review and Functional Configuration Audit.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 11	May 14	29	1
Initial Operational Capability (IOC)	Dec 12	Dec 15	36	2
Final Materiel Release (FMR)	May-Jul 16	Oct 16	3	3
Final Operational Capability (FOC)	Mid 16	Oct 16	3	3, 4

Notes	
1	December 2011 to June 2012: Delay to the implementation of the vehicle support system. July 2012 to May 2014: Delay due to processing of the IMR Report. With Army Headquarters' concurrence the main roll-out of vehicles, modules and trailers commenced in July 2012. IMR was declared with caveats on 28 May 2014 with these formally agreed as satisfied by AHQ on 29 February 2016, with implementation of solutions in progress. Further details are provided at Section 5.2.
2	Delays due to the development required for module components. IOC was declared with caveats on 17 December 2015, with these formally agreed as satisfied by AHQ on 29 February 2016, with implementation of solutions in progress. Further details are provided at section 5.2.
3	Variance due to delay imposed by complexity of finalising design and manufacture of the CPM module.
4	**FOC was declared with caveats on 28 October 2016. Further details are provided at Section 5.2.**

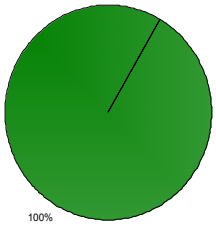
Schedule Status at 30 June 2017



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 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)	Full issue to a Brigade of the initial vehicle variants Carryall (quantity 15), Panel Van (quantity three), Station Wagon (quantity 15), Cargo (quantity nine) and Canine (quantity one). IMR was achieved provided the following caveats are resolved prior to IOC: 1. Carryall Hardtop and Station Wagon load restraint; 2. G-Wagon air transportability; and 3. Vehicle warning systems operating during blackout and reduced lighting operation. Refer to Section 5.2 for more detail.	Achieved with caveats.
Final Materiel Release (FMR)	**Introduction into service of the remaining Mission Systems (Vehicles, Modules and Trailers) including;** • **All** light and lightweight vehicles, modules, and trailers and associated supplies transferred to sustainment; • Verification and validation, testing and certification of all supplies; • Maintenance support and training provided for operators and maintainers; and • Support spares and repair parts provided for a period of three years. **FMR was achieved following the formal agreement that the IMR/IOC caveats were satisfied on 29 February 2016.**	**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
The concurrency of critical activities including developing the design and support system, and introducing into service the Ambulance and CPM modules, has the potential to impact on cost, schedule, supportability and reputation.	**This risk has been retired following the achievement of FMR, and FOC with caveats, in October 2016.**
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

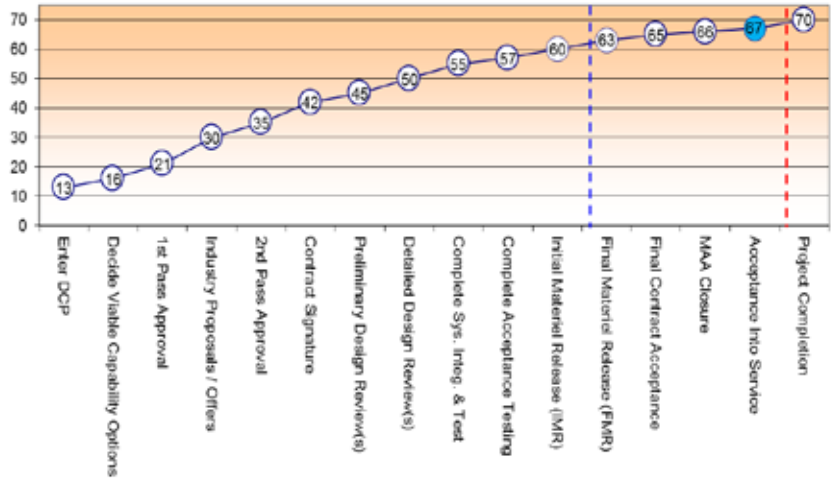
Description	Remedial Action
Carryall Hardtop and Station Wagon Load Restraint Anchorages (**IMR/IOC** caveat). The respective DEF(AUST) Specifications for the Carryall Hardtop (CAHT) and the Carryall Station Wagon (CASW) require the rear load space to be "*integrated within the Vehicle Cab"* and that "*all items stowed inside the Cab with a mass of greater than 250grams to remain stowed when subjected to specified crash loadings*". However, both the CAHT and the CASW were designed/manufactured in accordance with normal commercial practise that does not meet the Australian Defence specific requirement.	The Project Office, in conjunction with MBAuP, developed modification packages for both the CAHT and the CASW that enabled the requirements of the respective DEF(AUST)s to be satisfied. AHQ formally agreed this caveat was satisfied on 29 February 2016. Modification Kits **were** subsequently issued and installation **commenced.** **This issue has been retired, as there were no outstanding support projects to be provided.**
Air Transportability (**IMR/IOC** caveat). At the time of its submission, the Materiel Release MR1 (IMR) and MR2 (Trailer) Achievement Report identified that G-Wagons were yet to be formally certified for transportation by air.	**This IMR/IOC caveat has been resolved, with the external air transport element superseded by the FOC caveat below.**
Vehicle warning systems operating during blackout and reduced lighting operation (**IMR/IOC** caveat). The DEF(AUST) Specifications for the G-Wagon fleet required "*the vehicle crew to be able to dim (shield) and switch off the instrument lights*" and "*to be able to dim (but not switch off) Driver Console warning lights*" during Blackout / Reduced Lighting modes. The MR1 (IMR) and MR2 (Trailer) Achievement Report however identified that the G-Wagon fleet, being essentially a Military Off-The Shelf purchase, was compliant to international requirement – Blackout Lighting Systems for Tactical Land Vehicles which states: "*Blackout conditions implies total blackout in which all vehicle lighting (both normal and blackout lighting) is extinguished*".	**This issue has been retired as a solution was designed, fully funded and is being implemented.**
External Air Lift (FOC Caveat). Certification of external air lift by CH47 Helicopter for the G-Wagon family of vehicles was incomplete at FOC declaration.	**Technical analysis completed in December 2016 confirmed the appropriate risk acceptance requirements for safe and effective external air lift by CH47 Helicopter. The Project Office and Capability Manager have developed a risk assessment and appropriate inspection processes to ensure safe external air lift of the G-Wagon family of vehicles.**
G-Wagon Command Post Module (CPM) Operator Training (FOC Caveat). CPM training for the required number of personnel has been limited by the substantial pre-requisites required for the CPM operator course.	**A G-Wagon Training Consolidation Directive is being jointly drafted by the Project Office and Capability Manager to cover all remaining aspects of operator training for G-Wagon Mission Systems and ancillary equipment. The Project Office has completed all responsibilities for the Training Consolidation Directive, with this now being staffed for approval by the Capability Manager. This is expected to be approved in August 2017.**
G-Wagon Winch 'Gap' Training (FOC Caveat). Initial G-Wagon operator training was conducted before a winch system was fitted to the G-Wagon training vehicle fleet. Winch 'gap' training was subsequently conducted through a combination of a fly-away team and unit-based training. There remains a deficiency of this winch training for some operators.	**A G-Wagon Training Consolidation Directive is being jointly drafted by the Project Office and Capability Manager to cover all remaining aspects of operator training for G-Wagon Mission Systems and ancillary equipment. The Project Office has completed all responsibilities for the Training Consolidation Directive, with this now being staffed for approval by the Capability Manager. This is expected to be approved in August 2017.**

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	10	10	9	9	67
Acceptance into Service	Project Status	10	10	10	10	10	9	10	69
	Explanation	• **Cost: Expenditure for the Project has been completed and therefore costs are proven.** • **Operations and Support:** The routine fleet management has transitioned to Sustainment.							



2015-16MPR Status - - - -	2016-17 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
To avoid costly and time consuming Contract Change Proposals, due to requirement variations, it is critical that Defence stakeholders provide clarity in terms of the Operational Concept Document and Functional Performance Specification and that the project office captures the origin and maintains the traceability into the System Specification.	Requirements Management
The time required to negotiate contracts for the LAND 121 project is a significant driver of the schedule.	Contract Management Requirements Management
When the organisation is under pressure to compress schedule so as to hasten the delivery of capability to the war-fighter, key decisions must be taken in light of potential impact on the ability of the project to achieve this aim.	Schedule Management Resourcing

It is important to ensure the early involvement of Army Logistics Training Centre (ALTC) staff in the development of the Training requirement. This includes reviewing the relevant contract template and clauses pertaining to training and participation in preliminary meetings to the Initial Training Conference. Suggest preliminary brief by ALTC for them to define their expectations, and 'fit' to contractual requirements.	Resourcing
The effort involved with the vehicle/trailer interface (and any other interface with the prime equipment – e.g. wheels, required payload, etc) should not be underestimated even for apparently simple equipments. The early formation of interface working groups is important.	Requirements Management
Significant time and effort may be saved if critical items of Support and Test Equipment identified during source evaluation are secured concurrently with the prime system acquisition, when Commonwealth negotiation power is greatest.	Contract Management
Strategic Relationship Boards, or similar forums for senior management of the Commonwealth and the Prime Contractor to meet on a regular basis, are useful mechanisms that should be seriously considered across other major projects. Pitched at Director General and Managing Director level, these board meetings have real potential to resolve issues in a more timely and effective way than contract level discussions, particularly in the in-contract management phase.	Contract Management
The complexity of integrating communication and battle-management equipment into vehicles during the design and development phase of both materiel systems, with different project offices, prime contractors and development cycles, should not be underestimated. More work should be done by Defence in the Needs/Requirements stage to de-conflict or better integrate interdependent projects.	Requirements 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.	**Schedule Management**

Section 8 – Project Line Management

8.1 Project Line Management in 2016–17

Position	Name
Division Head	MAJGEN David Coghlan
Branch Head	BRIG Haydn Kohl **(to Oct 16)** **Ms Sarah Myers (Oct 16-current)**
Project Director	Mr Ken Butler **(to Dec 16)** **LTCOL Dave Hughes (Dec 16-current)**
Project Manager	Mr Geoff Fallon (Acting) (Vehicles and Modules) **(to Feb 17)** Mr Brian Whiffen (**Vehicles, Modules and** Trailers) Mr Ron Thompson (CPM Module)

Project Data Summary Sheet[144]

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
Total Approved Budget (Current)	**$855.5m**
2016-17 Budget	**$138.2m**
Project Stage	Integration and Test
Complexity	**ACAT II**

Section 1 – Project Summary

1.1 Project Description

AIR 7403 Phase 3 will acquire two A330-200 aircraft and convert them to KC-30A Multi-role Tanker Transport (MRTT) aircraft and deliver them together with their 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 aircraft, MRTT#7, will undergo 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 2017** has resulted in an **underspend** of **$10.4m. This variance is attributed to savings associated through an enhanced aerial refuelling capability and the procurement of a spare engine, in conjunction with the rescheduling of payments for initial spares and support and test equipment procurements.**

Project Financial Assurance Statement

As at **30 June 2017**, 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.

Major project milestones achieved in 2016-17 include:

- **Completion of MRTT#6 Mid Production Review in September 2016;**
- **Completion of GTC Preliminary Design Review in November 2016;**
- **Completion of MRTT#7 Mid Production Review in November 2016;**
- **Completion of GTC Critical Design Review in March 2017;**

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.

- **Additional MRTT Type Acceptance in April 2017; and**
- **Acceptance of MRTT#6 in June 2017.**

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.**

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

Early identification of baseline configuration differences between the Airbus A330-200 aircraft and Air Force KC-30A fleet may lead to integration issues during conversion to MRTT as well as introduce increased supportability costs. Defence is also re-assessing previously accrued civil flight hours on both A330-200 aircraft to determine the impact of the significantly increased in-service utilisation on the Planned withdrawal Date of the KC-30A**.**

Principal challenges associated with the modification of MRTT#7 to introduce a GTC capability include:

- **Accreditation and certification of the suite of Information, Technology and Communications (ITC) equipment to be installed in the GTC aircraft; and**
- **Availability at aircraft acceptance of the suite of logistics products required to support introduction into service of the GTC capability.**

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		681.9	
Mar 16	Real Variation – Scope	187.7		1
Mar 16	Real Variation – Budgetary Adjustment	(4.8)		2
			183.0	
Jun 17	Exchange Variation		(9.3)	
Jun 17	**Total Budget**		855.5	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Airbus Defence and Space	(308.7)		3 4
	Other Contract Payments / Internal Expenses	(10.6)		4
			(319.3)	
FY to Jun 17	Contract Expenditure – Airbus Defence and Space	(99.8)		3
	Other Contract Payments / Internal Expenses	(28.0)		4
				4
			(127.7)	
Jun 17	**Total Expenditure**		(447.1)	
Jun 17	**Remaining Budget**		408.4	

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 ($19.6m), 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
169.6	145.8	138.2	PBS to PAES: The second aircraft is scheduled to complete MRTT conversion by third quarter 2017 after which it will enter a GTC modification program. The variance is due to reprogramming of the second aircrafts MRTT modification schedule to align with the additional GTC modification. PAES to Final Plan: The variation is primarily the result of budgeted exchange rate adjustments to the final budget plan.
Variance $m	(23.8)	(7.6)	Total Variance ($m): (31.4)
Variance %	(14.1)	(5.2)	Total Variance (%): (18.5)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.3)	Australian Industry	Variance is due to savings associated with an enhanced aerial refuelling capability and spare engine procurement. The variance was further driven by rescheduling of payments associated with spares / S&TE and the spare engine including higher than planned Foreign Military Sales (FMS) payments.
		(1.1)	Foreign Industry	
			Early Processes	
		(10.4)	Defence Processes	
		1.4	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
138.2	127.7	(10.4)	**Total Variance**	
		(7.5)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Airbus Defence and Space	Jun 15	408.8	573.2	Variable	ASDEFCON	1, 2
US Government	Mar 16	11.1	9.2	Fixed	FMS	1

Notes

1 Contract Value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

2 Price at 30 June 2017 includes the addition of Contract Change Proposals (CCPs) 133, 134, 136, 137, 138, 139 and 140.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
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 17

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	Aug 17	2	2
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.

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	Oct 17	2	1, 2
	MRTT#7 GTC Fitout Completion	Dec 18	N/A	Feb 19	2	2
	MRTT#7 GTC Final Acceptance	May 19	N/A	Jun 19	1	2
	Contract Final Acceptance	Oct 17	Sep 19	Sep 19	23	3

Notes

1 The Commonwealth has factored in additional time to accommodate rework activities that may be required to close out these milestones. This remains within the project's planned delivery window.

2 The variance represents current schedule forecast with work to refine the schedule being undertaken.

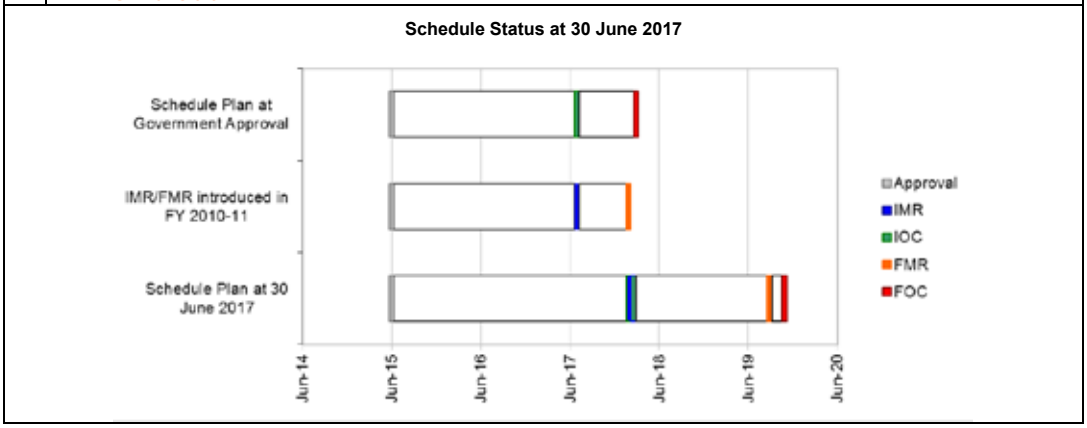
3 Variance is directly linked to the inclusion of the GTC modification and acceptance and introduction into service of the MRTT GTC aircraft.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul 17	Mar 18	8	1
Initial Operational Capability (IOC)	Jul 17	Apr 18	9	1
Final Materiel Release (FMR)	Mar 18	Oct 19	19	1
Final Operational Capability (FOC)	Mar 18	Dec 19	21	1

Notes

1 Variance is directly linked to the inclusion of the GTC modification and acceptance and introduction into service of the MRTT GTC aircraft.



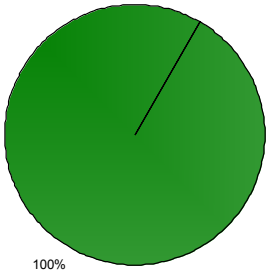
Note

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 expects to meet 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 is expected to be achieved in March 2018.	Not yet achieved
Final Materiel Release (FMR)	KC-30A MRTT#7 with GTC capability delivered and accepted including the following:	Not yet achieved

	• **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.**	

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.
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 to assess previous commercial operations and their impact to KC-30A PwD.
Airbus Defence and Space may not have fully scoped the requirements of equipment options contracted under CCP-133 (additional aircraft configuration options) impacting the ability to achieve closer KC-30A fleet configuration commonality.	Maintain close communications with the Prime contractor to clarify and agree on a finite set of requirements to ensure a common configuration of the KC-30A fleet whilst not affecting safety, operations and airworthiness. **Risk Retired. CCP-133 options fitted to both additional aircraft. Acceptance of MRTT#6, the first additional KC-30A MRTT aircraft, was achieved in June 2017.**
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
The additional suite of Logistics products required to support both integration of the modification and or acceptance into service 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 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.**

5.2 Major Project Issues

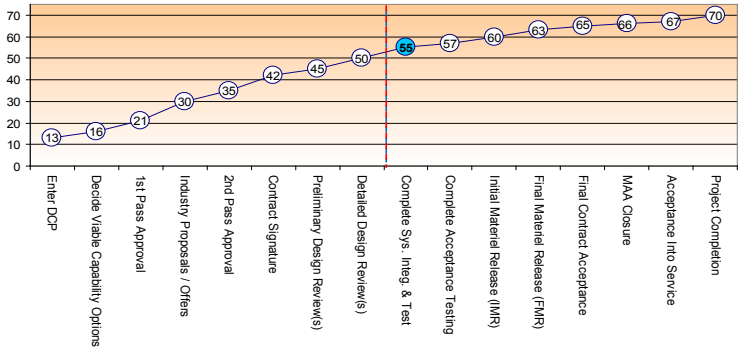
Description	Remedial Action
N/A	N/A

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							
		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 Test	Project Status	7	7	7	10	8	7	7	53
	Explanation	• **Schedule:** Airbus Defence and Space (AD&S) formally disclosed slippage in completing some minor modification activities during MRTT #6 and #7 conversion program. AD&S and AIR7403 are working collaboratively to replan and recover schedule. • Requirements: Based on the recent completion of GTC Critical Design Review, the requirements for the GTC modification are well understood. • **Technical Understanding:** The technical solution for the additional KC-30A MRTT aircraft is very well understood as it is based on the existing RAAF KC-30A fleet. The GTC design is agreed with the Satellite Communications solution based on a fielded civil solution. • **Commercial:** Preserving the conversion schedule while maintaining the desired level of quality for contract deliverables remains commercially challenging. • **Operations and Support:** The Through Life Support contract is operative; however there are challenges in determining the support requirements associated with KC-30A fleet increase from 5 to 7 aircraft, and introduction of the GTC capability.							



2015-16 MPR Status - - - - 2016-17 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 2016-17

Position	Name
Division Head	AVM Catherine Roberts
Branch Head	AIRCDRE Phillip Tammen
Project Director	Mr Luke Brown (to Sep 16) Mr Wayne Bicket (Acting Sep 16–current)
Project Manager	Mr Wayne Bicket (to Sep 16) WGCDR David Mackay (Aug 16–May 17) SQNLDR Damien Maldon (May 17–current)

Project Data Summary Sheet[145]

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
Total Approved Budget (Current)	$730.7m
2016–17 Budget	$40.8m
Project Stage	Second Pass Approval
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 System (CMATS). The CMATS component of AIR5431 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 projects through the Estate and Infrastructure Group and the Chief Information Officer Group to enable CMATS introduction into service.

1.2 Current Status

Cost Performance

In-year

In-year expenditure is $36.3m against a budget of $40.8m. The year end underspend of $4.5m is due to delays in contract negotiations.

Project Financial Assurance Statement

As at 30 June 2017, project AIR 5431 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 there is insufficient 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 planned to occur in October 2015, and is now likely to occur during fourth quarter 2017, over two years later than expected. This timeframe is considered optimistic due to the aggressive approach to achievement of contract signature. The offer and negotiation process has been protracted, in part due to misalignment of customer approval processes through two separate governance structures, but also due to Thales not yet producing an acceptable offer that represents value for money for Defence and Airservices. Assessment of the refined Phase C offer received in June 2016 from Thales found that although the offer was not affordable it was considered to be better defined and provided a basis for further negotiation. Negotiations recommenced with Thales in December 2016 with a caveat from Defence that the current offer, and likely negotiated outcome, would not enable Defence to commit to a contract without approval of a significant Real Cost Increase (RCI) to its Second Pass approved budget, which would require government approval.

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.

An executable schedule that fits within the Defence Second Pass approved Materiel Acquisition Agreement (MAA) milestone dates and associated scope definition for the AIR5431 Phase 3 Initial Operational Capability (IOC), has not been agreed between the Customer and Thales. The refined Phase C schedule provided by Thales in June 2016 indicates that the Defence IOC date remains viable, though this is premised on a number of conditions that are not acceptable to Defence. Prior to 30 June 17, Defence assessed achievement of IOC and Final Operational Capability (FOC) within the window agreed at Second Pass as high risk and with consideration of best available information, reforecast IOC to November 22 and FOC to October 25. The reforecast dates will be verified once Thales' final offer is received and accepted by the customers.

Materiel Capability Delivery Performance

CMATS has not delivered any materiel capability to date. System Requirements Analysis (conducted under Advanced Work Order (AWO) 2) was planned to be completed in August 2017, however this is now forecast for November 2017. Whilst Airservices and Defence expect the full capability can be achieved and delivered by Thales, capability definition is currently at a low-level of maturity. This is as a result of affordability constraints that have resulted in consideration of capability and schedule trade-offs requiring detailed negotiation with Thales. Low schedule maturity continues to be a source of risk to both the IOC and FOC delivery. This has been demonstrated by Thales' underperformance in delivering Advance Work Order (AWO) 2 outcomes, as well as their commercial desire to complete System Requirements Analysis (in order to manage their design scope risk) prior to entering into the main contract.

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 AIR5431 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 fundamental input to capability 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 continues to work jointly with Airservices as the lead agency for the CMATS, to establish a harmonised national air traffic system.

AIR5431 Phase 3 achieved First Pass approval in November 2011 as part of a combined project with AIR5431 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 AIR5431 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 AIR5431 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. The AIR5431 Phase 3 Second Pass submission was based on tender agnostic capability, schedule and cost data, provisioned by Airservices as a Not-to-Exceed (NTE) price for the Defence share of the common elements of CMATS, inclusive of risk and contingency. AIR5431 Phase 3 achieved Second Pass approval in December 2014. It should be noted that this NTE had significant caveats, which have now been realised, so Defence can no longer rely on that NTE.

A Memorandum of Cooperation signed in February 2015 confirmed Airservices and Defence agreement that Airservices would, as lead agency, enter solely into agreements with Thales for the acquisition and support of CMATS on behalf of both Airservices and Defence. Airservices management of the contracts with Thales will be governed by an On Supply Agreement (OSA) established between Defence and Airservices in June 2015. In addition to defining the mutually beneficial governance framework, the OSA sets out obligations of each party with respect to the delivery of the CMATS and defines the on-supply to Defence, of the agreed Defence supplies and services, which are delivered to Airservices by Thales.

The CMATS program organisation has been structured to ensure joint decision-making by the parties. This is achieved through the implementation of a Joint Program Team consisting of both Airservices and Defence subject matter experts, a Joint Program Steering Group consisting of Defence and Airservices senior representatives, and 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 both parties that their 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.

Airservices and Defence conducted an approach to market in June 2013 and are engaged in negotiations with Thales, who for the purposes of negotiations are considered the designated tenderer. In order to enable CMATS critical activities to commence and

concurrently reduce potential risk with the negotiation process, Airservices entered into the Advance Work Supply Arrangement Deed of Standing Offer (AWSA) with Thales. The AWSA provides a commercial mechanism to obtain advance supplies and services related to the common elements of the system, as well as Defence specific and Airservices specific supplies. A Collateral Deed in respect of the AWSA was concurrently executed by Defence, Airservices and Thales, to provide for certain rights and obligations of Defence. The parties have agreed that they will execute a similar deed in respect of the main project contracts (acquisition and support).

Airservices commenced negotiations with Thales in February 2015. The approach undertaken by Airservices, was to adopt a five staged 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 anticipated in the acquisition contract. The purpose of Phase E is to negotiate critical non-compliances in the Phase C offer, with the intended outcome being executable acquisition and support contracts.

In entering into Phase E critical negotiations in December 2016, it is acknowledged that the joint program has experienced a long and drawn-out negotiation process. Whilst program stakeholders for Defence and Airservices have agreed to progress the Thales Phase C offer through critical negotiations, there remains a number of challenges to overcome, such as the higher-than-anticipated price, unrealistic expectations of customer furnished supplies and services, a number of breaches of the advised (customer) technical constraints and substantial risk and scope transfer from Thales to the customer.

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.

On 6 June 2017 the Minister for Defence agreed with the Minister for Defence Industry and Minister for Infrastructure and Transport, that AIR5431 Phase 3 would be designated a Project of Concern.

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 between 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. AIR5431 Phase 3 operates a separate risk register for Defence specific/unique risks and issues. All major risks that have an impact on AIR5431 Phase 3 have been disclosed, regardless of where they are managed.

The sources of risk for the CMATS program stem not only from the software and integration complexity inherent in developmental design, but are further complicated by the organisational differences of the two agencies. The significant risks facing the program during this pre-contract stage 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.
- 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.
- Accreditation of CMATS may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting security requirements.
- Delivery of CMATS may be impacted by dependent Airservices and Defence organisational inefficiencies, driven by divergent goals, or lack of oversight and control.
- The CMATS capability, including sub-systems and software may fail to meet assurance requirements and obtain regulator (CASA) approval due to insufficient evidence or the proposed approach to aggregate the CMATS data into the Defence network.

There are number of issues impacting Airservices and Defence individually and jointly :

- The Defence funds required to execute the acquisition and support contracts will exceed the funds approved at Second Pass.
- Organisational differences between Airservices and Defence impact joint program team efficiency and performance.
- Insufficient dependent AMACCS system assets during CMATS introduction into service will impact current operations.
- Estate and Infrastructure Group delays to delivery of Airfield Systems Interfaces (ASI) will delay CMATS activation.
- Airservices dependant projects delivering Airservices Customer Furnished Supplies (CFS) required by Defence to deliver its CFS to the Contractor System Verification Facility (CSVF) at System Design Review (SDR) plus 3 months are delayed.
- 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.

- 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.
- 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.

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		731.4	
Jun 17	Exchange Variation		(0.7)	
Jun 17	**Total Budget**		**730.7**	2
	Project Expenditure			
Prior to Jul 16	Contract Expenditure - Airservices Australia	(15.8)		
	Contract Expenditure - Jacobs Australia	(7.9)		
	Other Contract Payments/Internal Expenses	(1.7)		1
			(25.4)	
FY to Jun 17	Contract Expenditure - Airservices Australia	(27.5)		
	Contract Expenditure - Jacobs Australia	(7.0)		
	Other Contract Payments/Internal Expenses	(1.8)		1
			(36.3)	
Jun 17	**Total Expenditure**		**(61.7)**	
Jun 17	**Remaining Budget**		**669.0**	

Notes	
1	Other contract payments/Internal expenses: Operating expenditure, contractors, minor contract expenditure and other capital expenditure not attributable to the listed contracts.
2	Government consideration of a Real Cost Increase is expected to occur in December 2017 to cover additional costs related to the acquisition of the prime system, an ADATS life of type extension and radio communication system requirements to support transition.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
59.9	50.6	40.8	PBS - PAES : The variation is a result of contract signature being delayed to 2017-18. Due to extended negotiations with the preferred tenderer under the joint OneSKY program being led by Airservices Australia. PAES- Final Plan: The variation is a result of contract signature being delayed to 2017-18.
Variance $m	(9.3)	(9.8)	Total Variance ($m): (19.0)
Variance %	(15.5)	(19.3)	Total Variance (%): (31.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The current underspend is due to delays in contract negotiations.
			Foreign Industry	
		(2.5)	Early Processes	
		(2.0)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
40.8	36.3	**(4.5)**	**Total Variance**	
		(11.1)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Jacobs Australia	Dec 14	107.7	108.7	Variable	Modified ASDEFCON	2
Airservices Australia	Jun 15	N/A	50.1	Reimbursement	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 On Supply Agreement (OSA) established between Defence and Airservices. Defence reimburses Airservices for all Joint Program Costs and Defences share of CMATS.
2	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
Jacobs Australia	N/A	N/A	Service based integrated support.	
Airservices Australia	N/A	N/A	Pre-contract risk mitigation engineering work.	

Major equipment received and quantities to 30 Jun 17
Nil.

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	CMATS System Requirements Analysis	Aug 17	N/A	Nov 17	3	1
Preliminary Design	CMATS	TBA	TBA	TBA	TBA	1
Critical Design	CMATS	TBA	TBA	TBA	TBA	1

Notes	
1	The project is not yet in contact with Thales for the acquisition of the CMATS; however some critical engineering work is being conducted as pre-contract work packages under the Advanced Work Supply Arrangement in order to reduce schedule risk. This contract is expected to be signed during fourth quarter 2017.

3.2 Contractor Test and Evaluation Progress

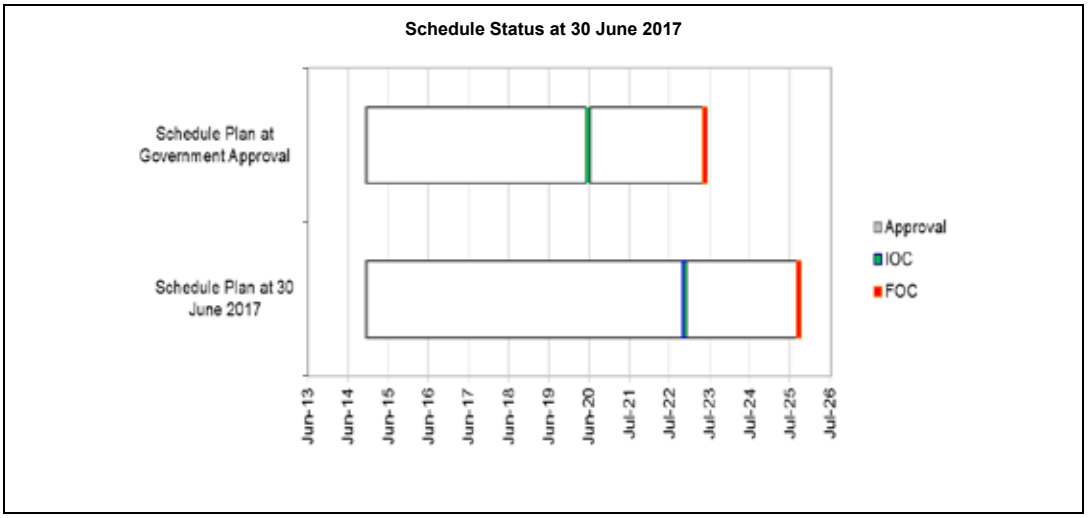
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	CMATS	TBA	TBA	TBA	TBA	1
Acceptance	CMATS	TBA	TBA	TBA	TBA	1

Notes	
1	Dates pending contract signature for the acquisition of the CMATS which is expected to occur during fourth quarter 2017.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

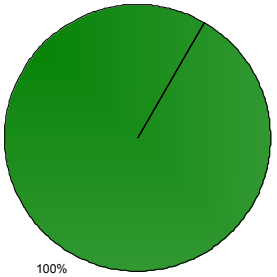
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	TBA	TBA	TBA	1
Initial Operational Capability (IOC)	Jun 20	Nov 22	29	2
Final Materiel Release (FMR)	TBA	TBA	TBA	1
Final Operational Capability (FOC)	Jun 23	Oct 25	28	2

Notes	
1	The IMR and FMR milestones are expected to be confirmed at contract signature during fourth quarter 2017.
2	Defence and Airservices continue to negotiate capability, cost and schedule with Thales. The original planned IOC and FOC achievement window is considered at risk, however until a final contract position is reached between the parties, the forecast and variance are uncertain. This contract is expected to be signed during fourth quarter 2017.



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.
	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 the School of Air Traffic Control (SATC)) and Edinburgh transitioned from ADATS. Forecast achievement date TBA at contract signature.	Not yet achieved
Final Materiel Release (FMR)	Delivery of all CMATS material system elements configured to the final system build, at Amberley, East Sale, SATC, Edinburgh, Oakey, Nowra, Tindal, Darwin, Townsville, Williamtown, Pearce, Richmond and Gin Gin. Forecast achievement date TBA at contract signature.	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 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.
Delays to procurement of the AMACCS transition solution due to insufficient funding will lead to insufficient AGA assets to enable CMATS transition within the agreed contract schedule.	Progress urgent acquisition of supplementary AMACCS equipment with additional project funding that is subject to Government approval.
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.	Ensure that strong contractor/customer collaborative arrangements, that drive positive contractor and customer performance, are embedded in the contracts.
The current approach to aggregate CMATS data within the Defence network may not satisfy the requirements for the Civil Aviation Safety Authority (CASA) accreditation.	Prepare a paper on the impacts of an aggregated network and identify requirements of the Defence network architecture necessary to meet regulatory/safety requirements.
Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues.	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.	In addition to effective stakeholder and decision-maker engagement, continue to maintain operational alignment with the On Supply Agreement and influence contract negotiations to ensure problem resolution clauses are sufficiently provisioned for within the contracts.
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.	Formalise the engagement approach with CASA to establish appropriate information provisioning and undertake a risk reduction study to determine an appropriate means of applying software assurance.
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

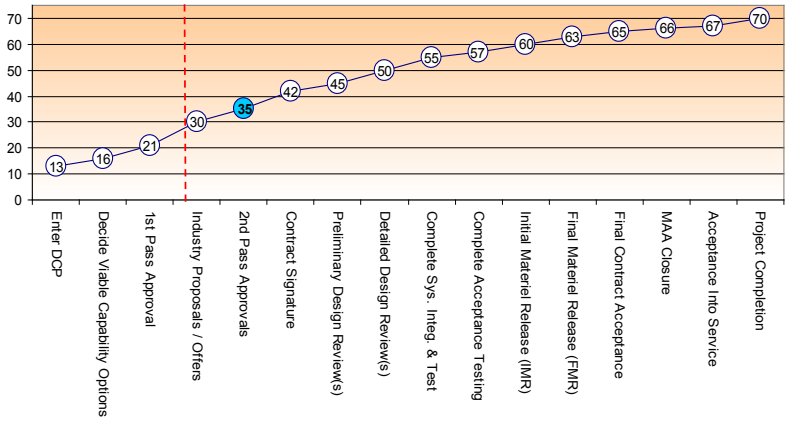
Description	Remedial Action
The funds required to execute the acquisition and sustainment contracts has exceeded the funds approved at Second Pass, this has occurred due to an underestimation of the cost of a harmonised capability and furthermore as a result of preferred supplier cost escalations during negotiation.	The Project will undertake coordination activities with the capability manager to concurrently investigate opportunities for scope rationalisation and prepare a submission for Government approval. Other strategies under consideration include alternative commercial solutions such as partial fee-for-service.
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.	Continue to progress mutually agreed roles and responsibilities within the bounds of the On-Supply agreement.
AIR5431 Phase 3 is unable to introduce CMATS into service without impacting current operations due to insufficient dependent AMACCS system assets.	The optimal identified treatment strategy is for AIR5431 Phase 3 to seek a scope and funding increase for the replacement of AMACCS.
Estate and Infrastructure Group delays to delivery of Airfield Systems Interfaces (ASI) will delay CMATS activation.	In addition to engagement of senior stakeholders on this issue, continue to work with E&IG to develop an 'end-to-end' plan for ASI.
Delays in Airservices dependant projects delivering Airservices Customer Furnished Supplies, will impact delivery of CFS to the Contractor System Verification Facility (CSVF) at System Design Review (SDR) plus 3 months.	Engage appropriate Airservices (and OneSKY) stakeholders utilising established mechanisms within the On Supply Agreement.
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.	Support the ADATS Capability Manager (Air Force) in the definition of the life-of-type extension, including preparation of documentation for Government approval.
A lack of clarity of scope allocated between CIOG and Thales, ~~a~~ resulted in a number of facilities and site support activities	Activities have now been estimated, but remain unfunded. The Project will aim to leverage existing E&IG contracts/panels for

not being accounted for in Defence project estimates.	regional site works and ensure a clear definition of funding requirements is presented for Government consideration and 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.	Source additional configuration and data management resources to support policy and process reform. Develop a business case to upgrade the existing configuration management tool.

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	5	5	5	5	5	5	5	35
Second Pass Approval	Project Status	3	4	5	5	5	4	3	29
	Explanation	• Schedule – the proposed schedule is understood, however it is not feasible. The likelihood of achieving IOC and FOC within the MAA window is low. • Cost – the cost of the capability is industry tested. Refinement of the tendered offer is subject to further negotiations. • Commercial – The current Thales offer is in the process of being negotiated to an offer that is capable of acceptance. • Operations and Support – Whilst there is a good understanding of the schedule timing required to transition from ADATS to CMATS, driven in large part by the ongoing supportability of ADATS, the project has not been able to put in place a schedule that effectively mitigates this risk. Additionally, the time lag between contract signature of dependent infrastructure and network projects is decreasing the project's flexibility in making changes.							



2016-17 CASG MPR Status - - - -

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

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	RADM Tony Dalton
Branch Head	AIRCDRE Sally Pearson
Project Director	GPCAPT Dick Haines
Project Manager	Ms Georgia Miles

Project Data Summary Sheet[146]

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
Total Approved Budget (Current)	$678.6m
2016-17 Budget	**$42.4m**
Project Stage	Initial 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 will provide 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, will introduce 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 will coincidentally be provided under this Phase to replace the navigation function performed by the Target Indication Radar, at the same time replacing the obsolescent Krupp Atlas 9600.

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

At 30 June 2017 the project has an underspend of $4.9m. This is due to:

Follow on Contract (FON) - BAE Systems Australia $2.2m efficiencies and risk reduction reported and realised. (50% of this will be realised as gain share at the financial completion of the project.)

Phased Array Radar Production – CEA Technologies Pty Ltd savings against the earned value elements of the contract and minor slippage totalling $1.3m

Other contracts - inability to engage contractors and minor slippage totalling $1.4m.

Project Financial Assurance Statement

As at **30 June 2017** project SEA 1448 Phase 2B has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has **recovered** contingency in the financial year primarily **through finalising First of Class pain/gain share**

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.

adjustments at lower than expected amounts. Contingency has been applied to cover remaining pain/gain share adjustments, dockyard facilities costs and training facility costs.

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 55 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. Recent achievements include the Materiel Release (MR) of the fourth ship HMAS Warramunga in October 2015, and the fifth ship. HMAS Ballarat the fifth ship in May 2016. HMAS *Parramatta* the sixth ship **was completed in January 2017**. HMAS *Toowoomba* the seventh ship **was completed in May 2017 and** the final ship, HMAS *Stuart* **is progressing well with completion expected in September 2017**. The project remains on track to deliver Final Operating Capability by October 2017.

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 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 major risks and issues for SEA 1448 Phase 2B are:

- That indices used in the prime contract, particularly labour rates, may exceed current predictions. **This risk has now been retired;**
- An inability to resource the ASMD Project correctly (includes availability, conflicts, personnel, training and quality (Commonwealth, CEA, ANZAC IMS, Industry, Test and Trials);
- **A chance of** unplanned work being activated during an ASMD upgrade period, **predominantly through the concurrent planned maintenance activities.**
- **A chance that inadequate tracking and management of assets and supplies causes loss of stock;**
- **Budgeted Cost Model and Assets Under Construction are not correctly maintained and rolled out; and**
- **Obsolescence of Kelvin Hughes navigation radar necessitates replacement before the specified date.**

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).

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		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 17	Exchange Variation		(9.6)	
Jun 17	**Total Budget**		678.6	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – CEA Technologies (PAR Production)	(183.4)		5
	Contract Expenditure – BAE Systems Australia (Follow On Ships)	(155.2)		
	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(76.9)		
	Contract Expenditure – BAE Systems Australia (First of Class)	(59.8)		
	Contract Expenditure – CEA Technologies (P3 Contract)	(57.6)		6
	Contract Expenditure – ICWI Membership	(19.7)		
	Other Contract Payments / Internal Expenses	(47.2)		7
			(600.0)	
FY to Jun 17	Contract Expenditure – BAE Systems Australia (Follow On Ships)	(23.7)		
	Contract Expenditure – CEA Technologies (PAR Production)	(6.1)		5
	Contract Expenditure – BAE Systems Australia (First of Class)	(4.1)		
	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(1.9)		
	Other Contract Payments / Internal Expenses	(1.6)		7
			(37.5)	
Jun 17	**Total Expenditure**		(637.4)	
Jun 17	**Remaining Budget**		41.2	

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
38.7	48.8	42.4	PBS - PAES: The estimate variation of $10.1m is mainly due to slippage of payments from 2015-16 to 2016-17 and a small amount of costs which were not previously estimated. PAES - Final Plan: The ($6.4m) variance is predominantly due to the reduction in scope of the Phased Array Radar Contract with CEA Technologies $0.8m, a further reduction in forecast estimate at completion for the Follow On Contract of $3.6m, final pain share reconciliation on the FOC Contract indicated a $1.5m reduction in pain share requirement and $0.6m reduction in Common User Facility (Henderson Ship Yard) costs (other ASMD Prod Costs) due to the contracted price being less than previously estimated.
Variance $m	10.1	(6.4)	Total Variance ($m): 3.7
Variance %	26.2	(13.1)	Total Variance (%): 9.6

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(3.5)	Australian Industry	The variance to budget is due to:
			Foreign Industry	FON - BAE $2.2m Efficiencies and risk reduction reported and realised. (50% of this will be realised as gain share at the financial completion of the project.)
			Early Processes	
		(1.4)	Defence Processes	
			Foreign Government Negotiations/Payments	PAR Production – CEA savings against the earned value elements of the contract and minor slippage totalling $1.3m.
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	Other contracts - inability to engage contractors and minor slippage totalling $1.4m.
42.4	37.5	(4.9)	**Total Variance**	
		(11.7)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
BAE Systems Australia (First of Class)	Jul 05	2.1	63.9	Variable	Alliance	1, 2
SAAB Systems 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	193.3	Variable	ASDEFCON	1
BAE Systems Australia (Follow on Ships)	Jan 12	164.9	183.0	Variable	Alliance	1

Notes

1	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 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 17		
BAE Systems Australia (First of Class)	0	2	Research and Development and Ship 1 system	
SAAB Systems 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 ~~16~~17				
Equipment has been delivered into store and is being appropriately maintained until required by Phase 2B for its installation. Installation has been completed for First Of Class ship, HMAS *Perth*, HMAS *Arunta,* HMAS *ANZAC,* HMAS *Warramunga,* HMAS *Ballarat*, **HMAS *Parramatta* and HMAS *Toowoomba*.**				

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

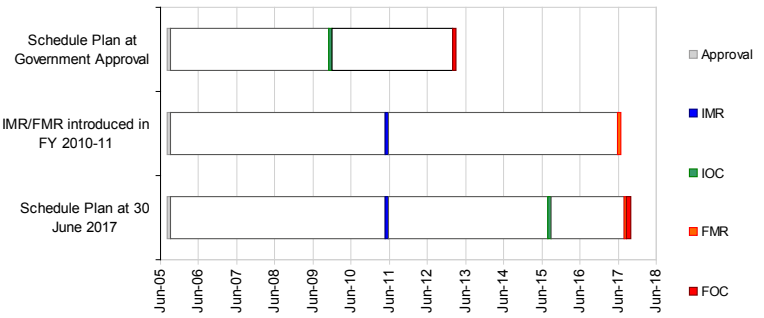
Notes	
1	Variance in both the test readiness review and acceptance of the first upgraded ASMD ship is directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program.
2	Initially the variance in the acceptance of the first upgraded ASMD ship was 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	Oct 17	3	2
Final Operational Capability (FOC)	Mar 13	Oct 17	55	3

Notes	
1	Variance was directly linked to updated Materiel Acquisition Agreement which moved IOC until after Phased Array Radar System had been proven against Supersonic Targets.
2	Variance is due to approval of ships 2-8 by Government.
3	Variance is directly linked to the change of acquisition strategy - movement from a one plus seven ship program to an eight ship program.

Schedule Status at 30 June 2017

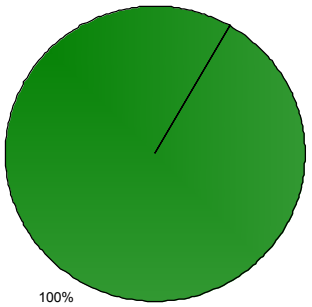


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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)	Acceptance of all ASMD upgraded ships and associated supplies, with final ship being, HMAS *Stuart*, scheduled for October 2017.	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 indices used in the prime contract, particularly labour rates, may exceed current predictions.	Contingency was applied in the previous year to cover projected escalation and outcomes have remained in line with the projections. This risk has been retired.
There is a chance of unplanned work being activated during an ASMD upgrade period such as emergent work arising from planned ASMD installation activities, other maintenance activities and unplanned work scheduled during the ASMD installation work period.	The project and ANZAC SPO engineering group are actively managing the introduction of additional work packages into the ASMD upgrade period, with priority on maintaining the approved ASMD schedule. This risk has been downgraded to medium due to the final ship commencing trials.
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
There is a chance that inadequate tracking and management of assets and supplies causes loss of stock.	Working groups and dedicated staff have been assigned to identify and manage any asset and supply losses by transferring or purchasing additional supplies as required.

5.2 Major Project Issues

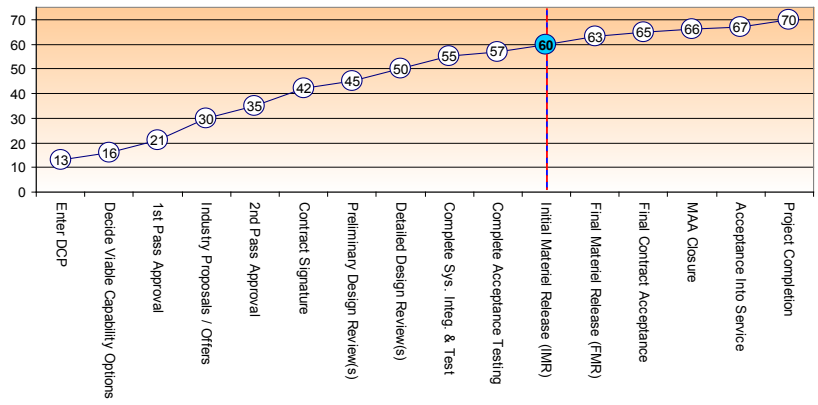
Description	Remedial Action
Inability to resource the ASMD Project correctly (includes availability, conflicts, personnel, training and quality (Commonwealth, CEA, ANZAC IMS, Industry, Test and Trials).	Planning of resource profiles against known constraints and schedules using close liaison with Navy through ANZAC Systems Program Office (SPO), and with our key industry participants.
Budgeted Cost Model (BCM) and Assets Under Construction (AUC) are not correctly maintained and rolled out.	Contingency is expected to be utilised to correct the shortage of experienced specialist staff required to manage the BCM and AUC tasks.
Obsolescence of Kelvin Hughes navigation radar necessitates replacement before specified date.	Contingency is expected to be utilised to correct the inadequate supportability period following determination of best replacement or update option.

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	8	9	9	9	8	9	60
	Explanation	• **Schedule:** Schedule is mature and there remains one further ship to upgrade. • **Requirement:** Based on the completion of OT&E, the requirements of Phase 2B are clearly understood. • **Technical Understanding:** Successful OT&E completed in August 2013.							



2015-16 MPR Status - - - -	2016-17 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

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Adam Grunsell, RAN
Branch Head	CDRE Steve Tiffen, RAN
Project Director/Manager	Mr Michael Welsh (Acting to Sep 16) Mr Ian MacKinnon (Sep 16–current)

Project Data Summary Sheet[147]

Project Number	**AIR 9000 Phase 5C**
Project Name	**ADDITIONAL MEDIUM LIFT HELICOPTERS**
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Acquisition Type	MOTS
Capability Manager	**Chief of Army**
Government 1st Pass Approval	Sep 07
Government 2nd Pass Approval	Feb 10
Total Approved Budget (Current)	**$637.8m**
2016-17 Budget	**$33.6m**
Project Stage	Final Materiel Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project **has replaced** the extant Australian Defence Force (ADF) Medium Lift Helicopter capability of CH-47D Chinook helicopters with seven new modernised CH-47F Chinook helicopters, two Transportable Flight Proficiency Simulators (TFPS) and associated supporting systems.

1.2 Current Status

Cost Performance

In-year

The $11.9m underspend is due to FMS quarterly payments being less than forecast, Ballistic Protection delayed due to prolonged Tender Evaluation activity and technical compliance review and expenditure for Workforce Supplementation was less than expected.

Project Financial Assurance Statement

As at 30 June 2017, Project AIR 9000 Phase 5C 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 to fund the **upgrade of Building C43 at Swartz Barracks, Oakey. This building will house CH-47 training. The project also applied contingency in the financial year to fund Foreign Military Sales Case number AT-B-UGB with the United States Army. This was to extend the services provided under this Case and include the procurement of Common Missile Warning System Generation 3, Improved Vibration Control System, and Improved Troop Seat.**

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.

Schedule Performance

The project accepted the first TFPS from the US Army in April 2014, with the second TFPS arriving in February 2015. On delivery, both devices were installed in temporary facilities and in January 2016, they were moved to their permanent facilities. Both devices received Synthetic Training Device Installation Operation Permits in April 2016.

All seven aircraft were delivered to Australia between April and August 2015, with the final aircraft placed on the Defence Register on 3 September 2015.

The Australian Military Type Certificate and Service Release (SR) were issued for the aircraft on 17 December 2015, with two limitations. The first limitation was a restriction on use of the rotor brake system pending the receipt of outstanding rotor brake certification documentation. This limitation was lifted by the Operational Airworthiness Authority on 1 July 2016. The second limitation relates to embarkation of the aircraft aboard amphibious landing platforms. The first of class flight trials (FOCFT) provided the basis for lifting this remaining limitation. The FOCFT report was accepted on 15 December 2016. This limitation was lifted in May 2017.

IMR was declared by Capability Acquisition and Sustainment Group (CASG) on 1 July 2015 and the IOC declaration by Chief of Army on 22 April 2016.

The combined Materiel Release 2 (MR2) OC2 submission was signed by Chief of Army with caveats on 20 July 2016 (see section 3.3 note 3).

A data pack supporting declaration of FMR was submitted to Army in April 2017 for sign off.

The CH-47D aircraft were withdrawn from service in July 2016.

Materiel Capability Delivery Performance

The CH-47F Chinook helicopter acquired is a Military-Off-The-Shelf (MOTS) procurement of a US specification CH-47F Chinook, with only minimal essential ADF unique modifications. The CH-47F Chinook has been employed operationally by the US Army for over nine years and the capability has achieved outstanding operational results. The ADF has to date taken delivery of all seven aircraft identified in this Project; and there are currently no impediments to the Project achieving the materiel capability performance requirements.

Note

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

1.3 Project Context

Background

Support to the extant ADF CH-47D Chinook fleet was heavily leveraged off the US Army and supporting US industrial base. The US Army is currently several years into a program to replace its entire CH-47D fleet with the modernised CH-47F Chinook helicopter. Beyond 2017, adequate in service logistics and training support from the US Army for the ADF CH-47D will no longer be available. Procurement of the CH-47F will ensure the ongoing viability of a Medium Lift Helicopter capability to the ADF.

The ADF CH-47D fleet was small and loss or severe damage of a single aircraft would have resulted in a significant capability loss. The growth in fleet size (to ten, including three LAND 4502 Phase 1 aircraft) will improve the robustness of the ADF Medium Lift Helicopter capability.

A MOTS procurement strategy, via the government-to-government FMS program, was selected for the CH-47F acquisition as it offered the lowest risk capability solution in terms of project cost and schedule.

Following Government Second Pass in February 2010, the Commonwealth signed a FMS case with the US Government in March 2010. The US Army has finalised its contracts with suppliers for the provision of the aircraft and all other supporting systems specified in the FMS case. Boeing is the principal Original Equipment Manufacturer (OEM) for the CH-47F Chinook.

Uniqueness

The CH-47F aircraft acquired by the Project is a MOTS US Army specification CH-47F Chinook helicopter. The only production configuration difference with the ADF aircraft is the inclusion of a rotor brake to allow for embarked amphibious operations. The rotor brake is a mature design that has been previously certified on other US Army and international variants of the Chinook.

A minimal number of ADF unique modifications will be installed on the aircraft following delivery. All of these modifications are mature designs with the majority having previously been integrated and certified on the ADF CH-47D Chinook. Integration of these ADF modifications carries very low technical risk due to the high degree of commonality between the CH-47D and CH-47F aircraft. Nonetheless, delays related to Operational Test and Evaluation efforts in support of the M134D mini-gun installation into the CH-47F have resulted in a significant amount of work in excess of what was originally anticipated. These issues delayed the declaration of the MR2 milestone which was achieved on 20 July 2016.

The CH-47F is a modern digital aircraft. The Common Avionics Architecture System and Digital Automatic Flight Control System are the two most significant upgrades included on the CH-47F Chinook over its predecessor. These systems have been certified by the US Army and Boeing and are currently in service.

The Project included delivery of two TFPSs to provide an organic ADF CH-47F simulator capability. Previous simulator training support for the CH-47D was provided by the US Army.

The Cargo Helicopter Management Unit (CHMU) is the organisation responsible for acquiring the CH-47F capability. The CHMU was also responsible for the in-service support of the CH-47D capability and is currently supporting the CH-47F model in service. Having the CHMU as the single acquisition and sustainment organisation provides synergies due to the high degree of commonality between the CH-47D and CH-47F aircraft. It also allows staff to be prioritised between sustainment and acquisition as needed.

Major Risks and Issues

The ADF CH-47D Chinook fleet completed operations in Afghanistan on Operation SLIPPER in 2013 reducing some risk involved with the challenges of fielding a replacement CH-47F Chinook fleet in parallel with an operational deployment. There were resource challenges and associated risk whilst the CH-47D and CH-47F fleets were sustained concurrently, however the CH-47D fleet has been withdrawn from service since July 2016, thus this risk has passed.

As a result of emergent issues with the planned overseas maintenance technician training solution, the development and delivery of a comprehensive domestic maintenance technician training solution is in progress within the current project scope and on schedule for delivery by early 2018. CHMU is now in contract for delivery of a suite of training devices and associated courseware for the Rotary-wing Aircraft Maintenance School, based at Swartz Barracks, Oakey.

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 CH-47F training system.

LAND 4502 Phase 1 proposed to expand the CH-47F fleet from seven to ten aircraft in the same configuration as those provided by this project. LAND 4502 Phase 1 was approved by Government on 1 March 2016. All three aircraft under this project were delivered ahead of schedule with the last aircraft arriving in Australia on 23 June 2016.

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 07	Original Approved		3.4	1
Feb 10	**Government Second Pass Approval**	634.2		
			634.2	
Jul 10	Price Indexation		46.9	2
Jun 17	Exchange Variation		(46.7)	
Jun 17	**Total Budget**		637.8	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – US Government (AT-B-UDK)	(323.2)		3
	Contract Expenditure – US Government (AT-B-BAH)	(35.7)		3
	Contract Expenditure – US Government (AT-B-UGB)	(13.7)		3
	Contract Expenditure – Boeing Defence Australia Ltd (CH-47F Avionics Training Devices)	(12.5)		3
	Other Contract Payments / Internal Expenses	(41.4)		
			(426.5)	
FY to Jun 17	Contract Expenditure – Boeing Defence Australia Ltd (CH-47F Avionics Training Devices)	(3.0)		3
				3
	Contract Expenditure – US Government (AT-B-UGB)	(0.2)		
	Other Contract Payments / Internal Expenses	(18.5)		4
			(21.7)	
Jun 17	**Total Expenditure**		(448.2)	
Jun 17	**Remaining Budget**		189.6	

Notes

1	This project's original DMO budget amount is that prior to achieving Second Pass Government Approval.
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $16.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $30.6m having been applied to the remaining life of the project.

3	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
4	Major items of expenditure include **Workforce Supplementation $3.8m, Pilot seats and aircraft modification kits $3.3m, Minor deliverables $3m, Aircraft equipment $2.4m, Combining Transmission Assembly $1.9m, Chinook Airframe (Hull) $1.2m, Training Services $1.2m, Fall Protection $0.5m, Technical Advice and Data $0.5m, Travel/Freight $0.5m, TFPS support $0.2m.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
31.3	32.0	33.6	**PBS-PAES variation is the net effect of minor activity changes which have slipped from Financial Year 2015-16 to Financial Year 2016-17. PAES-Final Plan Estimate variation from BE2017-18 namely extension to the Capability Alignment Program (CAP) FMS case and minor purchases brought forward with an offset of training device slippage.**
Variance $m	0.7	1.6	Total Variance ($m): 2.2
Variance %	2.2	4.9	Total Variance (%): 7.2

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(4.1)	Australian Industry	**Variance is due to: FMS quarterly payments less than forecast; Ballistic Protection delayed due to prolonged Tender Evaluation and technical compliance review; and expenditure for Workforce Supplementation less than expected.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
		(7.8)	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
33.6	21.7	(11.9)	**Total Variance**	
		(35.3)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $m	Type (Price Basis)	Form of Contract	Notes
US Government (AT-B-UDK)	Mar 10	513.5	354.0	Reimbursement	FMS	1, 2, 5
US Government (AT-B-UGB)	Dec 11	18.0	22.1	Reimbursement	FMS	1, 3, 5
US Government (AT-B-BAH)	Jun 13	41.6	52.9	Reimbursement	FMS	1, 4, 5
Boeing Defence Australia Ltd	May 16	16.5	16.1	Firm	ASDEFCON	1,5

Notes

1	The scope of this contract is explained further below.
2	FMS Case AT-B-UDK, Amendment 6, signed on 30 March 2016, has further reduced the overall case value due to firm pricing data for aircraft procurement post definitization of the US Army – Boeing aircraft production contract
3	FMS Case AT-B-UGB was created to allow greater management of the aircraft production retrofit activities required to ensure all aircraft are delivered at the same configuration as the final aircraft.
4	FMS Case AT-B-BAH was created through the removal of the spares package from FMS Case AT-B-UDK. The creation of this case provides Defence with greater control over the procurement of spares required for the project.
5	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 17	Scope	Notes
US Government (AT-B-UDK)	7	7	CH-47F aircraft	1
US Government (AT-B-UGB)	N/A	N/A	CH-47F aircraft production retrofit kits	
US Government (AT-B-BAH)	N/A	N/A	Spare parts package	
Boeing Defence Australia Ltd	1	1	CH-47F Avionics System Trainer (training device)	

Major equipment received and quantities to 30 Jun 17	
All seven aircraft and two Transportable Flight Proficiency Simulators, a quantity of Repairable Items and Spare Parts.	
Notes	
1	The final aircraft was delivered to Townsville in August 2015.

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	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Feb 12	N/A	Apr 12	2	2
	ADF Unique Modifications	Jul 11	N/A	Jul 12	12	3,4
Preliminary Design	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Sep 12	N/A	Feb 13	5	2
	ADF Unique Modification	May 13	N/A	Aug 15	18	3,4
Critical Design	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Mar 13	N/A	Jun 13	3	2
	ADF Unique Modifications	Apr 14	N/A	Jan 16	18	3,4

Notes	
1	CH-47F Chinook helicopter system requirements and design reviews not required as it is a MOTS aircraft.
2	Rotor brake design has been contracted to Boeing by the US Army. Rotor brake design is a mature design that has been previously certified on other US Army and international Chinook variants. Variance from previous report is associated with changes to aircraft production schedule.
3	The dates provided for ADF Unique Modifications relate to the three most significant modifications, namely the M134D Minigun, Crashworthy Pilot Seats (CWPS) and cockpit/cabin ballistic protection. These three key modifications, and a range of other minor modifications incorporated during each rebuild, **enabled** the project to achieve the materiel pre-requisites for Materiel Release 2 (MR2). All ADF unique modifications except CWPS are mature designs that have been previously certified on the ADF CH-47D Chinook. A Boeing modification has been developed and the installation kits and cockpit seat ship-sets are currently being delivered, with the first two aircraft installations completed in February and June 2016 respectively.
4	A blade fold solution was initially considered in scope for this project; however a commercially available solution does not currently exist.

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	Rotor Brake	Nov 11 – Feb 14	N/A	Jul 14 – Oct 14	8	1
	ADF Unique Modifications	Dec 15	N/A	**Sep 16**	**9**	3
Acceptance	CH-47F Chinook helicopter	Mar 14 – Nov 15	N/A	Mar 15 – Aug 15	(3)	2
	Rotor Brake	Apr 14	N/A	Jul 16	27	1
	ADF Unique Modifications	Jan 16	N/A	**Sep 16**	**8**	3

Notes	
1	Rotor brake acceptance dates **were** dependent upon Boeing and the US Government releasing a Statement of Airworthiness Qualification and Substantiation Report. This report was received in March 2016. The rotor brake was installed on the production line. There **was** a limitation preventing use of the rotor brake until it has met Australian Technical Airworthiness requirements, **was lifted** in July 2016. The variance is aligned with the initial aircraft deliveries.
2	ADF acceptance dates provided by US Army. In September 2012 the US Army advised of a change to the aircraft acceptance dates that delayed early deliveries but brought forward later deliveries. US Army acceptance activities with Boeing will occur in the month prior to acceptance.
3	The ADF Unique Modifications **achieved** Design Acceptance in **September** 2016.

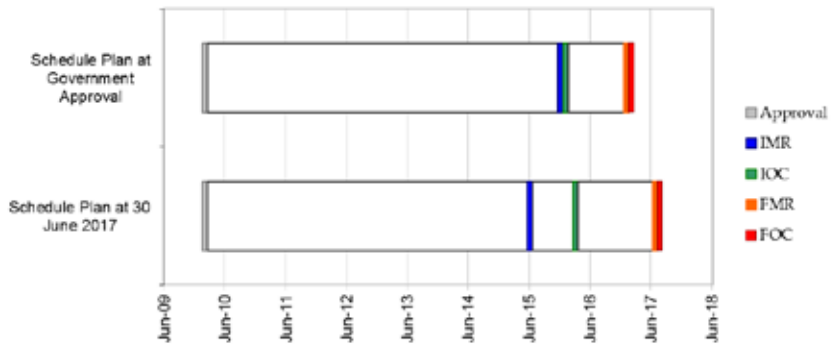
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jan 16	Jul 15	(6)	1

Initial Operational Capability (IOC)	Jan 16	Apr 16	3	2
Materiel Release 2 (MR2)	Feb 16	Jul 16	5	3
Final Materiel Release (FMR)	Jan 17	**Jul 17**	**6**	**4**
Final Operational Capability (FOC)	Jan 17	**Jul 17**	**6**	**4**

Notes	
1	Variance against IMR is due to redefining the IMR milestone in the latest Materiel Acquisition Agreement with Army V2.3 to better meet project requirements (i.e. aircraft ready to fly in support of New Equipment Training (NET)). Completion of the requirements in the old Materiel Acquisition Agreement will be completed in the same timeframe as originally planned. All of the elements of the IMR were in place by 30 June 2015 and IMR was declared by CASG on 1 July 2015. Endorsement of IMR by the Capability Manager was achieved on 31 July 2015.
2	IOC is the declaration that one CH-47F troop is available for land deployment in a low threat environment. Due to concurrent requirements in late 2015 to support a short notice CH-47D First of Class Flight Trial and completion of CH-47F NET, IOC was declared on 22 April 2016.
3	MR2 provides an interim milestone to support the delivery to Army of an incremental CH-47F materiel subset (in addition to IMR) that has completed acceptance testing, has achieved appropriate certification and is suitable for the conduct of operational testing. The delay is the result of: unexpected adverse flight test results of the design which required minor redesign; and difficulty in scheduling live fire range activity for stores clearance testing (which is dependent upon resources outside of CASG control). MR2 **was** declared by CASG and formally approved by Chief of Army **on 20** July 2016 **with the following caveats - Number of support personnel; Communications Systems training (resolved Feb 2017); Pilot seat and Minigun certification (M134D) (resolved Apr 17); Battle Damage repair course availability.**
4	**A delay in achieving FMR and FOC is due to a delay in delivery of ASE training and certification of CWPS.**

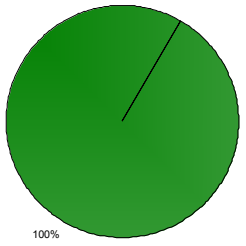
Schedule Status at 30 June 2017



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 expressed in the Materiel Acquisition Agreement, 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)	Delivery to Army of an initial CH-47F materiel subset that has completed acceptance testing, has achieved appropriate certification in accordance with ADF Regulations and is suitable for the conduct of both: CH-47D to CH-47F transition training, and initial operational testing. Key completion criteria are: 3 x CH-47F aircraft at US Army production configuration in-service, 2 x TFPS configured to support transition training in-service, and a CH-47F Special Flight Permit issued.	Achieved.
Final Materiel Release (FMR)	Delivery to Army of the final CH-47F materiel subset (additional to MR2) that has completed acceptance testing, has achieved appropriate certification in accordance with ADF Regulations and is suitable for the conduct of operational testing. At FMR the entire CH-47F materiel system will have been delivered and upgraded or modified to the final Australian configuration where necessary. All supplies will be delivered as per the Materiel Acquisition Agreement. Key completion criteria are: 7 x CH-47F at final approved configuration in-service, CH-47F final approved configuration training complete, and support arrangements in place to satisfy the Materiel Sustainment Agreement.	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 ongoing support of the ADF CH-47F will be affected by timely transfer of technology and information leading to an impact on supportability/capability.	Previous risk treatments are complete. The establishment of a US Army Aircraft Engineering Directorate employed liaison engineer has increased the efficiency and level of technical exchange requests. **As technical support contracts with the major OEMs are in place this risk was retired.**
There is a chance that the project workforce and resourcing will be inadequate leading to an impact on schedule, cost and reputation/compliance.	Development of a fully resourced schedule to identify true workforce requirements is ongoing. The Project will continue to push for critical Australian Public Service recruitments, the filling of military vacancies and established a contracted workforce as required to execute the Project. The sourcing and employment of contracted support has been an effective method of risk mitigation in the past year. **On submission of the FMR declaration pack this risk was retired.**
The delivery of Aircraft Survivability Equipment support systems (In-Country Reprogramming (ICR)) may be affected by delivery delays in leading to an impact on the scheduled FMR.	US Army is in contract for the antenna redesign for the APR 39 ICR and **was delivered November 2016. The final component of the APR 39 ICR being the Mission Data Set Generator software and its associated training was delivered in March 2017.** The Common Missile Warning System ICR is now the subject of an upgrade to maintain alignment with the US Army configuration and is planned to be transferred to Project Land 4502 Phase 1 as an FMR deliverable under that MAA. **On submission of the FMR declaration pack this risk was transferred to sustainment.**
The provision of crashworthy passenger seating will be affected by delays in both the Main Cabin Upgrade (MCU) and US Army Crash Resistant Troop Seat (CRTS) programs leading to an impact on cost or schedule.	With no product on the market, a crashworthy passenger seating solution was commissioned for the CH-47D model but failed due to manufacturing delays. The plan was to have a mature product developed and tested in the CH-47D before it was withdrawn from service. This seating would have been modified to fit the CH-47F model under this project **(C-CASS)** but the remaining development has also transferred to the project. The continuing development of the crashworthy passenger seating will leverage off the design work already completed and funded from AIR9000 Phase 5C. **The US Army CRTS, renamed Improved Troop Seats (ITS), is now under development. CHUSPO intent is to procure ten ship sets with proposed delivery Financial Year 2018-19. ITS is being procured as a risk mitigator against further**

	slippage in the C-CASS project. This risk is rated medium **post-mitigation** due to the **ongoing** development of both seating solutions.
The delivery of an acceptable sustainment training plan may be affected by availability of required training devices leading to an impact on schedule and capability.	Direction to acquire training aids in support of ongoing CH-47F Trade training was confirmed to be within scope of the project in June 2015. Cargo Helicopter Management Unit (CHMU) can now progress activities to acquire necessary equipment through US Army and/or Direct Commercial Sales (DCS). **Final delivery of training devices is expected in 2018.**
The currency of ADF's CH-47F aircraft publications may be affected by new restrictions on US Department of Defense (DoD) websites leading to an impact on capability and compliance.	The 'pull' system of US Army publication support has always been a concern; this was escalated when US DoD websites changed their restrictions denying ADF members in Australia access to see when publication updates are released in order to request the update. Limited support from US Army and ADF Supply Liaison Officer (SLO) are not sufficient mitigation. A US Army Aviation and Missile Command (AMCOM) Liaison Officer was being investigated as a permanent solution in Australia but is no longer being pursued due to lack of value for money. **New US procedures have been implemented.** CHMU will continue to ensure regular technical assistance visits are conducted. Risk **has been retired.**
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

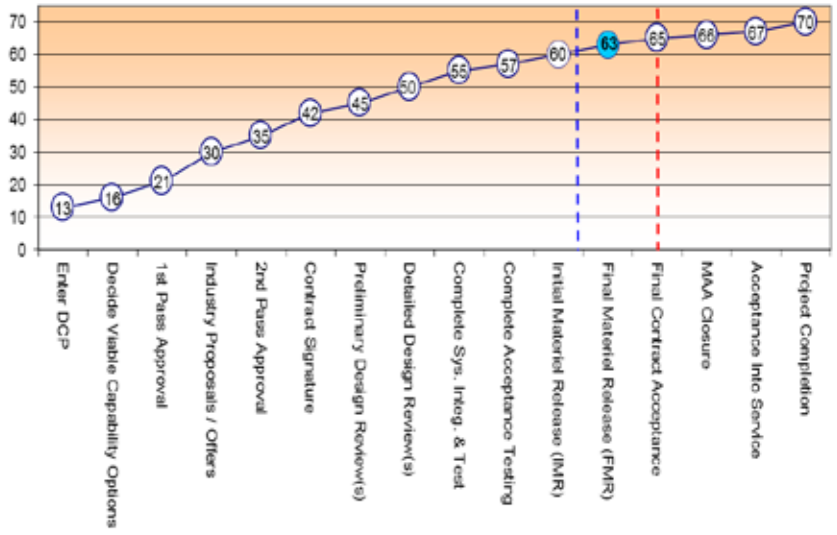
5.2 Major Project Issues

Description	Remedial Action
Inadequate performance in project management of the FMS case by the US Army is currently impacting on cost and schedule for the CH-47F Mission and Support Systems and may also impact on capability and reputation if this issue is not appropriately managed.	Continued performance monitoring of US Army project management efforts by the in country ADF Engineering Liaison Officer. Increased overseas travel to enable greater level of direct interaction between ADF and US Army. Maintain Resident Project Team, co-located with US Army implementing organisation to provide further oversight. Increased ADF oversight through monthly telecon meeting between Directors, quarterly Interim Program Reviews and establishment of specialist Integrated Product Teams has been effective. US Army team have temporary measures in place to mitigate. This issue has been further treated by the location of a Project Liaison Officer for Project Land 4502 Phase 1 in the US in addition to the Engineering Liaison Officer. **On submission of the FMR declaration pack this issue was closed.**
Delays to the commencement of the Parliamentary Standing Committee on Public Works review and approval process for the construction of maintenance facilities at 5 Aviation Regiment Townsville has resulted in an overlap between CH-47F Introduction into Service and the facilities construction phase. This issue will impact on the efficient and effective Introduction into Service of the CH-47F and may impact the schedule to IOC.	The Parliamentary Standing Committee on Public Works sat on 22 May 2014 and construction commenced in December 2014 based on a Parliamentary Expediency Motion in July 2014. Significant work between DMO, Army and Defence Support and Reform Group has developed robust decanting plans to minimise effect of construction on the operational unit and project transition activities. DMO upgrading some existing unit facilities as temporary work areas during the transition and until the facilities program is complete. The project is no longer a stakeholder in the facilities upgrade which is being managed by E&IG and Headquarters Forces Command. **This issue has been retired with IOC achieved in August 2016.**
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	9	9	9	10	10	9	9	65
	Explanation	• **Schedule:** Some materiel and support systems remain to be delivered, however the project FMR was achieved in July 2017. • **Technical Understanding:** Completion of New Equipment Training (NET) has ensured all personnel are qualified on the CH-47F to maintain and operate the platform. In addition the increased technical understanding is reflected in the high availability and hours flown on the aircraft since completion of NET. • **Technical Difficulty:** Conduct of maturing of systems coupled with recent CH-47F training undertaken by project staff with OEM have increased confidence in the management of technical issues that arise. • **Commercial:** Nearly all materiel required to be delivered via the Foreign Military Sales case has been shipped. US Government and Boeing have been transparent regarding pricing and delivery schedules throughout.						



2015-16 MPR Status - - - -	2016-17 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst the FMS program affords a number of advantages, it should be recognised that the transfer of a significant majority of ADF Project Management functions to the US Government implementing agency 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 the level of Commonwealth contract management involvement and oversight is very low in comparison to that mandated for other forms of procurement such as Direct Commercial Sale contracts. The early establishment of a robust project contract management regime between the project office and US Government implementing agency is essential to ensure an adequate level of contract management oversight.	Contract Management
A reasonable presence of project staff in the US is required for large or technically complex FMS procurements to enable the Commonwealth adequate insight, influence and progress reporting of the US Army and major OEM activities. In-country presence is required prior to Government second pass approval, particularly during FMS case development and negotiation.	Resourcing
Project Government approval schedules are independent to, and can be out of sync with military posting cycles. This can create significant extended vacancies within the Project workforce following Government Second Pass approval, including key positions such as Project Director and Project Manager.	Resourcing
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.	Resourcing
Where replacement capabilities are sought, significant synergetic benefits can be achieved through combining or co-locating the acquisition project team with the extant in-service support organisation.	Resourcing
Recognition of prior certification of MOTS equipment by other airworthiness and technical regulatory authorities should be maximised where possible in order to minimise technical and schedule risk. Early ADF regulator involvement in the formal recognition process is considered essential.	Off-the-shelf Equipment
Supporting science and technology outcome requirements will continue to evolve throughout the Project. These requirements need to be reviewed and updated regularly to ensure they remain relevant in the dynamic project environment.	Requirements Management
The application of US Government contingency is not specifically disclosed to the Commonwealth in a Letter of Offer and Acceptance, therefore project cost estimates provided to Government will typically also include Commonwealth-estimated contingency on each of the major items of supply, on top of US Government contingency. The overall result is that the Commonwealth has excess contingency to what was reasonably required to fulfil the project. For MOTS procurements via FMS, the Commonwealth internal contingency provision should be decreased in recognition that the US Army estimates already include a contingency provision.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	MAJGEN Andrew Mathewson
Branch Head	BRIG Anthony McWatters **(to Apr 17)** **BRIG Jeremy King (Apr 17 to current)**
Project Director	COL Jeremy King **(to Jan 17)** **COL James Allen (Jan 17 to current)**
Project Manager	LTCOL David Lynch **(to Jan 17)** **LTCOL Timothy Baker (Jan 17 to current)**

Project Data Summary Sheet[148]

Project Number	**JP 9000 Phase 7**[149]
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
Total Approved Budget (Current)	$474.2m
2016-17 Budget	$108.6m
Project Stage	Detailed Design Review
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

The **MRS Project report identifies $87.5m of expenditure against a cash budget of $108.6m to 30 June 2017. The underspend of $21.2m is primarily due to invoices paid in the previous FY but budgeted for cash basis in the current FY. This variance was primarily driven by the change from Accrual to Cash Accounting basis from 1st July 2016.**

Project Financial Assurance Statement

As at 30 June 2017, 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 Stop Payment initiated when Systems Requirement Review did not occur as contracted **was removed in January 2016 on successfully exiting the review. Three** further Stop Payment Milestones were not achieved. In each case, due to BDA's improving performance, Defence reserved its rights and did not invoke Stop Payment. **By 30 April 2017 two of these milestones had been completed and the third, Support System Detailed Design Review was completed in June 2017.**

Following schedule delays throughout 2015, a revised Contract Master Schedule was delivered to the Commonwealth in late April 2016 which reaffirmed BDA's commitment to deliver the capability on time. **The revised schedule has continued to challenge all parties throughout the year.**

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.

149 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.

Two of three full motion Flight Simulators have installed and are completing testing prior to acceptance.

Remaining synthetic training devices with the exception of the Aircraft Replica Trainer were delivered, installed and are completing testing prior to acceptance.

All synthetic devices installed remain the property of the Contractor during system set to work and testing. The devices will be offered for acceptance at System Acceptance Audit in late 2017.

Materiel Capability Delivery Performance

Since March 2016, 11 helicopters were delivered to Nowra NSW bringing deliveries to 14 of 15 helicopters. Flying operations in support of training event development commenced in September 2016.

Note

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

1.3 Project Context

Background

JP 9000 Phase 7 is intended to provide a rotary wing training capability for Navy and Army, to meet the future rotary training needs of the Australian Defence Force (ADF). The Project will deliver a system that encompasses live, synthetic and classroom aviation instruction to overcome the broadening gap between current rotary training systems and the advanced operational helicopters in the current and planned future ADF inventories.

The Project achieved Government First Pass approval in February 2007 and Second Pass approval in August 2014. Both Acquisition and Support Contracts were signed on 14 November 2014.

The Acquisition contract 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 require unplanned modification of Simulator software resulting in schedule delay. Pilot tuning activities appear to have addressed this risk, which will be assessed in quarter four 2018.

The project is managing one significant issue, schedule compression prior to commencement of the trial course (Pilot) in January 18, 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

AIR 9000 Phase 2/4/6 Multi-Role Helicopter

AIR 9000 Phase 5C Additional Medium Lift Helicopters

AIR 87 Phase 2 Armed Reconnaissance Helicopter

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

J 0028 HATS Facilities Project providing training, accommodation and maintenance facilities.

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 Approved		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		
			470.2	
Jul 10	Price Indexation		2.4	3
Jun 17	Exchange Variation		(12.0)	
Jun 17	**Total Budget**		474.2	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Boeing Defence Australia (BDA) – Acquisition Contract	(94.5)		4
	Contract Expenditure – BDA – Support Contract Phase In	(3.6)		
	Contract Expenditure – Jacobs Australia	(3.3)		4
	Other Contract Payments/Internal Expenses	(11.6)		4,
			(113.1)	
FY to Jun17	Contract Expenditure – BDA – Acquisition Contract	(74.7)		
	Contract Expenditure – BDA – Support Contract Phase In	(9.7)		
	Contract Expenditure – Jacobs Australia	(1.7)		
	Other Contract Payments/Internal Expenses	(1.3)		5
			(87.4m)	
Jun 17	**Total Expenditure**		(200.5)	
Jun 17	**Remaining Budget**		273.7	

Notes	
1	The project's original budget amount prior to achieving Second Pass Government approval.
2	Transfer of budget to Estate and Infrastructure Group (formally known as Defence Support and Reform 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 ($6.0m), Salaries ($2.9m), Legal ($1.5m), Travel and Training ($1.2m).
5	Other expenditure comprises: Contractor Support ($0.4m), and Travel and Training ($0.2m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
193.2	122.5	108.6	PBS – PAES: Variation is due to Industry delays early in the project and consequent slippage of milestones. PAES – Final Plan: Variation of ($13.9m) is due to a reduction in indexation calculation methodology ($8.0m), reprogramming of Boeing deliverables (3.0m), currency adjustments ($1.2m), reduction in Jacobs Integrated Service Contract due to schedule realignment ($1.2m) and other minor reductions (0.5m).
Variance $m	(70.8)	(13.9)	Total Variance ($m): (84.6)
Variance %	(36.6)	(11.3)	Total Variance (%): (43.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Year To Date variance of is primarily due to invoices paid in the previous FY but budgeted for in the current FY. This variance was driven by the change from Accrual to Cash Accounting basis from 1st July 2016.
			Foreign Industry	
			Early Processes	
		(21.2)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
108.6	87.5	(21.2)	Total Variance	
		(19.5)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
BDA – Acquisition	Nov 14	311.6	281.5	Firm	ASDEFCON	1
BDA – Support Phase In	Nov 14	68.6	61.0	Firm	ASDEFCON	1
Jacobs Australia ISC	Dec 14	10.2	7.6	Firm	ASDEFCON	1

Notes

1 Contract value as at 30 Jun 17 is based on actual expenditure to 30 Jun 17 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
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 17

14 EC 135 Helicopters

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 Design 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	Nov 17	(1)	1
Acceptance	First EC135T2+ helicopter	Mar 16	N/A	May 16	2	
	Final EC135T2+ helicopter	Feb 17	N/A	Aug 17	6	2
	Final Acceptance	Mar 19	N/A	Feb 19	(1)	

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.

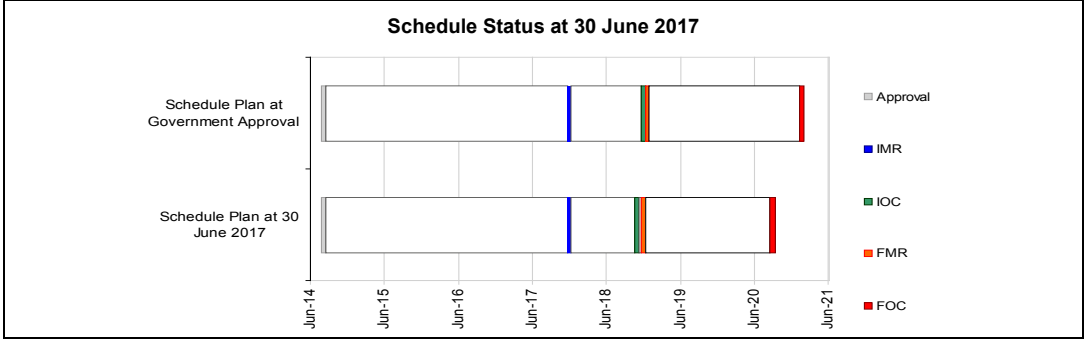
2 Aircraft N52-007 retained by Airbus Helicopters in Germany as prototype for development of an air-conditioning retrofit Engineering Change. Remaining helicopters will be modified in Australia by BDA at no additional cost to the Commonwealth.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 17	Dec 17	0	
Initial Operational Capability (IOC)	Dec 18	Nov 18	(1)	
Final Materiel Release (FMR)	Dec 18	Dec 18	0	
Final Operational Capability (FOC)	Dec 20	Sep 20	(3)	

Notes

N/A

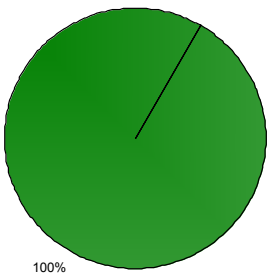


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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. • **Forecast to be achieved in December 2017.**	Not yet 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 December 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
BDA failure to meet contract milestones as a result of MATV schedule slippage. MATV is being provided as Government Furnished Equipment. If this vessel is not available at the scheduled time, the contractor will not be able to meet subsequent milestone deliveries.	1. Early and continuing engagement with MATV Project. 2. Early and continuing engagement with Aviation Capability Implementation Team (AvnCIT). 3. Advise BDA at earliest opportunity of MATV First of Class Flight Trial (FOCFT) dates and work in a collegiate manner to mitigate slip in timings. 4. Set behaviours around ongoing Support contract rather than transfer any potential slip in Acquisition contract. **This risk has been retired through re-scheduling project test and evaluation activities to late 2017.**
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
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.**

5.2 Major Project Issues

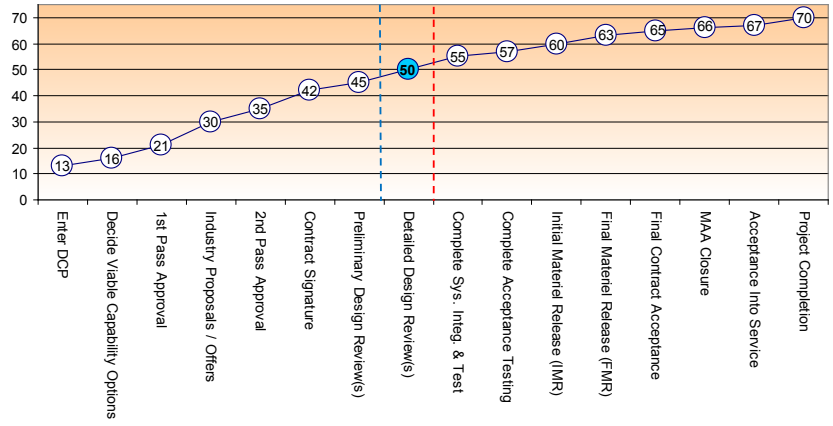
Description	Remedial Action
Availability of MATV for EC135 FOCFT in accordance with the HATS schedule. MATV is being provided as Government Furnished Equipment. If this vessel is not available at the scheduled time, Defence will not be able to conduct contractor supported FOCFT.	1. Early and continuing engagement with MATV Project (PMSG). 2. Early and continuing engagement with AvnCIT. 3. Investigation into graduated piloting course validation that enables FOCFT operations to be conducted at latest possible date. **This risk has been retired through re-scheduling project test and evaluation activities to late 2017.**
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.	**1. Rationalising verification and validation processes to reduce duplication of testing across delivery and integration activities.** **2. Applying a risk-based focus to training effect verification prior to the Trial Course validation activities in 2018.** **3. Reconciling acquisition activities with the introduction of the Defence Aviation Safety Regulations.** **4. Critically reviewing project execution processes to align with and leverage the Contract position of BDA as total capability deliverer.**

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	8	7	8	8	7	7	52
	Explanation	• **Cost:** The project is 32 months into a 52 month fixed price acquisition contract. The project has progressed to a stage where the project cost can be forecast with confidence. Majority of risks have been retired in project elements particularly sensitive to cost increases. • Technical Difficulty: Sole Developmental – Major mission system, Aircraft Replica Trainer, has completed Critical Design Review and is in course of manufacture. All other mission systems are commercial / military off the shelf systems.							



2015-16 MPR Status - - - - 2016-17 MPR Status - - - -

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 Management

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.	

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	MAJGEN Andrew Mathewson
Branch Head	CDRE Scott Lockey
Project Director	Mr Stuart Harwood
Project Manager	CMDR Darren Murphy

Project Data Summary Sheet[150]

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
Total Approved Budget (Current)	$**463.4**m
2016-17 Budget	$**28.0**m
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 is delivering 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 is also establishing the mature support system for the new generation Combat and Tactical Data Radios.

1.2 Current Status

Cost Performance

In-year

The project spent $**43.6**m against a budget of $**28.0**m **with the overspend of $15.5m due to the need to support an additional Risk Reduction Activity for the Tactical Communications Network $24.9m. This was offset by underspends due to lower than expected costs for Tactical Data radios and delay in long lead time delivery of communications ancillaries.**

Project Financial Assurance Statement

As at 30 June 2017, 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 6 dismounted communications nodes was achieved in December 2016. The major focus for schedule performance is to achieve FMR by quarter three 2017 and then commence project closure activities.**

150 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 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.

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 is reflected in the capability rollout progressing on schedule while the acceptance process for IMR was delayed. 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 is delivering 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. Phase 3 particularly supports Command and Control, Communications and Battlespace awareness across all Land operations. Only Phase 3 Work Package A has achieved Second Pass Approval.

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		436.4	
Jun 17	Exchange Variation		26.9	
Jun 17	Total Budget		463.3	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Harris Corp – Acquisition	(240.1)		
	Contract Expenditure – Harris Corp – Support	(21.0)		
	Contract Expenditure – Harris Corp – Follow on	(19.2)		
	Contract Expenditure – Harris Corp – Mature Support	(7.0		
	Other Contract Payments / Internal Expenses	(36.6)		1 & 2
			(323.9)	
FY to Jun 17				
	Other Contract Payments / Internal Expenses	(43.6)		3 & 4
			(43.6)	
Jun 17	**Total Expenditure**		(367.4)	
Jun 17	**Remaining Budget**		95.9	

Notes	
1	Other expenditure **included**: Attrition Spares, travel, introduction into service training expenses, contractor support and JP 2072 Prime Systems Integrator capability studies. **Key Loader Cryptographic devices (5.1), Test Sets (4.2), Enhanced Position Location Reporting System (EPLRS) Radios spares (2.9), Engineering Studies (1.7), training racks (2.7), Harris Corp Standing offer (0.1), freight and minor procurements.**
2	**Other expenditure comprises: $5.1m for Key Loader Cryptographic devices was incorrectly classified against "Harris Standing Offer" in the 2015-16 PDSS.**
3	Other expenditure comprises: **Risk reduction Activity (See also note 4) (24.9),** Enhanced Position Location Reporting System (EPLRS) Radios **spares (7.0), Ancillaries & minor equipment purchase (9.4)**, Contractor support (**2.2**), and **travel (0.2)**.
4	**Within the engineering scope of Phase 2A, the Risk Reduction Activity took place to better inform JP2072 Phase 3 and LAND 200 activities.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
9.4	**32.1**	**28.0**	PBS – PAES: **Variation relates to acceleration in delivery of key components for this project, acquisition of additional radios, and additional studies to review communication requirements.** PAES – Final Plan: **Variation relates to delay in acquisition of communications ancillaries whilst nodal design was completed.**
Variance $m	**22.7**	**(4.0)**	Total Variance ($m): **18.7**
Variance %	**243.5**	**(12.6)**	Total Variance (%): **200.3**

2.2 B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(1.0)	Australian Industry	**The overspend of $15.5m is attributed to the need to support an additional Risk Reduction Activity for the Tactical Communications Network. This was offset by underspends due to lower than expected costs for Tactical Data radio spares and the delay in long lead time delivery of communication ancillaries.**
			Foreign Industry	
			Early Processes	
		16.5	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
28.0	**43.6**	**15.5**	**Total Variance**	
		55.4	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Harris Corporation (Acquisition)	Jan 12	226.3	240.1	Firm	ASDEFCON	1, 2
Harris Corporation (Support)	Mar 12	14.6	21.0	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 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
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 17		
Harris Corporation	11,638	11,638	Combat Net Radios, ancillaries and interim support.	1

Major equipment received and quantities to 30 Jun 17

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

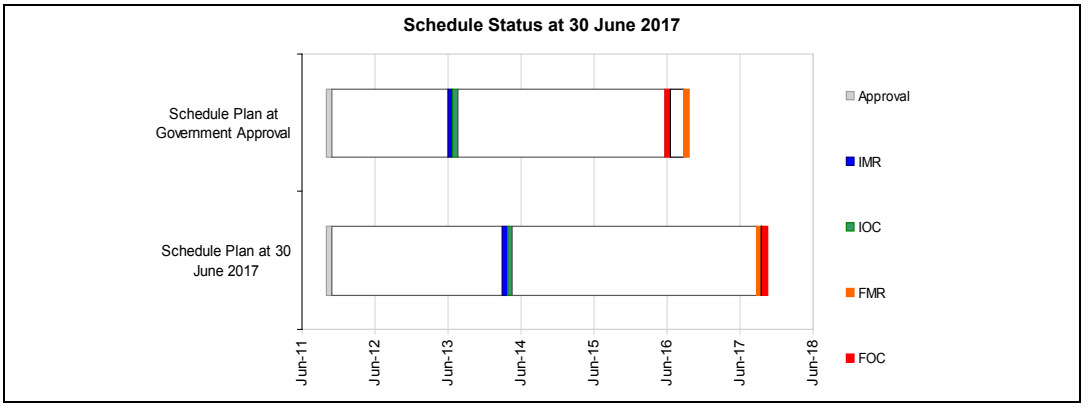
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1. Both Harris and Raytheon equipment come complete with full test and evaluation data based upon extensive testing within the Department of Defense (US) and has been given Technical Certification via Capability, Acquisition 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	Oct 17	13	2
Final Operational Capability (FOC)	Apr – Jun 16	Nov 17	17	2

Notes

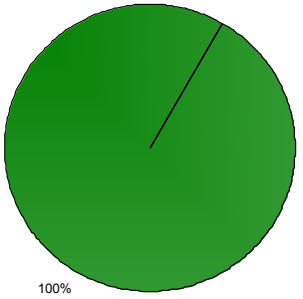
1	Equipment was delivered on schedule to IMR units in March 2013, however Capability Manager declaration of IMR and IOC was delayed by extended user acceptance of supporting documentation.
2	The forecast dates are under review and will be clarified following consultation with the Capability Manager. The delay is attributed to rescheduling the Project Management Stakeholder Group meeting to determine the revised forecast dates. The magnitude of any further delays are yet to be determined



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 October 2017.**	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/are being engaged (5 to date) and liaising with other projects for potential access to Integrated Support Contracts. Early transition of activities to sustainment being pursued as far as possible (eg involvement in establishing support contracts). Responsibilities shared to promote cross skilling and reduce reliance on key persons.
There is a chance that some Nodes need re-configuration to address fitness for purpose and safety considerations as part of Validation and Verification processes.	Engagement with end users to determine intended/actual use and any deficiencies. Army and RAAF user requirements validation workshops were conducted with essential and desirable change requests documented for either: rectification of the nodes, or submission of enhancements to change approval process. **As a result of the System Integration Assessment Report by Diggerworks this risk has been realised as an issue and has now been reported in Section 5.2.**
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

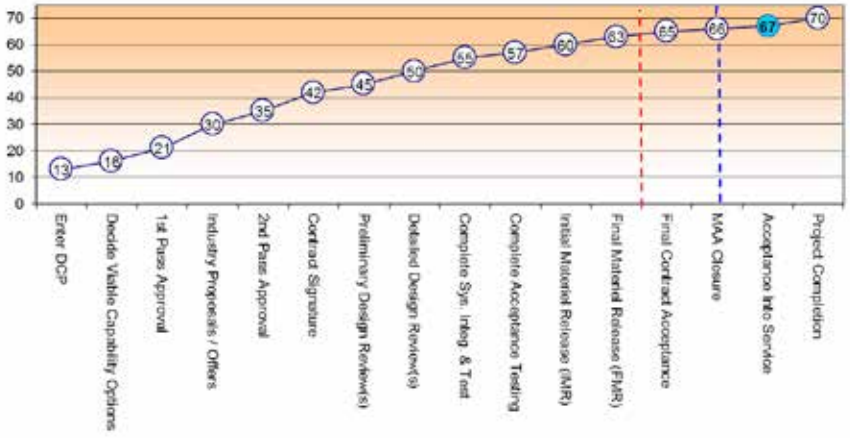
Description	Remedial Action
The rollout of equipment as Nodes (that were identified under LAND 200 pre-IOC) have been affected by the absence of formal design acceptance prior to Phase 2A equipment selection and rollout. This was reflected in the delayed declarations of IMR/IOC and risks to the Technical Certification schedule.	Some ancillaries were withheld from the planned IMR rollout to address issues, however there was no impact on the fundamental function of the capability. Preliminary Design Acceptance was delivered to ensure the safe use of equipment while the user workshops and Nodal Technical Certification process progressed to see the configurations completed. Note that all relevant equipment is already in service as components of other capabilities. **This issue has been resolved by achieving Full Design Acceptance in December 2016.**
Some nodes need reconfiguration to address fitness for purpose and safety considerations as part of validation and verification processes.	**The project will consult 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. 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							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Acceptance Into Service	Project Status	8	9	10	10	9	9	9	64
	Explanation	• Schedule: **FMR and FOC dates are under review and will be clarified following consultation with the Capability Manager.** • **Technical Difficulty: As a result of user verification activities, some reconfiguration to address fitness for purpose and weight considerations is required.**							



2015-16 MPR Status - - - - 2016-17 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 2016-17

Position	Name
Division Head	RADM Tony Dalton
Branch Head	Ms Myra Sefton
Program Director	Mr Bob Hutchinson
Project Manager	Mr Jason Cooke

Project Data Summary Sheet[151]

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
Total Approved Budget (Current)	**$450.4m**
2016–17 Budget	**$2.5m**
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 underspend of **$0.7m** is **due to differences between estimates and actual costs for work by Australian Industry**.

Project Financial Assurance Statement

As at 30 June 2017, 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 boat 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 boat availability. The RCS schedule has also been impacted by emergent work during each submarine docking. The final boat installation is scheduled for completion 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

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

151 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.

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* will be completed by the RCS Project in conjunction with the FCD program. The project schedule is dependent on the boat FCD program; consequently the completion date may vary. The development and integration of this baseline is being managed by Sustainment. Note: This baseline adopts the new TI naming convention beyond CS06.

The remaining project activity includes installation of RCS on HMAS *Collins*. 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 being provided under a combination of contracts. The main Australian contractors include ASC Pty Ltd, Raytheon Australia, Thales Australia and Sonartech Atlas Pty Ltd. Installation is being undertaken in conjunction with SEA 1429 Phase 2 Heavyweight Torpedo at locations in South Australia and Western Australia. Installation in all submarines is 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 small project team is disproportionately affected by turnover of key personnel, leading to an impact on cost and schedule. **Treatment activities are in place so this risk has been downgraded to a medium risk.**

The cost of implementing the RCS modifications on HMAS *Collins* may rise over those predicted as a new contract will need to be negotiated to cover the remaining work. Sufficient Project budget exists to cover a reasonable price increase**, so the risk has been downgraded to a medium risk**.

FMR could be delayed as the current MAA specifies deliverables that are outside of the Project's control. **The** MAA **has been**

updated so this risk has been closed.

The Coles Review recommended changes to the submarine docking program that resulted in HMAS *Collins*' implementation completion date slipping from 2016 to 2018, with a corresponding impact on the FMR and Final Operational Capability (FOC) dates. **The new dates have now been agreed by Government and a new project schedule baseline has been set to incorporate these changes, closing this issue.**

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 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.
- **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		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 17	Exchange Variation		(59.6)	
Jun 17	**Total Budget**		450.4	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Raytheon Australia	(101.7)		
	Contract Expenditure – US Government (FMS)	(79.3)		4
	Contract Expenditure – US Government (ACP)	(59.1)		5
	Contract Expenditure – Thales Australia	(26.9)		
	Contract Expenditure – Sonartech Atlas Pty Ltd	(26.8)		
	Other Contract Payments/Internal Expenses	(141.5)		6
			(435.3)	
FY to Jun 17				
	Other Contract Payments/Internal Expenses	(1.8)		7
			(1.8)	
Jun 17	Total Expenditure		(437.1)	
Jun 17	**Remaining Budget**		13.3	

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 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.
5	The ACP is the main vehicle for supplying equipment and services for the Combat and Weapon Control hardware and software development.
6	Other expenditure of **$141.5m** includes an amount of **$51.8m** 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 $46.0m of expenditure comprises operating expenditure, consultants, and contingency used in 2009-10.
7	The amount of **$1.8m** comprises of **$1.3m** to ASC Pty Ltd **for platform installation 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
2.7	2.5	2.5	**PBS to PAES: The variance reflects increased cost estimate accuracy for work conducted by ASC Pty Ltd on HMAS *Collins*.** **PAES to Final Plan: Nil**
Variance $m	(0.3)	0.0	Total Variance ($m): (0.3)
Variance %	(9.3)	0.0	Total Variance (%): (9.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.7)	Australian Industry	The **underspend** of **$0.7m** is due to **differences between estimates and actual costs for work by Australian Industry.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
2.5	1.8	(0.7)	**Total Variance**	
		(27.5)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $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	101.7	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 2017 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 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
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 17

Six RCS Ship Sets delivered. 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

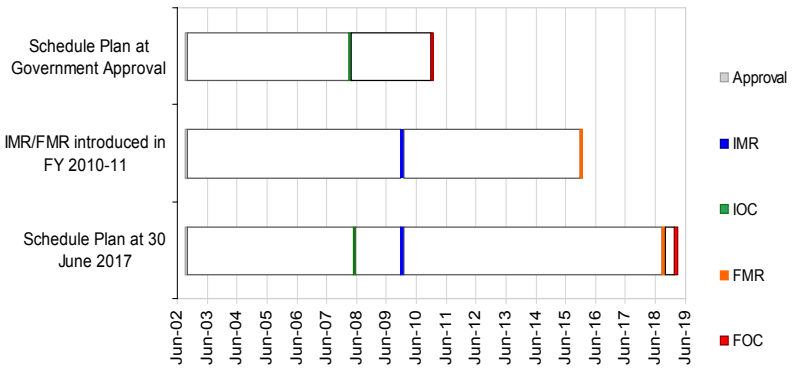
Notes	
1	Combat System CS05 baseline Harbour and Sea Acceptance Trial tests were conducted in two stages to account for weather, submarine defects and support vessel defects. In general, the project test and evaluation program was carried out in conjunction with other post docking activities and the 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 will perform 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.

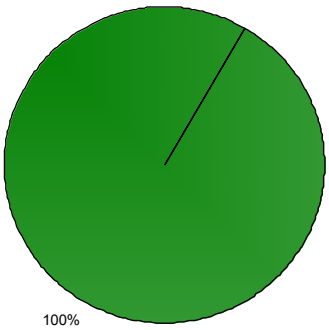
Schedule Status at 30 June 2017



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* and *Sheean*. The CS06 baseline installed in HMAS *Rankin* 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
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: • Use of contractors where appropriate; • Use of Reserve personnel where skills are suitable; and • Optimising use of matrix support staff. • **The effectiveness of the risk treatment strategy allowed this risk to be downgraded to Medium.**
There is a distinct risk that the price of implementing RCS modifications on HMAS *Collins* may rise over those predicted.	• Sufficient project budget exists to cover a reasonable price increase. **This risk has been downgraded to medium based on revised cost estimates for future work.**
There is a chance that FMR could be delayed, leading to an impact on cost and schedule.	**The** MAA **has been updated** to remove deliverables outside of the Project's control **so this risk has been closed.**
Emergent Risks (risk not previously identified but has emerged during 2016–17)	
Description	Remedial Action
N/A	• N/A

5.2 Major Project Issues

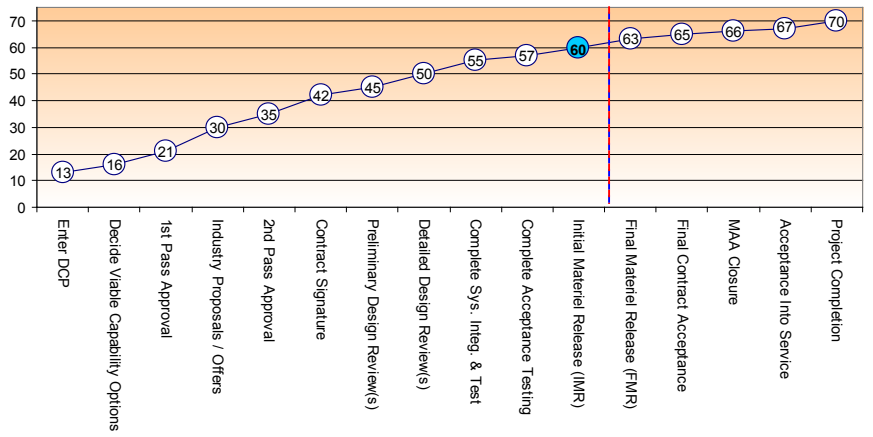
Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the RCS installation schedule.	The Government has agreed to the amended implementation dates resulting from previous docking program changes. A MAA amendment **has been signed to reset the schedule, so this issue is closed**.

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

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	9	9	9	8	9	62
	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 boats since 2010. Transitioning of the final baseline on HMAS *Collins* is expected in 2018.							



2015–16 MPR Status - - - - | 2016–17 MPR Status - - - -

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 2016–17

Position	Name
Division Head	Mr Stephen Johnson
Branch Head	Mr David Cochrane
Project Director	CMDR Ian Jimmieson (Acting) **(to Aug 16)** **Mr Tony Hodson (Aug 16–current)**
Project Manager	Mr Alan Levy **(to Aug 16)** **CMDR Ian Jimmieson (Aug 16–current)**

Project Data Summary Sheet[152]

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
Total Approved Budget (Current)	**$432.1m**
2016–17 Budget	**$61.7m**
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 **$56.9m** of a budget of **$61.7m**. The **$4.7m** underspend is largely due to **three major factors: 1. a favourable Foreign Exchange on the March 2017 Detailed Design Review (DDR) milestone payment, 2. delays in the ANZAC Warship Asset Management Agreement (WAMA) (previously ANZAC Alliance) expenditure and 3. contract payments slipping to Financial Year 2017-18 due to a delay in the Contractor meeting the deliverable requirement.**

Project Financial Assurance Statement

As at 30 June 2017, 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) **and NewGen Maritime Communications System Detailed Design Review (DDR). Following a later than originally planned completion of DDR, Support System Detailed Design Review (SSDDR) was rescheduled, from its original date in April 2017, to June 2017; with completion expected in July 2017.** Initial Materiel Release (IMR) has slipped to **August 2019 due to ship availability**.

Anzac Midlife Capability Assurance Program (AMCAP) scheduling for Ship #1 is driving the SEA1442 Phase 4 delivery, noting that there is no change to SEA1442 Phase 4 Final Operating Capability (FOC).

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 **August 2019.**

152 Notice to reader

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

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 (training system and 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 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; equipment obsolescence due to the length of project; availability of sufficient resources, and milestone delays due to under-estimating the time required to complete the work **and prepare the training facility**. Issues faced by the Project include changes to the AMCAP Program, a delay to the **completion of the SSDDR and IDDR milestones**, 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		
			374.3	
Jun 17	Exchange Variation		46.4	
Jun 17	**Total Budget**		432.1	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Leonardo MW	(80.5)		1
	Contract Expenditure – US Government	(9.2)		1
	Other Contract Payments / Internal Expenses	(12.4)		2
			(102.1)	
FY to Jun-17	Contract Expenditure –Leonardo MW	(50.4)		1
	Contract Expenditure – US Government	(5.5)		1
	Other Contract Payments / Internal Expenses	(1.0)		3
			(56.9)	
Jun 17	**Total Expenditure**		(159.0)	
Jun 17	**Remaining Budget**		273.1	

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 and $2.0m for other minor contract expenditure, project management costs and travel.
3	Other expenditure comprises $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 $0.4m 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
70.8	66.3	61.7	PBS to PAES decrease was primarily due to the re-scheduling of some initial spares procurement from 2016-17 into 2017-18. PAES to Final Plan – estimate decrease can be attributed to a revised FMS schedule and advice ~~for~~ from the US Government that the radios were cheaper than originally budgeted, a CASG/US Government decision that no September quarter FMS payment was required and a favourable foreign exchange rate.
Variance $m	(4.5)	(4.6)	Total Variance ($m): (9.2)
Variance %	(6.4)	(7.0)	Total Variance (%): (13.0)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.4)	Australian Industry	The underspend is largely due three major factors: 1. a favourable Foreign Exchange on the March 2017 Detailed Design Review (DDR) milestone payment, 2. delays in WAMA support expenditure and 3. Three Leonardo Milestone payments slipping to Financial Year 2017-18 due to a delay in the Contractor meeting the deliverable requirement.
		(3.4)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
		(0.9)	Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
61.7	56.9	(4.7)	Total Variance	
		(7.7)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Leonardo MW	Nov 2013	187.7	209.5	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 as at 30 June 2017 is based on actual expenditure to 30 June 17 and remaining commitment based on the commitment report as at 30 June 2017 from provided by CFO
2	In addition to Note 1 above, the increase in Leonardo MW contract price at 30 June 2017 includes additional elements, namely UHF MILSATCOM Antennae, Voice Recording System, and ARC-210 mounting and remote control ancillaries.
3	The scope of this contract is explained further below.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
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 17				
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	Jul 17	3	5
	First of Class Integration Detailed Design Review (IDDR)	May 17	N/A	Aug 17	3	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. The delay in completing the DDR is not expected to adversely impact on subsequent Ship Acceptance activities. This situation is being closely monitored by the Project Office.
5	The Contractor Schedule (at June 2017) indicated that the Support System DDR would occur in July 2017 (three months later than the Contract Date).
6	The Contractor Schedule (at June 2017) indicated that the First of Class Integration Detailed Design Review (IDDR) would occur in August 2017 (three months later than the Contract Date).

3.2 Contractor Test and Evaluation Progress

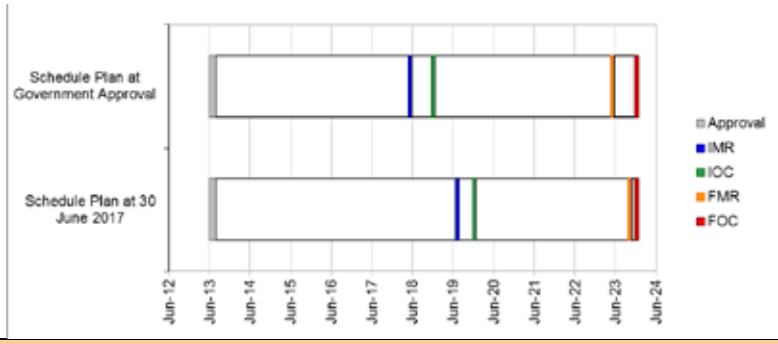
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	NewGen MCS	Jun 18	N/A	Aug 19	14	1
Acceptance	MTWAN Secondary Gateway	Apr 15	N/A	Mar 15	(1)	2
	Support System - Training System	Jun 17	Apr 18	Apr 18	10	3
	Support System - Shore Integration and Test Facility (SITF)	Dec 16	Mar 18	Sep 18	21	4
	Ship #1	Jun 18	N/A	Aug 19	14	1
	Ship #2	Apr 19	N/A	Sep 19	5	5
	Ship #3	Nov 19	N/A	Apr 20	5	5
	Ship #4	Jun 20	N/A	Dec 20	6	5
	Ship #5	Feb 21	N/A	Nov 21	9	5
	Ship #6	Sep 21	N/A	Jul 22	10	5
	Ship #7	Apr 22	N/A	Mar 23	11	5
	Ship #8	Sep 22	N/A	Oct 23	13	5

Notes	
1	The Contractor Schedule received on 26 June 2017 indicated that the Ship #1 Acceptance Date would occur in August 2019 (fourteen months later than the Contract Date). This revised forecast reflects the alignment of SEA1442 Phase 4 with the planned AMCAP dates and is the subject of a Contract Change Proposal which is under development.
2	MTWAN Secondary Gateway has been accepted and is operational.
3	The Leonardo MW Contract Master Schedule received on 26 June 2017 indicated an April 2018 date for the achievement of this Milestone (the Contract Date is June 2017). A formal contract change was agreed to move this Milestone to a more appropriate stage in the life of the Project (i.e. closer to the First of Class Acceptance).
4	SITF acceptance date initially incorrectly positioned in the contract. Correction made via a formal contract change.
5	Ship availability and schedule is driven by AMCAP. Whilst the availability dates for the Ship #1 have been agreed, the revised availability dates for the remaining ships have not been finalised. Forecast dates and MAA will need to be updated to align with AMCAP changes once the AMCAP schedule is finalised. Leonardo MW to be advised 90 days prior to commencement of each ship installation.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jun 18	Aug 19	14	1
Initial Operational Capability (IOC)	Dec 18	Dec 19	12	1
Materiel Release 2 – Ship # 2	Apr 19	Sep 19	5	1
Materiel Release 3 – Ship # 3	Dec 19	Apr 20	4	1
Materiel Release 4 – Ship # 4	Aug 20	Dec 20	4	1
Materiel Release 5 – Ship # 5	Apr 21	Nov 21	7	1
Materiel Release 6 – Ship # 6	Dec 21	Jul 22	7	1
Materiel Release 7 – Ship # 7	Aug 22	Mar 23	7	1
Final Materiel Release (FMR)	May 23	Oct 23	5	1
Final Operational Capability (FOC)	Dec 23	Dec 23	0	1

Schedule Status at 30 June 2017

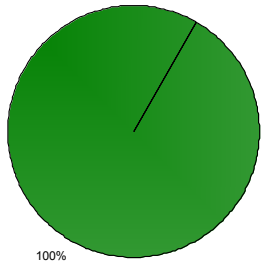


Notes	
1	See Section 3.2 Note 5 for detail.

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 Aug 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 Oct 23.**	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 (Anzac Midlife Life Of Type Capability Assurance Program (previously Life of Type Assurance Program - LOTAP)) to develop 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.
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 with the ANZAC SPO and the AMCAP to develop the 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. • 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 leading up to IDDR, 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.
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.
Emergent Risks (risk not previously identified but has emerged during 2016–17)	
Description	Remedial Action
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.** • **Concurrently assess the suitability of contracting a third party to prepare the training room to the required specifications.**

5.2 Major Project Issues

Description	Remedial Action
The Prime Contractor's under-resourcing in the lead up to the DDR milestone contributed to the delay in achieving this milestone.	• **The Contractor has since addressed the under-resourcing issue, achieved the DDR milestone in February 2017 and is reporting sufficient capacity to meet future milestones.** • **The Project Team will continue to closely monitor Contractor performance at meeting future deliverables through weekly performance review meetings.**
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 if required.
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 has been informed and been tasked to carry out necessary analysis and modifications to designs.** • **The Project Team is working with the Contractor to develop and implement a Contract Change Proposal to include new dates in the contract.** • **This issue is not expected to impact schedule, however will incur additional cost (minor) to the project.**
The installation baseline will change as a result of the SEA1448 4B 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 has been informed and is tasked to prepare revised installation plans. • The Project Team is working with the Contractor to develop and implement a Contract Change Proposal to incorporate this alternative design and installation baseline. • 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	• **Most of the high priority Support System Detailed Design was completed prior to the SSDDR Milestone. In**

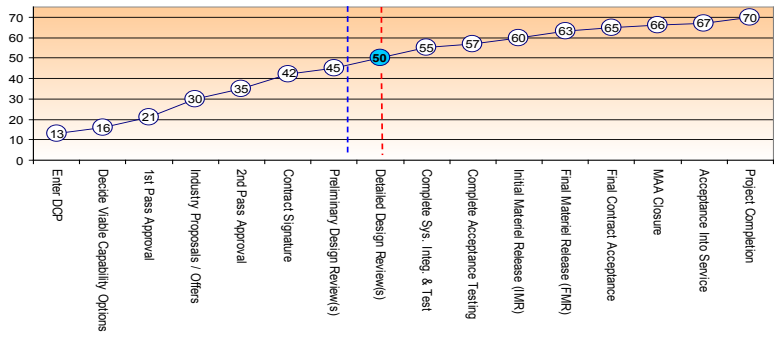
unforeseen amount of detailed design work required for the Support System.	agreement with the Project Team, the remainder of the design work will be completed by the end of July 2017. The SSDDR exit criteria are expected to be met at this point. • This delay is being closely managed with the Contractor and is not expected to adversely impact installation milestones as additional resources are being applied by the Contractor.
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 delay is being closely managed with the Contractor and is not expected to adversely impact installation milestones as additional resources are being applied by the Contractor.

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	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: Whilst NewGen MCS DDR has been completed and SSDDR is underway, FOC IDDR is not planned to be completed until August 2017. Once FOC IDDR is completed, the desired Benchmark score will be achieved.**							



2015–16 MPR Status - - - -	2016-17 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
It is essential to have a good set of requirements early in the life of the project. In particular, ensure requirements are clear, unambiguous, and a common understanding is established between all parties, be it the Capability Acquisition and Sustainment Group and the end-user or Defence and contractor.	Requirements Management
Interface management is extremely critical for integration projects. Legacy interfaces are not always defined or consistent with the documented definitions. Ensure interfaces are well understood by all parties, and where not possible, risk is recognised with adequate contingency. Attempt to address interfaces as early as possible as the longer they are left unattended, the greater their impact on cost, schedule, and possibly performance.	Requirements Management
The ASDEFCON suite of contracting template is complex and designed as a single source for all types of projects. It must be tailored well to suit individual project context and strategy to avoid unnecessary detail, resource burden, cost and schedule.	Contract Management
De-risk the project as much as possible before contract award. Spend time and resources upfront defining and understanding work and scope, schedule, risk, cost and other aspects of the contract with tenderers. This must include detailed review of the schedule to ensure all work elements have been programmed and the schedule is realistic. The de-risking activity may be through Offer Definition Activities and/or funded pre-contract work.	Contract Management
Provision of Government Furnished Material requires both parties to clearly understand and agree the serviceable status of equipment, responsibility for repair and/or replacement as well as the need to adequately manage these assets. This will help avoid future conflict.	**Contract Management**
Pay good attention to schedule and ensure all work is captured, logical and can form a basis for sound management post contract award. There is no substitute for good planning and a realistic schedule.	Schedule Management
Access to good and experienced resources is critical to sound project planning and management, and success. A realistic and achievable plan is more likely if a project has access to knowledgeable and experienced resources.	Resourcing Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management in 2016–17

Position	Name
Division Head	RADM Anthony Dalton
Branch Head	Ms Myra Sefton
Project Director	Mr Peter Henrick
Project Manager	Mr Norm Ridgway (to Aug 16) **Mr Simon Russell (Acting Aug 16–Mar 17)** **Mr Steve Arundel (Apr 17-current)**

Project Data Summary Sheet[153]

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
Total Approved Budget (Current)	**$428.0m**
2016–17 Budget	**$8.6m**
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

The project underspend of **$1.0m was due to delays in US development activity and amendments to implementation cost phasings**.

Project Financial Assurance Statement

As at 30 June 2017, 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.

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.

Boat 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 boat 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).

153 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 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 HMA Ships *Waller*, *Farncomb*, *Dechaineux*, *Sheean* and *Rankin.* Platform modifications in HMAS *Collins* will be completed in conjunction with the FCD program. As first of class specific testing was carried out for HMAS *Waller*, all subsequent testing for platform modifications will be 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 Guided Weapons System 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 boat 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 small project team is disproportionately affected by turnover of key personnel, leading to an impact on cost and schedule. **Treatment activities are in place so this risk has been downgraded to a medium risk.**

The Coles Review recommended changes to the submarine docking program that resulted in HMAS *Collins*' implementation completion date slipping from 2016 to 2018, with a corresponding impact on the FMR and Final Operational Capability (FOC) dates. **The new dates have now been agreed by Government and a new project schedule baseline has been set to incorporate these changes, this issue has now been closed.**

The weight of the Mk10 Mod 3 Torpedo Mounted Dispenser has created a manual handling hazard when dispensers are not attached to torpedoes. Feasibility of fibre optic cabling is being investigated to try to reduce the dispenser weight.

As a result of the test coverage limitation declared at OR, 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 is expected to be submitted to Navy by the end of October 2017, with approval expected in late 2017**.

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		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
			214.2	
Jul 10	Price Indexation		99.4	4
Jun 17	Exchange Variation		(123.7)	
Jun 17	**Total Budget**		428.0	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – US Government Initial MOU	(194.9)		
	Contract Expenditure – US Government Follow-on MOU	(47.0)		
	Other Contract Payments/Internal Expenses	(71.8)		5
			(313.8)	
FY to Jun 17	Contract Expenditure – US Government Follow-on MOU	(7.1)		
	Other Contract Payments/Internal Expenses	(0.5)		6
			(7.6)	
Jun 17	**Total Expenditure**		(321.3)	
Jun 17	**Remaining Budget**		106.7	

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 $71.8m includes an amount of $28.8m 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 $20.2m covered sundry operating expenditure.
6	The amount of $0.5m 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
9.2	8.5	8.6	PBS to PAES: The variance reflects increased cost estimate accuracy for US development work associated with the fibre optic Torpedo Mounted Dispenser. PAES to Final Plan: There is no variance.
Variance $m	(0.6)	0.0	Total Variance ($m): (0.6)
Variance %	(6.8)	0.0	Total Variance (%): (6.7)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.8)	Australian Industry	The project underspend of $1.0m was due to delays in US development activity (0.2) and amendments to implementation cost phasings (0.8).
			Foreign Industry	
			Early Processes	
			Defence Processes	
		(0.2)	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
8.6	7.6	(1.0)	**Total Variance**	
		(11.7)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 17 $m	Type (Price Basis)	Form of Contract	Notes
US Government Initial MOU	Mar 03	336.7	194.9	Fixed	MOU	1, 2
US Government Follow-on MOU	Nov 09	43.8	70.9	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 2017 is based on actual expenditure to 30 June 2017 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 Signature	Quantities as at 30 Jun 17	Scope	Notes
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 17

All weapon deliveries complete. Spiral 1 Software baseline achieved. Platform modifications in five 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

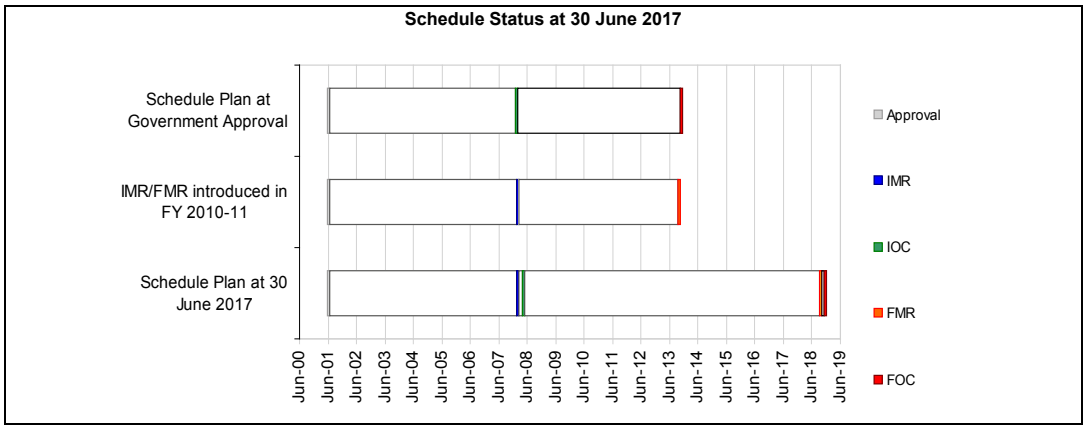
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Harbour Acceptance Tests	Weapon Handling and Discharge Systems Post Mk48 Mod 7 HWT Modification Test for HMAS *Waller*	Jan 07	N/A	Apr 07	3	1
Sea Acceptance Trials	Weapon Discharge 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**	**60**	5

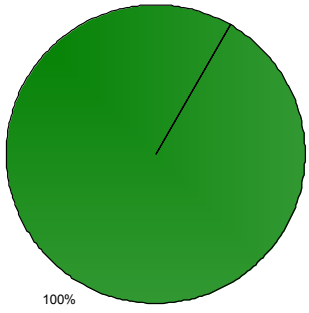
Notes	
1	Variance was attributable to the Navy Regulatory Review process.
2	Dependent upon US Government acquisition process.
3	FMR date was set before the FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the HWT 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.



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 is expected to be submitted to Navy by the end of October 2017, with approval expected in late 2017. 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 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**
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: • Use of contractors where appropriate; • Use of Reserve personnel where skills are suitable; and • Optimising use of matrix support staff. • **The effectiveness of the risk treatment strategy allowed this risk to be downgraded to Medium.**
Emergent Risks (risk not previously identified but has emerged during 2016–17)	
Description	**Remedial Action**
N/A	• N/A

5.2 Major Project Issues

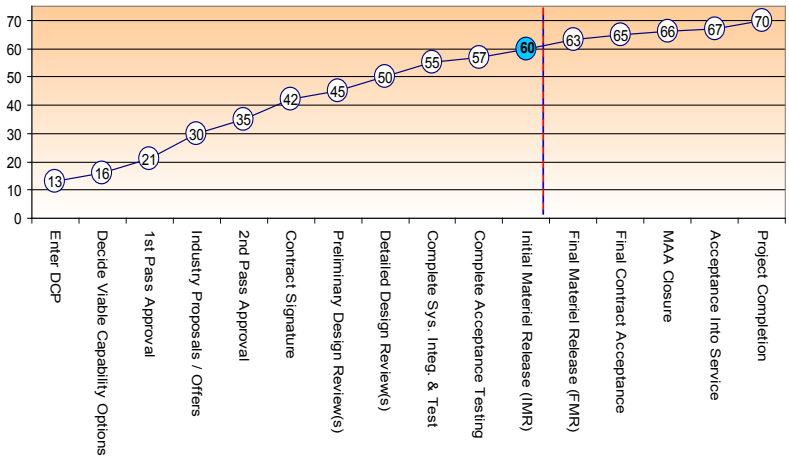
Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the HWT installation schedule.	The Government has agreed to the amended implementation dates resulting from previous docking program changes. A MAA amendment **has been signed** to **reset** the schedule, **so this issue is now closed**.
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 is expected to be submitted to Navy by the end of October 2017, with approval expected in late 2017**.

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.						



2015–16 MPR Status - - - -	2016–17 MPR Status - - - -

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 2016–17

Position	Name
Division Head	Mr Stephen Johnson
Branch Head	Mr David Cochrane
Project Director	CMDR Ian Jimmieson (Acting) **(to Aug 16)** **Mr Tony Hodson (Aug 16–current)**
Project Manager	CMDR Ian Jimmieson

Project Data Summary Sheet[154]

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	**Vice Chief of the Defence Force**
Government 1st Pass Approval	Mar 09
Government 2nd Pass Approval	Mar 09 and Mar 10
Total Approved Budget (Current)	**$420.5m**
2016–17 Budget	**$11.6m**
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 **30 June**, **the project had an overspend of $1.5m against the** Final Plan Estimate of **$11.6m**. **This was due to the increase in system and security requirements in response to the increased security threat environment and the higher standards introduced by security evaluation and accreditation agencies.**

Project Financial Assurance Statement

As at 30 June 2017, 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 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.

154 Notice to reader

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

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 constrained ability of the project to attend previous critical reviews and meetings contributed to the failure of the original NCS design. The project has learned from their limited oversight of the original NCS design by a subcontractor and is determined to ensure there is more face to face communication with the redevelopment of the NCS design. Scope was adjusted between the contractor and subcontractor to reduce risk.

A new risk that may impact the Project's scheduled upgrades identified at HMAS Stirling due to urgent building maintenance. The timeframe for the building works has not been identified; however, the Project will monitor the requirement and provide action within the boundaries of the remaining schedule.

A **previous** issue for the project **was** the increased resources and associated costs as a result of software development issues. ViaSat are developing the software and the testing is no longer independent which requires a greater level of oversight by the **P**roject **O**ffice. **The Project Office has treated the issue by locally reviewing software releases. This inturn has reduced the issue to medium.**

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
Jun 14	Real Variation – Real Cost Decrease	(18.0)		2
			439.0	
Jul 10	Price Indexation		18.0	3
Jun 17	Exchange Variation		(40.5)	
Jun 17	**Total Budget**		420.5	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Intelsat Prime	(294.4)		
	Contract Expenditure – ViaSat Prime	(23.8)		4
	Other Contract Payments / Internal Expenses	(22.7)		
			(340.9)	
FY to Jun 17	Contract Expenditure – ViaSat Prime	(5.1)		
	Other Contract Payments / Internal Expenses	(8.0)		5
			(13.1)	
Jun 17	**Total Expenditure**		(354.0)	
Jun 17	**Remaining Budget**		66.5	

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.
5	Other Contract Payments / Internal Expenses of $8.0m comprise of other Capital and Operating Expenditure related to contractor support services provided by Nova Defence.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
5.3	9.7	11.6	PBS to PAES: Increased forecast is due to changes and increases in system and security requirements. PAES to Final Plan: Increase in project forecast due to the identification of increased system and security requirements.
Variance $m	4.4	1.9	Total Variance ($m): 6.3
Variance %	82.2	19.4	Total Variance (%): 117.5

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Overspend due to the requirement to procure supplies and services supporting security requirements.
			Foreign Industry	
			Early Processes	
		1.4	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
11.6	13.1	1.4	**Total Variance**	
		12.4	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Intelsat	Mar 09	202.5	294.4	Firm	ASDEFCON (COMPLEX)	1, 3
ViaSat	May 12	36.5	45.3	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 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
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 17

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 17	15	2, 3, 4
Software Deployment Readiness	NCS	May 17	N/A	Mar 18	6	2, 4

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	Three month variance based on forecast date in the Contract Master Schedule. Contract milestone is subject to formal contract change and approvals process.
4	**Review re-scheduled under CCP3 signed in March 2017.**

3.2 Contractor Test and Evaluation Progress

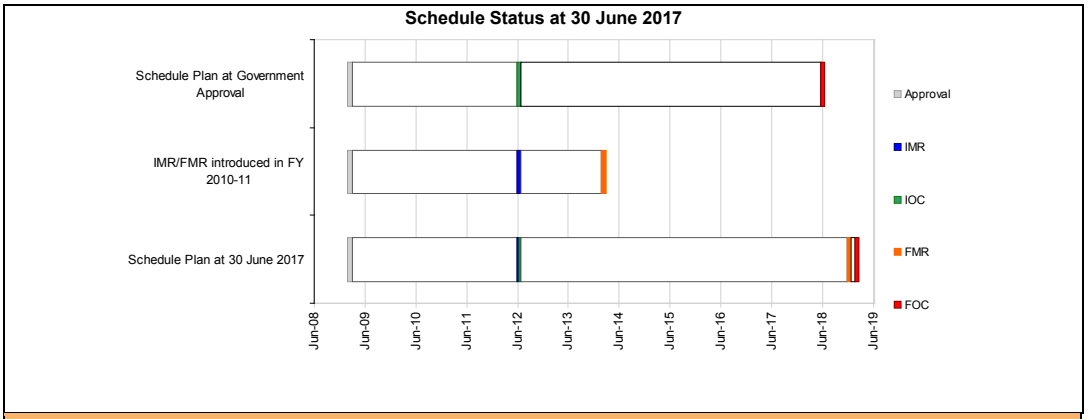
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	IS-22 Hosted Payload	Nov 10	N/A	Feb 11	3	1
	CSM	Sep 11	N/A	Oct 11	1	2
	NCS	Nov 13	Sep 14	**Aug 18**	**57**	3
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	May 12	(1)	
	CSM	Jul 12	N/A	Jun 12	(1)	
	NCS	Mar 14	Sep 14	**Dec 18**	**57**	3,**4**

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. This has caused a three month variance in schedule from that agreed under CCP2.**

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	Jun 18	69	
Final Materiel Release (FMR) # 2 (Network Control System)	Mar 14	**Jan 19**	**59**	**2**
Final Operational Capability (FOC) (Pacific Ocean)	Jun 18	**Mar 19**	**9**	**3, 4**

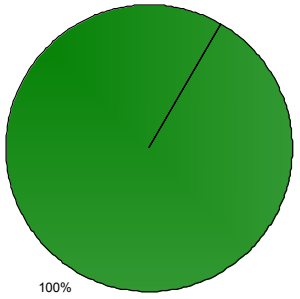
Notes	
1	MR was claimed on 28 September 2012. Chief Information Officer Group (CIOG) requested additional information which was supplied and MR was achieved on 21 December 2012.
2	**S**oftware delays noted in Section 3.2 Note 3 impact**ed** FOC**;** however, the magnitude of the delay is yet to be determined.
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 January 2019.**



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

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green**: **The project is currently meeting 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 January 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
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
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.	**Monitor risk through regular stakeholder engagement.**
There is a risk that current facilitates are not fit for purpose or do not comply with Building Safety Regulations.	**The Project Office has established a project safety case report that identified a series of risks for remediation. Risks will be remediated through existing maintenance support Contracts available within Defence.**

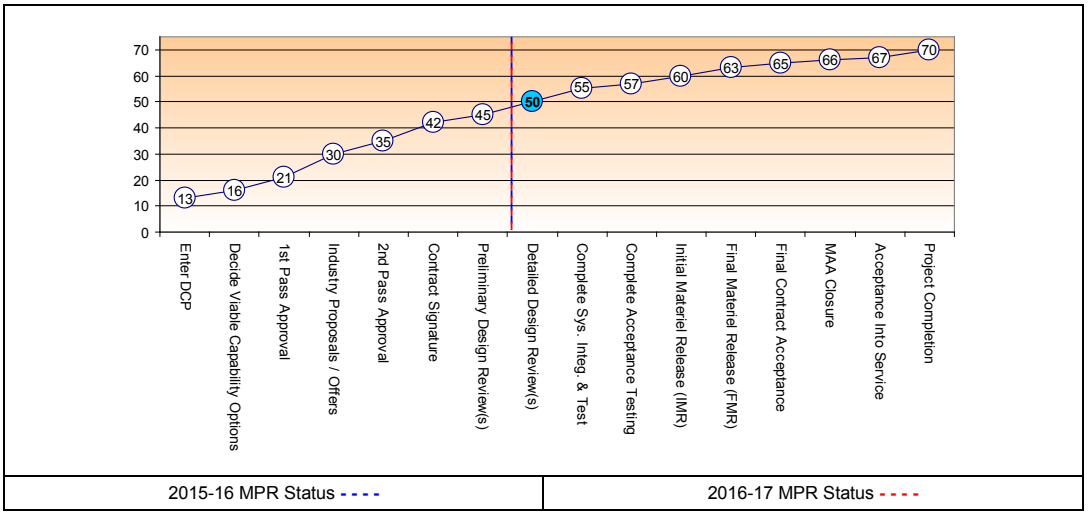
5.2 Major Project Issues

Description	Remedial Action
Increased resources and cost to the CoA due to software issues. ViaSat now produces and tests its own software.	CCP2 provisions allow CoA engineers to obtain monthly software development metrics, send engineers to observe testing for build releases, early release of builds to CoA engineers for in-house review. **This treatment has been successfully applied, reducing the significance of the issue.**
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	6	8	8	7	6	6	7	48
	Explanation	• **Schedule:** The schedule for the NCS has slipped **59** 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.**						



2015-16 MPR Status - - - -	2016-17 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 2016-17

Position	Name
Division Head	RADM Anthony Dalton
Branch Head	Ms Myra Sefton
Project Director	Mr Paul Davies (**Jun 16-Oct 16**) **Mr Shaun Donovan (Acting Oct 16–Dec 16)** **Mr Peter Concannon (Acting Jan 17–Jun 17)** **Ms Michelle Liu-Aves (Jun 17–Current)**
Project Manager	Mr David Dixon

Project Data Summary Sheet[155]

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
Total Approved Budget (Current)	$411.7m
2016-17 Budget	**$6.6m**
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 accrued overspend of $0.2m of the 2016-17 Cash budget of $6.6m. This is due to phasing alignment within the three year contracted high level work plan under Performance Period Two of the In-Service Support Contract with ASC.**

Project Financial Assurance Statement

As at 30 June 2017, 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.

155 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.

Installation of engineering enhancements are progressing **within schedule tolerance as part of** the High Level Work Program for the In-Service Support Contract (ISSC) Performance Period Two (PP2). Progress continues for activities of project scope implementation on HMAS ***Collins*** in FCD **(expected to be completed in May 2018)** and HMAS ***Sheean*** **in Mid-Cycle Docking (MCD) (expected to be completed in December 2017)**. The project continues to progress non-platform activities **such as the** Diesel Land Based Test Facility **which is currently undergoing final acceptance from ASC Pty Ltd** (**ASC) and is expected to be completed in August 2017. The project completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS *Dechaineux* during Exercise Platypus Moon March 2017. The results of the trial demonstrated the capability successfully.** Final Materiel Release (FMR) is expected to be achieved in August 2022.

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 remaining capability (Exit & Re-entry) has 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 on HMAS *Dechaineux* were conducted post Mid-Cycle Docking (MCD) in June 2015. A persistent defect in the Exit and Re-entry modification within the conning tower was identified during the sea trails which lead to further investigation and minor redesign. Project has rectified the defect and conducted subsequent sea verification trials **during Exercise Platypus Moon in March 2017. The results of the trial demonstrated the capability successfully.**

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 the submarine availability and the FCD program.

Note

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

1.3 Project Context

Background

In 1999, Government sponsored the '*McIntosh and Prescott Report'* into submarine capability, which was followed by a subsequent review by Head Submarine Capability Team who identified capability, reliability and sustainability issues with the Collins Class platform and associated shore infrastructure. In 2000, Government approved project funds to design and implement engineering enhancements for as many of these capability and materiel deficiencies as possible within the allocated budget. Government also approved a "global budget" whereby Head Maritime Systems could approve transfer of funding between SEA 1439 Phase 3, SEA 1439 Phase 4B (Improvements to Collins Sensors), SEA 1439 Phase 4A (Replacement Combat Systems) and SEA 1429 (Replacement Heavyweight Torpedo) to achieve optimum capability. Under the global budget there have been reductions in funding allocations to SEA 1439 Phase 3 in favour of SEA 1439 Phase 4A and SEA 1429, with a commensurate reduction in the number of engineering enhancements to be implemented through SEA 1439 Phase 3.

The scope of this project is limited to the reliability and sustainability issues identified in the 1999 review and not the more contemporary reliability and sustainability issues relating to diesel engines, generators, batteries or the main motor; those issues are being addressed under the submarine sustainment program.

Many of the engineering enhancements can only be installed during the submarine FCD program and although most design and development activities are complete, submarine upgrades are contingent on the FCD program, which will run to 2022.

A total of 24 platform upgrades were originally identified in the initial MAA. However, 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 in two submarines.
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.

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 IMS which is not controlled by the project. Where schedule slip occurs, there is the potential for impact on project cost and schedule performance.

Risks have been identified pertaining to the HALON actuation panel upgrade performance and the adaption of panel back lighting. Additionally the current design of the Outboard Stowages and installation options may be deficient in a number of areas. Preliminary design review has been conducted utilising a design options to mitigate these risks.

The schedule delay related to the Special Forces Exit and Re-entry conning tower modification defect has developed into an issue because of delays in verifying the system prior to HMAS *Dechaineux* Intermediate Docking commencing. The project recently completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS Dechaineux during Exercise Platypus Moon. The results of the trial demonstrated the capability successfully; however the trials identified a further four risks pertaining to the maintenance and operation of the new capability (see Section 5.1 for further detail).

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.

SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Program: The Project scope is to deliver a Modernised Submarine Communications System and upgrade Electronic Support Measures systems on Collins Class Submarines.

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		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
			271.3	
Jul 10	Price Indexation		74.4	7
Jun 17	Exchange Variation		(6.0)	
Jun 17	**Total Budget**		411.7	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – ASC Pty Ltd	(245.8)		
	Other Contract Payments / Internal Expenses	(113.6)		8
			(359.4)	
FY to Jun 17	Contract Expenditure – ASC Pty Ltd	(6.7)		
	Other Contract Payments / Internal Expenses	(0.1)		
			(6.8)	
Jun 17	**Total Expenditure**		(366.2)	
Jun 17	**Remaining Budget**		45.5	

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	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, $8.0m 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
6.7	6.6	6.6	PBS-PAES: **Revised down by ($0.1m) due to assessment of planned expenditure and forecast budget achievement for the year.** PAES-Final Plan: **There is no variance.**
Variance $m	(0.1)	0.0	Total Variance ($m): (0.1)
Variance %	(1.9)	0.0	Total Variance (%): (2.0)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.2	Australian Industry	Variance achieved an over spend of $0.2m of the 2016-17 Cash budget of $6.597m. This is due to phasing alignment within the three year contracted high level work plan under Performance Period Two of the In-Service Support Contract with ASC.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support in Operations	
			Additional Government Approvals	
6.6	6.8	0.2	**Total Variance**	
		3.2	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $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.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
ASC Pty Ltd	N/A	N/A	See 1.3 Project Context: Background for further information.	

Major equipment received and quantities to 30 Jun 17

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.

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 (COLLINS)	Jun 05	N/A	Oct 07	28	3, 4
	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 (COLLINS)	May 08	May 18	May 18	120	3, 4
	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	May 18	14	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	HMAS *Collins* received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit and Re-entry) required redesign to increase diver safety following sea trials conducted in HMAS *Collins* in 2008. The redesigned safety modifications identified were installed on HMAS *Dechaineux* MCD (completed December 2014). These modifications are planned for HMAS *Collins* FCD which is scheduled to complete May 2018 in accordance with the current IMS.
4	The Special Forces Upgrade safety modifications identified during the manned Sea Verification Trial have been installed and harbour and sea acceptance testing on HMAS *Dechaineux* completed post MCD in June 2015. This capability is still undergoing **verification** to determine system safety and fitness for purpose as required to achieve Initial OR. Full class implementation will be achieved on completion of HMAS *Collins* FCD which is scheduled for May 2018, and excludes the activities required to achieve Initial OR and OR.
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	Installation of Fire Fighting Upgrades are planned to be finalised early on HMAS *Sheean* during MCD (January 2018) with final class installation on HMAS *Dechaineux* occurring during FCD (May 2022).
7	Full class implementation will be achieved on the completion of HMAS *Collins* FCD which is scheduled for May 2018 in accordance with the IMS.

3.2 Contractor Test and Evaluation Progress

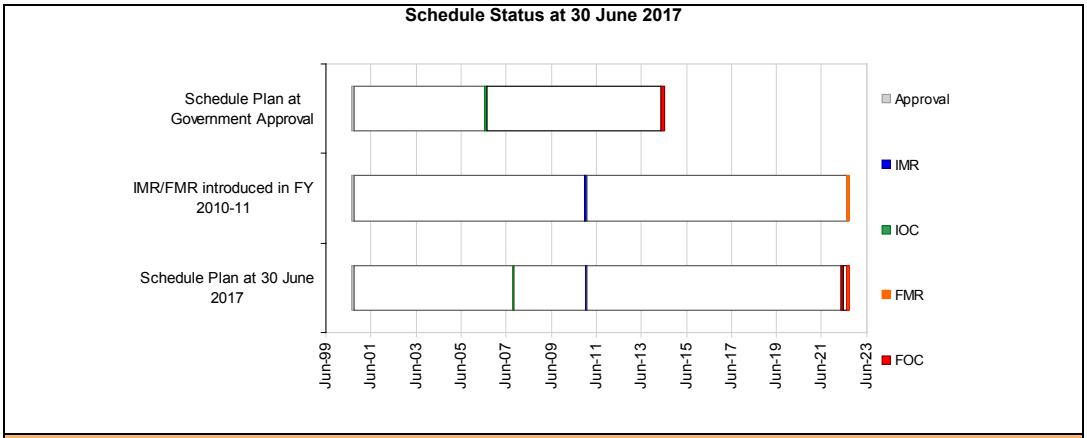
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned (Note 1)	Achieved/Forecast (Note 1)	Variance (Months)	Notes
Article IV. Harbour Acceptance Test (HAT)	Special Forces Upgrade (COLLINS)	Jun 05	N/A	Sep 06	15	
	Torpedo Decoy	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	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 (COLLINS)	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 (DECHAINEUX)	Nov 10	**Dec 17**	**85**	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	Aug 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 17**	**42**	8
Fire Fighting Upgrade (DECHAINEUX)	Jun 14	May 22	95	9
Sewage System Upgrade (COLLINS)	Jun 14	May 18	47	9
Fast Track Enhancements (WALLER)	Jul 06	Nov 07	16	10

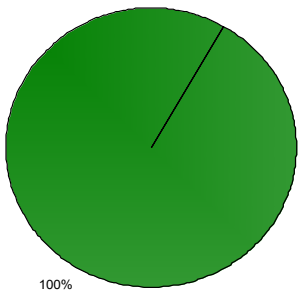
Notes	
1	Special Forces Upgrade modifications have been delayed due to the requirement to implement safety modifications identified during the manned Sea Verification Trial. These safety modifications have been installed and harbour and sea acceptance testing on HMAS *Dechaineux* completed post MCD in June 2015. **The project recently completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS Dechaineux during Exercise Platypus Moon. The results of the trial demonstrated the capability successfully.**
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 MAA.
7	The MAA delivery date was for HMAS *Collins* only. HMAS *Dechaineux* implementation through MAA amendment 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)** is underway a completion date **of December 2017 set be the project. This is dependent on the Navy being able to satisfy their OT&E requirements.**
9	Variance due to changes in docking maintenance schedule since original MAA. Forecast date linked to FCD completion.
10	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.



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 Special Forces Exit and Re-entry safety modifications on HMAS *Dechaineux*. **Project has completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS *Dechaineux* during Exercise Platypus Moon. The results of the trial demonstrated the capability successfully.** 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: Multi swimmer release and Float On/Float Off; • 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*	Not yet achieved

	FCD consisting of: • Special Forces Upgrade – Outboard Stowage: HMA Ships *Collins* and *Dechaineux;* • Special Forces Upgrade – Explosive Ordnance: HMA Ships *Collins* and *Dechaineux;* and • Diesel Engine Upgrades: All Submarines (expected end HMAS *Waller* FCD (May 2020)). FMR is planned for August 2022.	

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance of delays to the FCD schedule due to other non-project related activities or other higher priority Program activities that reduce the contractors' ability to undertake project activities which would result in a schedule and cost impact to the Project.	• Aligning Project schedule with Program schedule (IMS); • Ensuring all Project Configuration Change Instructions are approved and planned into the FCD Advance Planning Letter, Maintenance Availability Change Proposal 1 & 2; • Ensure Project Materials are available for the FCD; and • Ensure the off boat and on boat activities are understood and where possible off boat work is done ahead of target FCD. • **This risk is reduced to Medium due to the proactive management of the Enterprise Governance Framework and the maturity of the project deliverables within the FCDs.**
Article VI. There is a chance that Program priorities and competing workload demands of skilled resources will impact on the availability to undertake project activities as planned because of competing priorities within the Program and the limited number of skilled resources available which would result in a schedule and cost impact to the project.	• Resolving design issues with engineering enhancements early to improve design maturity. • Coordinating the engineering enhancement workload on the ASC capped workforce. • Aligning Project schedule with Program schedule (IMS). **This risk has reduced to Medium due to a reduced likelihood of this risk occurring.**
There is a chance that the current design of the Outboard Stowages and installation options will be deficient in a number of areas (weight and pressure) due to current design solutions being unable to meet original user requirements. As a result, the number of pressure vessels may need to be reduced to overcome weight and user requirements may need to be revisited.	Project Office to seek clarification of Special Forces and platform requirements /constraints to re-confirm feasibility of design options and user requirements. • Destructive testing and modelling of preliminary design solution. • **Ensure weight and stability changes are positive and allocated of the modification via the Margins Board.** **This risk has reduced to Medium due to a reduced likelihood of the risk occurring as the design maturity increases and margins impacts are understood.**
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.
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
There is a chance that current improvements required for the Fire Panel will not be implemented to meet schedule of current planned installation on HMAS Collins FCD and HMAS Sheean MCD 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.**
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.
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 on HMAS *Dechaineux* of the DABS system.	• Improvement in the of regular maintenance regime of the DABS Systems to reduce defects.
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.

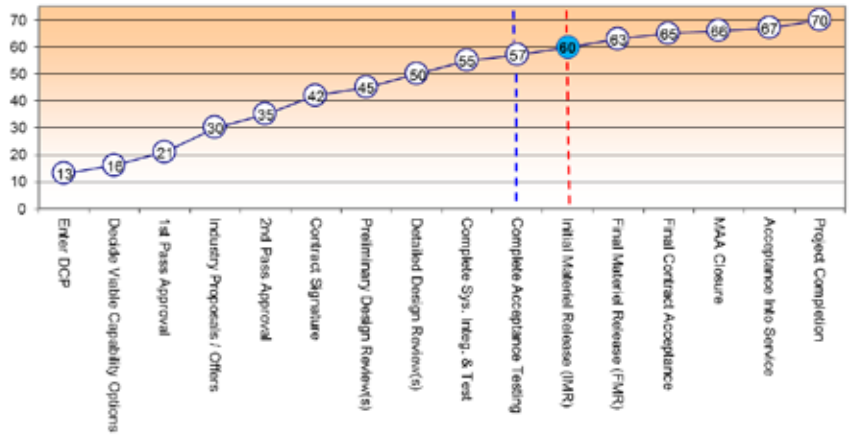
5.2 Major Project Issues

Description	Remedial Action
Special Forces Exit and Re-entry capability manned sea verification Trial was not conducted prior to HMAS *Dechaineux* Intermediate Docking due to delays in proving the system fit for purpose, driven by the continued defect of the conning tower compressible volume curtain. As a result, this capability will not meet the MAA date.	• Update all Special Forces documentation associated with the operation and support of the Special Forces Exit and Re-entry 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.							



2015-16 MPR Status - - - -	2016-17 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 2016-17

Position	Name
Division Head	Mr Stephen Johnson
Branch Head	CDRE John Chandler (Jul 15-**Dec 16**) **CDRE Richard Fitzgerald (Dec 16-current)**
Project Director/**Manager**	Mr Brad Hajek

Project Data Summary Sheet[156]

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
Total Approved Budget (Current)	**$386.7m**
2016-17 Budget	**$14.3**
Project Stage	Initial 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 will provide 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, is to upgrade all eight of the ANZAC Class Ship's existing 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.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2017 the project is overspent by $0.4m on an accrual actuals basis. The overspend is due in the main to the gain share provisions for the First of Class contract being written back in the PAE's exercise when there was still a gain share requirement.

Project Financial Assurance Statement

As at **30 June 2017**, 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, 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 **recovered contingency in the financial year primarily through finalizing First of Class pain/gain share adjustments at lower than expected amounts. Contingency has been applied to cover remaining pain/gain share adjustments, combat management system and training facility costs.**

Schedule Performance

The systems being provided under Phase 2A are being delivered to current schedule. 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 70 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. Recent achievements include the Materiel Release (MR) of the fourth ship HMAS *Warramunga* in October 2015, and the fifth ship HMAS *Ballarat* in May 2016. HMAS *Parramatta*, the sixth ship, **was completed in January 2017.** HMAS *Toowoomba,* the seventh ship, **was completed in May 2017 and** the final ship,

156 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 *Stuart,* **is progressing well with completion expected in September 2017.** The project remains on track to deliver Final Operating Capability by October 2017.

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 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 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 Systems (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

The major risks and issues for SEA 1448 Phase 2A are:

- **A chance of** unplanned work being activated during an ASMD refit period, predominantly through the concurrent **planned maintenance activities. This risk has been downgraded to medium due to the final ship commencing trials.**
- With multiple ships now in the ASMD program, managing the demands of competing resources across complex activities including major sustainment programs.
- **Budgeted Cost Model (BCM) and Assets Under Construction (AUC) are not correctly maintained and rolled out.**

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).

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		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 17	Exchange Variation		(3.6)	
Jun 17	**Total Budget**		386.7	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – SAAB Systems Pty Ltd (CMS)	(109.6)		4
Jul 17				
	Contract Expenditure – BAE Systems Australia (IRST)	(93.8)		
	Contract Expenditure – BAE Systems Australia (Follow On)	(69.3)		4
	Contract Expenditure – BAE Systems Australia (First of Class)	(36.9)		4
	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(23.2)		4
	Other Contract Payments / Internal Expenses	(21.9)		4, 5
			(354.7)	
FY to Jun 17	**Contract Expenditure – SAAB Systems Pty Ltd (CMS)**	**0.3**		**6**
	Contract Expenditure – BAE Systems Australia (IRST)	**0.3**		**6**
	Contract Expenditure – BAE Systems Australia (Follow On)	(12.3)		
	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(0.7)		
	Contract Expenditure – BAE Systems Australia (First of Class)	(0.7)		
	Other Contract Payments / Internal Expenses	(1.5)		5
			(14.7)	
Jun 17	**Total Expenditure**		(369.4)	
Jun 17	**Remaining Budget**		17.4	

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.
6	**Both the CMS and IRST contracts were closed out in the reporting period with pain share credits of $0.3m each.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
15.7	18.6	14.3	PBS - PAES: **The variation of $2.9m is mainly due to revised estimate of gainshare payable to industry and a number of minor changes to payment phasings.** PAES - Final Plan: **The variation down of ($4.3m) for the final plan was due to the value of gain share being less than forecast upon completion of the FOC contract. This was in addition to re-phasing the budget for the forecast gain share of the FON contract into outer years where it will be realised.**
Variance $m	2.9	(4.3)	Total Variance ($m): (1.5)
Variance %	18.2	(23.2)	Total Variance (%): (9.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**The $0.4m overspend is due in the main to the gain share provisions for the First of Class contract being written back in the PAE's exercise when there was still a gain share requirement.**
			Foreign Industry	
			Early Processes	
		0.4	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
14.3	14.7	0.4	**Total Variance**	
		3.1	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
SAAB Systems Pty Ltd (CMS)	Apr 05	123.1	109.6	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 Systems 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	84.7	Variable	Alliance	1, 2

Notes

1	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 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 17		
SAAB Systems 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 Systems 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 17

1	Equipment has been delivered into store and is being appropriately maintained until required by Phase 2B for its installation. Installation has been completed for First of Class ship, HMAS *Perth*, HMAS *Arunta*, HMAS *ANZAC,* HMAS *Warramunga*, HMAS *Ballarat,* **HMAS *Parramatta* and HMAS *Toowoomba***.

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

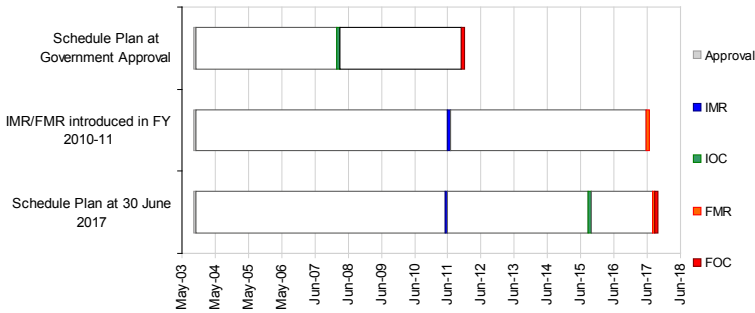
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Nov 07	N/A	Mar 11	40	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	89	1
Final Materiel Release (FMR)	Jul 17	Oct 17	3	2
Final Operational Capability (FOC)	Dec 11	Oct 17	70	3

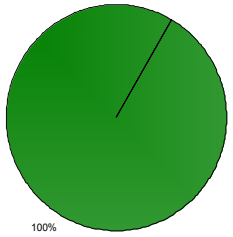
Notes	
1	Variance was directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar 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	This variation is due to the approval of ships 2-8 by Government.
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.



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)	Acceptance of all ASMD upgraded ships and associated supplies, with the final ship being HMAS *Stuart,* scheduled for October 2017.	Not Yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance of unplanned work ~~is~~ being activated during an ASMD refit period such as emergent work arising from planned ASMD installation activities, planned maintenance activities and from unexpected events during the ASMD installation work period.	The project and ANZAC SPO engineering group are actively managing the introduction of additional work packages into the ASMD upgrade period, with priority on maintaining the approved ASMD schedule. This risk has been downgraded to medium due to the final ship commencing trials.
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

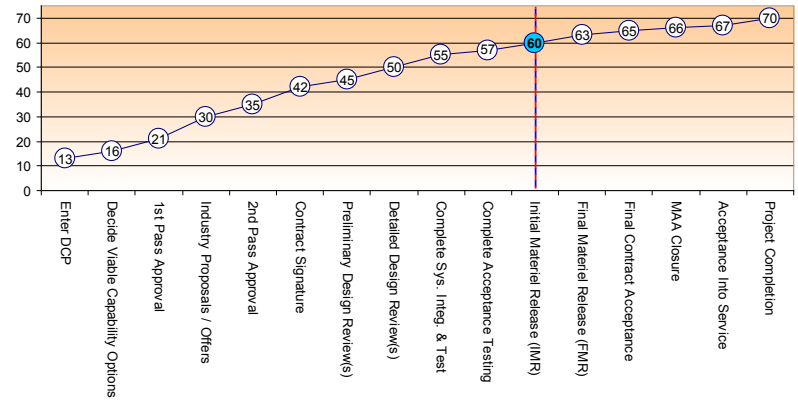
5.2 Major Project Issues

Description	Remedial Action
Budgeted Cost Model (BCM) and Assets Under Construction (AUC) are not correctly maintained and rolled out.	**Contingency is expected to be utilised to correct the shortage of experienced specialist staff required to manage the BCM and AUC tasks.**
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	8	9	9	9	8	9	60
	Explanation	1. **Schedule:** Schedule is mature and there remains **one** further ship to upgrade. 2. **Requirement:** Based on the completion of OT&E, the requirements of Phase 2A are clearly understood. 3. **Technical Understanding:** Successful OT&E completed in August 2013.							



2015-16 MPR Status - - - -	2016-17 MPR Status - - - -

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 2016-17

Position	Name
Division Head	RADM Adam Grunsell, RAN
Branch Head	CDRE Steve Tiffen, RAN
Project Director/Manager	Mr Michael Welsh (Acting to Sep 16) Mr Ian MacKinnon (Sep 16–current)

Project Data Summary Sheet[157]

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)
Total Approved Budget (Current)	**$369.1m**
2016–17 Budget	**$32.9m**
Project Stage	**Final** Materiel Release (**FMR**)
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

LAND 75 Phase 4 aims to increase and enhance the Army's networked force acquired under LAND 75 Phase 3.4. The Battle Management System Command and Control (BMS-C2) will provide 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 is expanding the basis of provisioning for M113AS4 (Armoured Personnel Carriers), Protected Mobility Vehicles and G-Wagon.
- Work Package Bravo (WP-B) - **Unapproved**. This work package seeks to integrate the BMS-C2 into additional vehicle platforms.
- Work Package Charlie (WP-C) - **Unapproved**. This work package seeks to implement a mature BMS-C2 training solution.
- Work Package Delta (WP-D) - **Unapproved**. This work package seeks to extend the functionality of the BMS-C2 to support formation headquarters and enhance the dismounted Battlefield Management System.

The unapproved scope of Land 75 Phase 4 Work Packages B, C and D are being considered under Land 200 Tranche 2.
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 is scoped to provide 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 will also:

- Design BGC3 to be integrated into the Protected Mobility Vehicle Air Defence Variant (PMADV), and
- Enhance 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.

157 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.

1.2 Current Status

Cost Performance

In-year

In-year expenditure, to **30 June 2017**, of **$28.7m** resulted in underspend of **$4.3m** against a budget of **$32.9m**. **The variation is due to the delay in signing the Specific Absorption Rate Survey and Quote. Also contributing to the variation is the lower than anticipated spend against Vehicle Movement and Offer Definition Improvement Activity. The removal of the Mission Kits Supplements requirement for the Protected Mobility Vehicles also contributes to the variation.**

Project Financial Assurance Statement

As at 30 June 2017, project LAND 75 Phase 4 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

In the 2012 Federal Budget, the Government moved Battle Management System (BMS) installation into M113AS4 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 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 PMV Command Variant vehicles. The project continues to install 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 being delivered under WP-A. System level regression testing (Conformance to standard testing) **will be conducted as a single test Program synchronised with In Service Support Release**.

The installation of the Protected Mobility Air Defence Variant **commenced in May 2017 and is expected to be completed by 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 the element of LAND 75 yet to be approved by Government.

The unapproved scope of Land 75 Phase 4 Work Packages B, C and D are being considered under Land 200 Tranche 2 which is due for Government consideration in 2017. Final Materiel Release (FMR) will constitute 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.

Final Materiel Release (FMR) for the project is scheduled to be achieved by **October** 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 and 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 Protected Mobility Command Vehicle (PMCV),
- **126** Protected Mobility Troop Vehicle (PMTV),
- **61 Protected Mobility Ambulance Variant (PMAV),**
- 12 Protected Mobility Electronic Warfare (PMVEW) vehicle installation kits,
- 5 PMCV engineering vehicle installation kits,
- 5 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 PMCV design delivered under LAND 75 Phase 3.4. The software development of enhanced VMF BGC3 capability does introduce software engineering development scope.
Major Risks and Issues
Nil.
Other Current Sub-Projects
Nil.
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		319.0	1
Jun 15	Real Variation – Real Cost Increase		8.5	2
Jun 17	Exchange Variation		41.6	
Jun 17	**Total Budget**		369.1	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Elbit Systems Limited	(274.0)		3
	Other Contract Payment / Internal Expenses	(19.7)		4
			(293.7)	
FY to Jun 17	Contract Expenditure – Elbit Systems Limited	(22.6)		3
	Other Contract Payment / Internal Expenses	(6.2)		5
			(28.7)	
Jun 17	**Total Expenditure**		(322.4)	
Jun 17	**Remaining Budget**		46.7	

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 ($9.1m), Operating Expenditure ($6.3m), Consultants ($3.7m), Minor Capital ($0.6m) and expenditure not attributable to the Prime contract.
5	Other expenditure comprises: Contractor Support ($2.9m), Consultants ($2.6m) Operating Expenditure ($0.6m) 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
52.6	26.5	32.9	PBS-PAES: The variation relates to later than expected payments for final acceptance and physical configuration audit activities. PAES-Final Plan: The variation relates to the inclusion of two milestone payments for Protected Mobility Air Defence Variant and Variable Message Format Physical and Functional Configuration Audit activities.
Variance $m	(26.1)	6.3	Total Variance ($m): (19.8)
Variance %	(49.6)	23.9	Total Variance (%): (37.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	At 30 June 2017, the project had an underspend of $4.3m against its year to date budget of $33.0m. The variation is due to the delay in sign the Specific Absorption Rate Survey and Quote. Also contributing to the
		(4.1)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	

			Cost Saving	variation is the lower than anticipated spend against Vehicle Movement and Offer Definition Improvement Activity. The removal of the Mission Kits Supplements for the Protected Mobility Vehicles also contributes to the variation.
			Effort in Support of Operations	
			Additional Government Approvals	
32.9	28.7	(4.1)	**Total Variance**	
		(12.6)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
Elbit Systems Limited	Dec 13	204.3	335.2	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 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
Elbit Systems Limited	666	960	BGC3 installed into M113, PMV and G-Wagons	1,2,3

Major equipment received and quantities to 30 Jun 17

Protected Mobility Vehicle Command Variant (PMCV) – 36
Protected Mobility Vehicle Troop Variant (PMTV) – **126**
Protected Mobility Ambulance Variant (PMAV) – 61
Protected Mobility Vehicle Electronic Warfare (PMEW) – 12
Protected Mobility Vehicle Command Variant (Engineering Quantities) – 5
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	Dec 11	N/A	Feb 15	38	2
	PMADV	Dec 15	Nov 15	Mar 16	6	3
Functional Configuration Audit	M113AS4	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	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

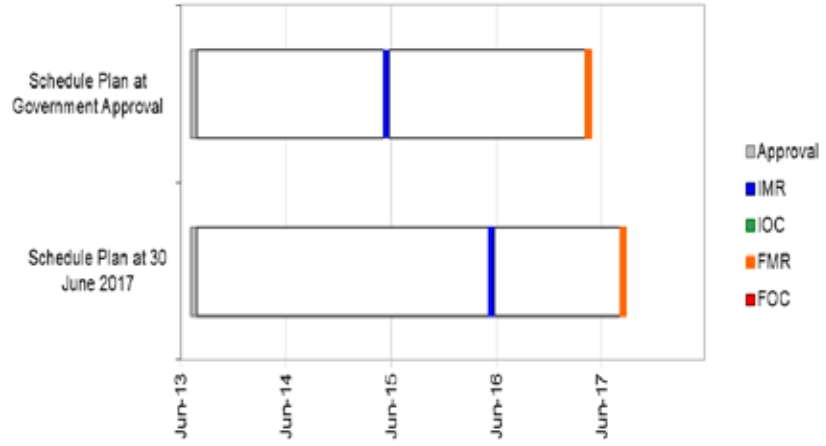
Notes	
1	System integration was completed under LAND 75 Phase 3.4.
2	Conformance to standard testing to be conducted as a single test program synchronised with In Service Support Release.
3	Delays due to approval of acceptance test report.

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	Oct 17	20	2
Materiel Release 3	Mar 16	Oct 17	19	2
Materiel Release 4	Nov 16	Oct 17	11	3
Materiel Release 5	Dec 16	Oct 17	10	2
Materiel Release 6	Mar 17	Oct 17	7	4
Final Materiel Release (FMR)	Jun 17	Oct 17	4	4,5

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. Administrative action underway to recognise completion of Materiel Release by the Capability Manager which is scheduled to be achieved by October 2017.
3	Delivery of Supplies achieved in February 2016. Administrative action underway to recognise completion of Materiel Release by the Capability Manager which is scheduled to be achieved by October 2017.
4	Delayed due to provision of Government Furnished Equipment to Contractor. Delivery of Supplies is expected to be achieved in July 2017. Administrative action underway to recognise completion of Materiel Release by the Capability Manager which is scheduled to be achieved by October 2017.
5	When the unapproved scope of Land 75 Phase 4 Work Packages B, C and D is transferred to Land 200 Tranche 2 (currently being considered), FMR will constitute the final deliverable for the Project.

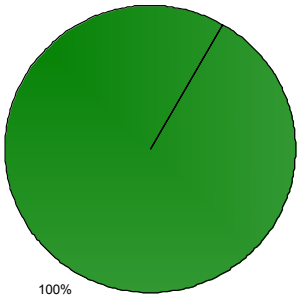
Schedule Status at 30 June 2017



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 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 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 PMCV vehicles, 126 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 PMTV vehicles, 12 BGC3 PMVEW vehicle installation kits, 5 BGC3 PMCV engineering vehicle installation kits, 5 BGC3 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 PMADV vehicles. **FMR is expected to be achieved in October 2017.**	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 2016–17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

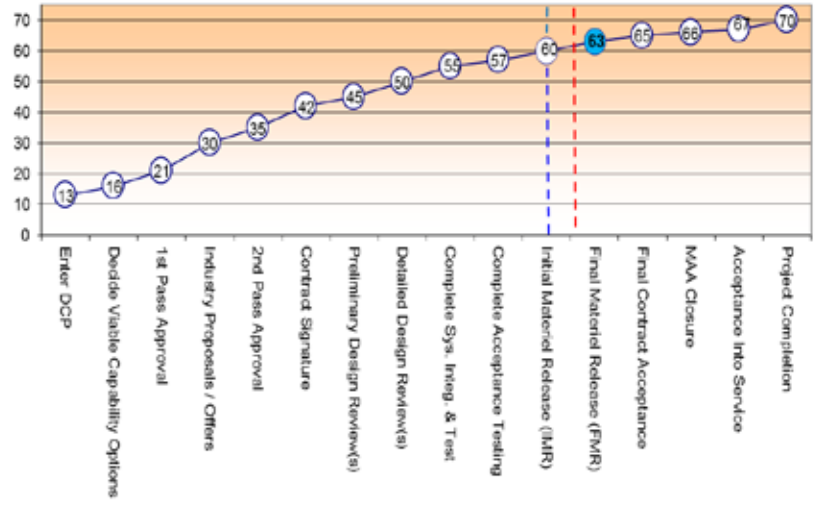
Description	Remedial Action
N/A	N/A

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							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	9	9	9	9	8	9	63
Final Materiel Release	Project Status	9	9	9	9	9	8	9	62
	Explanation	• Schedule - Administrative action is underway to recognise completion of Final Materiel Release by the Capability Manager which is scheduled to be achieved by October 2017.							



2015-16 MPR Status - - - -	2016-17 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 2016–17

Position	Name
Division Head	RADM Tony Dalton
Branch Head	Mr Roger Grose (Acting to Jul 16) COL Anthony Taylor (Acting Jul 16–Sep 16) Mrs Alison Petchell (Oct 16–current)
Project Director/Manager	LTCOL Rob Gunn

Project Data Summary Sheet[158]

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
Total Approved Budget (Current)	**$236.8m**
2016–17 Budget	**$0.0m**
Project Stage	**Final Materiel Release**
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

The JP 2048 Phase 3 project **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, Landing Helicopter Dock (LHD), acquired under JP 2048 Phase 4A/4B. The craft **are** known as LHD Landing Craft (LLC). The LLC interface and operate with the LHD ships and enable transport of personnel and equipment from the LHD ships to the shore, including where there are no fixed port facilities or prepared landing facilities.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2017 there was no variance to the project budget.

Project Financial Assurance Statement

As at 30 June 2017, 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). It is awaiting Navy to reschedule the incomplete LHD/LLC interface trials of May 2016 for carriage of heavy loads. The trial is currently forecast for Quarter two, 2018. Completion of the trial will support Navy's achievement of Final Operational Capability (FOC), forecast in mid 2018. This has impacted Project closure, delaying it from December 2016 as scheduled, to mid late 2018.

Materiel Capability Delivery Performance

The project remains on track to deliver the materiel capability as approved at Second Pass.

158 Notice to reader

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

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

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 project has accepted all batches of LLCs (12 LLCs in total) from Navantia in Australia.

The delay to schedule of Navy Operation Test and Evaluation (NOTE) from Quarter four 2015 to Quarter two 2016, was due to unavailability of military assets and Navy introducing into service this new capability.

This risk 'Inability to verify system and functionality requirements during NOTE' is **closed** as all **certification for the project has been completed and the** system and functional requirements have been verified. **The issue 'Failure to complete all certification testing by FMR' is closed as all certification for the project is complete and FMR was achieved in December 2016. The project is working with Navy to mitigate the issue 'Impact to Project Closure due to the delay in achievement of Final Operational Capability'.**

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.

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		
Aug 13	Real Variation – Transfer	(7.7)		3
			225.1	
Jul 10	Price Indexation		0.1	4
Jun 17	Exchange Variation		8.6	
Jun 17	**Total Budget**		236.8	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – Navantia	(150.3)		
	Other Contract Payments / Internal Expenses	(26.0)		5
			(176.3)	
FY to Jun 17	Contract Expenditure – Navantia	0.0		
	Other Contract Payments / Internal Expenses	0.0		
			0.0	
FY to Jun 17	**Total Expenditure**		(176.3)	
Jun 17	**Remaining Budget**		60.5	

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	0.2	0.0	PBS–PAES: Variance is due to projected final escalation adjustments for the prime contract and payments for final contract deliverables. PAES–Final Plan: Variance is minor.
Variance $m	0.2	(0.2)	Total Variance ($m): 0.0
Variance %	100.0	(100.0)	Total Variance (%):0.0

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	There is no variance.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
0.0	0.0	0.0	**Total Variance**	
		0.0	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
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 Jun 17 is based on actual expenditure to 30 Jun 17 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
Navantia	12	12	LHD Landing Craft and Support System	

Major equipment received and quantities to 30 Jun 17

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

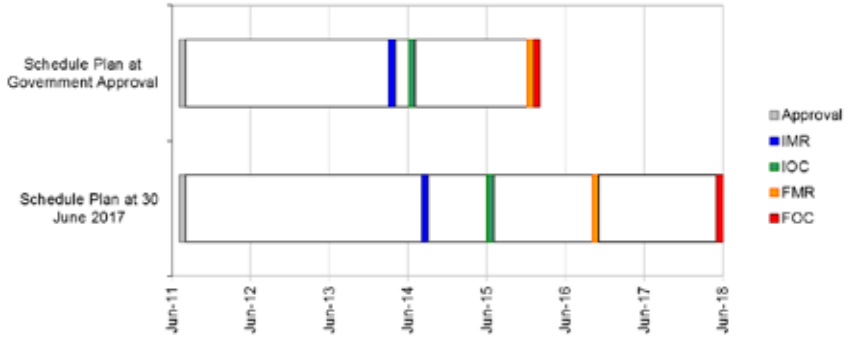
Notes	
1	System Integration refers to Navantia test and evaluation of the LLC and does not include the Battle Management System (BMS) or Navigational Display System (NDS). The BMS and NDS were installed on LLC 01-12, after acceptance of the craft by the CoA from Navantia.
2	The production of the second 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	Jun 18	28	3

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. A new trial date is to be re-scheduled, currently forecast for Quarter two 2018, which has delayed Navy's achievement of FOC as forecast to mid 2018.

Schedule Status at 30 June 2017

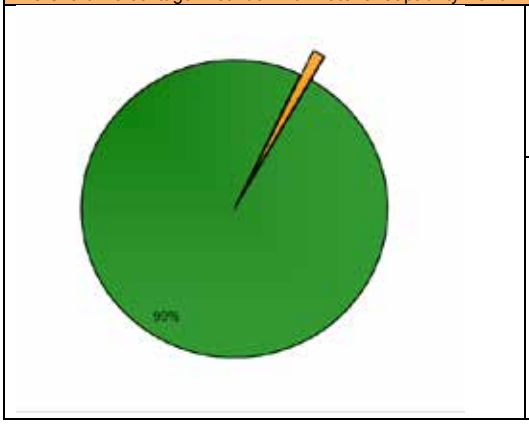


Note
Forecast dates in Section 3 are excluded from the scope of the review.

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 plan to complete the LHD/LLC interface trials Quarter two 2018 to support achievement of Final Operational Capability.

Amber:

The trials in May 2016 were not completed as planned for safety reasons. Navy is planning to complete the trial and confirm existing OQE for LLC in Quarter two 2018.

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.

	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
Inability to verify system and functionality requirements during Naval Operation Test and Evaluation (NOTE).	This risk is **closed** as all **certification for the project has been completed and the** system and functional requirements have been verified using evidence from the LLC Contractor acceptance trials conducted in Spain 2013 – 2014 and the LHD/LLC interface trials conducted by Navy in 2016.
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

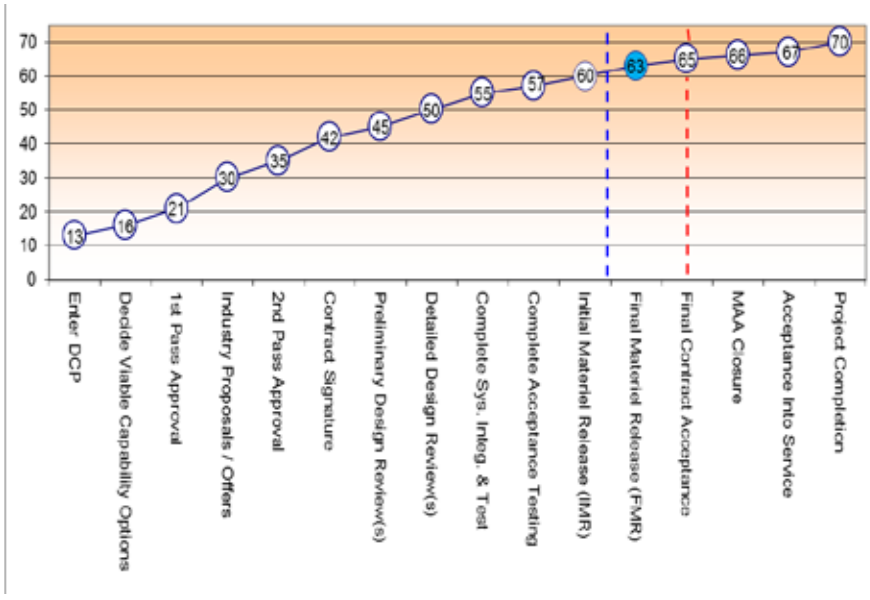
Description	Remedial Action
Failure to complete all certification testing by FMR.	This issue is **closed** as all certification **for the project** is complete **and FMR was achieved in December 2016.**
Project Closure will not be achieved as forecast due to a delay in achievement of Final Operational Capability (FOC) leading to an impact on schedule.	**The project office is working with Navy to:** • **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 currently forecast for Quarter two 2018. Completion of the trial will support Navy's achievement of Final Operational Capability (FOC), forecast in mid 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							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	10	9	9	9	9	10	9	65
	Explanation	• **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.							



2015-16 MPR Status - - - - | 2016-17 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 2016-17

Position	Name
Division Head	Mr Alan Nicholl (Dec 15–Feb 17) Mr Patrick Fitzpatrick (Acting Feb 17–current)
Branch Head	Mr Peter Croser
Project Director	Mr Peter Croser
Project Manager	Mr Paul Hegarty

Part 4. JCPAA 2016–17 Major Projects Report Guidelines

Australian Government
Department of Defence

Australian National Audit Office

2016–17 Major Projects Report Guidelines

Endorsed by the Joint Committee of Public Accounts and Audit

November 2016

Contents

Introduction

1.1 The Defence Major Projects Report (Defence MPR) will form part of the Australian National Audit Office's (ANAO) 2016–17 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 2016–17 MPR will report on 27 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	2011–12 and 2012–13	29
2008–09	15	2013–14	30
2009–10	22	2014–15	25
2010–11	28	2015–16	26

1.4 Project data is presented by way of Project Data Summary Sheets (PDSSs), as at 30 June each year. The ANAO will review the PDSSs in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*. The ANAO's review is designed to enable the ANAO to obtain sufficient appropriate evidence to form a conclusion 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 2016–17 MPR;

(b) outline the roles and responsibilities of Defence in the production and quality assurance of Defence's 2016–17 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 2017 tabling.

1.6 Each year the MPR Guidelines are reviewed and amended to reflect lessons learned, in order to improve the MPR processes. At the JCPAA's request, the ANAO has taken

1 The ANAO's 2016–17 MPR will also include the ANAO's review and analysis, and the Auditor-General's Independent Review 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.

administrative responsibility for updating the Guidelines annually and submitting them to the Committee for endorsement.

Criteria for Project Selection

1.7 The inclusion of projects in the MPR is based on the projects included in the Defence Integrated Investment Plan 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 achievement of Final Operational Capability (FOC) or on a post-Final Materiel Release (FMR) risk assessment of the timely achievement of FOC and subject to the following criteria:

(a) the outstanding deliverables post-FMR, against the relevant Materiel Acquisition Agreement (MAA)[5] and/or Joint Project Directive (JPD)[6];

(b) the remaining schedule post-FMR, against the relevant MAA and/or JPD;

(c) the remaining budget post-FMR, against the relevant MAA and/or JPD;

(d) the remaining project risks and issues; and

(e) the Capability Manager's assessment, including overall risk rating and the extent to which this risk rating relates to the Capability Acquisition and Sustainment Group (CASG's) responsibilities.[7]

---

4 The Capability Life Cycle is being redesigned in line with direction from the First Principles Review to deliver a risk-based decision-making and asset management process. Projects in the 2016–17 MPR will have been approved under the two-pass approval process.

5 An agreement that states in concise terms what services and products the Capability Acquisition and Sustainment Group (as supplier) will deliver, for how much and when, in support of unapproved and approved Major and Minor Capital Equipment projects. Department of Defence, *Defence Capability Development Manual*, July 2015, Part 1, Glossary, p. 7.

6 A project-specific directive issued by the Secretary of the Department of Defence and the Chief of the Defence Force to the nominated Capability Manager or Project Realisation Manager and other involved action addresses, detailing the basis of project approval and assigning overall responsibility, authority and accountability for realisation of the capability system to an in-service state. Department of Defence, *Defence Capability Development Manual*, July 2015, Part 1, Glossary, p. 6.

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 2016].

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, they should be removed from the PDSSs, and expenditure and milestone information included within the Defence MPR in the subsequent year.[8]

2016–17 Project Selection

1.12 The following table reflects projects included in the 2016–17 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 2016–17 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
AIR 87 Phase 2	Armed Reconnaissance Helicopter	ARH Tiger Helicopters
LAND 121 Phase 4	Protected Mobility Vehicle – Light (PMV-L)	Hawkei[1]
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter
LAND 116 Phase 3	Bushmaster Protected Mobility Vehicle	Bushmaster Vehicles
LAND 121 Phase 3A	Field Vehicles and Trailers	Overlander Light
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT
AIR 5431 Phase 3	Civil Military Air Management System	CMATS[1]
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B
AIR 9000 Phase 5C	Additional Medium Lift Helicopters	Additional Chinook
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land)
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: LAND 121 Phase 4 Protected Mobility Vehicle – Light (PMV-L) and AIR 5431 Phase 3 Civil Military Air Management System are included in the MPR Program for the first time in 2016–17.

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.

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.

9 The AIR 5402 Air to Air Refuelling Capability project was removed from the MPR program following achievement of FOC in July 2016.

Defence's roles and responsibilities

1.13 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.

1.14 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.

1.15 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 2017.
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 PDSS suite. • Clearance of the PDSSs and Defence analysis.
Chief Finance Officer Defence	Financial advice and assurance	• Overall responsibility for giving strategic financial advice and information in Defence.[10] • Coordination and provision of corporate budget information. • In consultation with the ANAO, arrange for independent financial assurance for a sample of projects.[11] • 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.
Assistant Secretary Program 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 PDSS suite and the 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.

10 Department of Defence, *Defence Annual Report 2014–15*, October 2015, p. 69.

11 Department of Defence, *Executive minute on JCPAA Report No. 436 Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, 29 November 2013, p. 1.

MPR process

1.16 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 Program Management.

1.17 Defence has developed the indicative schedule for the MPR program in consultation with the ANAO (refer to page 409). 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.

1.18 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.

1.19 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.

1.20 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.

1.21 The ANAO will also request that Capability Managers confirm the status of all projects in the MPR program, particularly progress toward the Initial Materiel Release (IMR), Initial Operational Capability (IOC), FMR and FOC milestones.

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 403).

(b) Where possible, acronyms and jargon are not to be used. When acronyms are used, the first use must be spelt out in full.

(c) 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.

(d) 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.

(e) 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.

(f) 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.
	2016–17 Budget	The estimated project expenditure for 2016–17 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.[12] This amount should agree to the Estimate Final Plan in Section 2.2A and Section 2.2B.
	Project Stage	The Life Cycle Gate 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.
	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.

12 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
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	In-year 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. Note: For the pre-30 June PDSS, projects should use the part-year result. Project Financial Assurance Statement 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.[13] In consultation with the ANAO, the Chief Finance Officer Defence will also arrange for independent financial assurance for an appropriately selected sample of projects. Contingency Statement 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[14]] 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. 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

13 Department of Defence, Defence Materiel Instruction (Finance), DMI (FIN) 01-0-044, *Project Assurance Statements*, February 2015, stipulates the standard of review and expenditure forecasting required, standard text and consultation requirements.

14 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.

Heading	Data	Definition/Description
		– 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.[15] 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.
	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. **"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

15 JCPAA, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, p. 25.

Heading	Data	Definition/Description
		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. Note: For the pre-30 June PDSS, this amount and its components noted above should reconcile to the current BORIS Project Approvals extract at Additional Estimates, and should agree to the part-year result stated under 'Year To Date – Gross Plan' in the MRS Majors Budget Performance Total report.
	Project Expenditure	
	Prior to Jul 16	This item comprises all amounts incurred in all periods prior to the current reporting period (i.e. expenditure up to 30 June 2016). 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, restricted to contracts valued at greater than or equal to $10m. Contract expenditure should be listed from highest to lowest value. **"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 17	This item comprises all amounts incurred in the current reporting period (i.e. contract level expenditure from

Heading	Data	Definition/Description
		1 July 2016 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, restricted to contracts valued at greater than or equal to $10m. Contract expenditure should be listed from highest to lowest value. **"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 2017) 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.
	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 2016–17, as published in the PBS.
	Estimate PAES $m	The mid-year revised budget estimate for 2016–17, 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 2016–17. The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PAES.

Heading	Data	Definition/Description
	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 2016–17. 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 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. 2016–17). This amount should agree to the FY to Jun 17 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. 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.

Heading	Data	Definition/Description
Section 2.3 Details of Project Major Contracts	Contractor[16]	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 17 $m	Signature $m The value of the contract at signature. 30 Jun 17 $m The value of the contract at 30 June 2017 (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 ROMAN at 30 June 2017). 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 • 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 Major Projects Report Directorate. 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 17	The quantity of major equipment under contract as at the date the contract was signed and also as at 30 June 2017. The quantity of contracted equipment should only be provided at a summary level.

16 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
	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 17	Detail the major equipment and quantities the project has received to 30 June 2017.
	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. Other or alternative reviews, for instance for unique arrangements or redesigns, should also 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.
	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. Other or alternative test and evaluation activities, for instance for unique arrangements or activities associated with redesign, should also 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	Replanned 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'.

Heading	Data	Definition/Description
	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.
Schedule Status at 30 June 2017	Graph	The Defence MPR team will use the projects existing detail on: Second Pass Approval, Initial Materiel Release (IMR), Initial Operational Capability, Final Materiel Release (FMR) and Final Operational Capability, to produce the graph.
SECTION 4 – MATERIEL CAPABILITY DELIVERY PERFORMANCE		
Section 4.1 Measures of Materiel Capability Delivery Performance	Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	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 2017. 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 current MRS Majors Capability report.
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 2017, 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.

Heading	Data	Definition/Description
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 emerged during 2016–17)	Description: A major project risk that was not previously identified in the risk log but has emerged this year, rated as high or extreme pre-mitigation. 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.
	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.[17] 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 2017 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

17 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.

Heading	Data	Definition/Description
		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.
SECTION 7 – LESSONS LEARNED		
Section 7.1 Key Lessons Learned	Project Lesson	Describe the project lesson (at the strategic level) that has been learned.
	Categories of Systemic Lessons	Select from the following 'Systemic Lessons'[18] 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 2016–17	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 2016–17, and applicable dates of change, for example: CMDR {First Name} {Last Name} (to Jan 17) Mr {First Name} {Last Name} (Acting Feb 17–Apr 17) Ms {First Name} {Last Name} (May 17–current) Where the Project Director and Project Manager are the same, combine as 'Project Director/Manager'.

18 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[19]

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)	
2016–17 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
Forecasts 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.

19 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.

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 17	Exchange Variation		
Jun 17	**Total Budget**		
	Project Expenditure		
Prior to Jul 16	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 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		
Jun 17	**Total Expenditure**		
Jun 17	**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 17	Exchange Variation		
Jun 17	**Total Budget**		
	Project Expenditure		
Prior to Jul 16	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 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		
Jun 17	**Total Expenditure**		
Jun 17	**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 17 $m			
Contractor 1						
Contractor 2						
Contractor 3						
Contractor 4						
Contractor 5						

Notes	
1	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 17		
Contractor 1				
Contractor 2				
Contractor 3				
Contractor 4				
Contractor 5				

Major equipment received and quantities to 30 Jun 17

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 2017

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 2016–17)	
Description	Remedial Action

5.2 Major Project Issues

Description	Remedial Action

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

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark								
	Project Status								
	Explanation	•							
Defence MPR Team to insert graph									

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons

Section 8 – Project Line Management

8.1 Project Line Management in 2016–17

Position	Name
Division Head	
Branch Head	
Project Director	
Project Manager	

Indicative 2016–17 MPR Program Schedule

Event	Start Date	End Date
Planning for the 2016–17 MPR (including review of outcomes of the 2015–16 program)	Dec 16	Jan 17
Defence and ANAO finalise preparations for the 2016–17 MPR program in time for the JCPAA Hearing	Jan 17	Mar 17
Defence MPR provide program advice to the project offices	Feb 17	Feb 17
Defence MPR management finalise preparation with the project offices	Feb 17	Feb 17
Project site visits conducted by the ANAO	Mar 17	Jun 17
End Of Financial Year advice to project offices	Jul 17	Jul 17
Post-30 June PDSS reviews	Jul 17	Sep 17
ANAO submits 2017–18 MPR Guidelines and Project Selection to the JCPAA	Aug 17	Aug 17
Development of the Defence 2016–17 MPR	Aug 17	Oct 17
ANAO develops its Assurance, Review and Analysis for provision to the Secretary	Aug 17	Oct 17
Secretary submits formal draft Defence section of the 2016–17 MPR to the Auditor-General	Oct 17	Oct 17
Defence response to the ANAO Assurance, Review and Analysis for provision to the Auditor-General	Oct 17	Oct 17
ANAO internal clearance of the 2016–17 MPR (Publication and Tabling)	November 2017	