

2020–21 Major Projects Report

Department of Defence

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Canberra ACT
13 December 2021

Dear Mr President
Dear Mr Speaker

In accordance with the authority contained in the *Auditor-General Act 1997*, I have undertaken a review of the status of selected major Defence equipment acquisition projects, as at 30 June 2021, as presented by the Department of Defence. The report is titled *2020–21 Major Projects Report*. Pursuant to Senate Standing Order 166 relating to the presentation of documents when the Senate is not sitting, I present the report of this review to the Parliament.

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

Yours sincerely



Grant Hehir
Auditor-General

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

AUDITING FOR AUSTRALIA

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

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Report snapshot

Auditor-General Report No.13 2021–22

2020–21 Major Projects Report (MPR)



What is the purpose of the MPR?

The MPR is an annual review of the Department of Defence's major defence equipment acquisitions, undertaken at the request of the Parliament's Joint Committee of Public Accounts and Audit (JCPAA). Its purpose is to provide information and assurance to the Parliament on the performance of selected acquisitions as at 30 June 2021.

This year, it includes 21 major projects.

This is the 14th MPR since its commencement in 2007–08.



What did we find?

The Auditor-General concluded that:

Based on the procedures I have performed and the evidence I have obtained, nothing has come to my attention that causes me to believe that the information in the 21 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 2020–21 Major Projects Report Guidelines, as endorsed by the JCPAA.



What is reviewed?

The Department of Defence prepares Project Data Summary Sheets (PDSS) on selected major defence equipment acquisition projects in accordance with guidelines endorsed by the JCPAA.

The ANAO reviews the information in the PDSSs in accordance with the ANAO Auditing Standards specified by the Auditor-General under the *Auditor-General Act 1997*.

The PDSSs cover:

1. Background and government approvals
2. Financial performance
3. Schedule performance
4. Delivery against agreed scope
5. Risks and issues
6. Lessons learned by the project
7. Management accountability for the project

\$58bn

was the value of the 21 Defence Major Projects as at 30 June 2021.

5 of 21

Defence Major Projects experienced in-year schedule slippage.

97%

was the expected delivery against agreed scope across the Major Projects as at 30 June 2021 — with 6 projects reporting that some elements of capability delivery are under threat or unlikely to be met.

Part 1. ANAO Review and Analysis

Summary

Background

1. The Department of Defence's (Defence) Capability Acquisition and Sustainment Group (CASG) manages the process of bringing new specialist military equipment into service for the Australian Defence Force (ADF). As at 30 June 2021, CASG was managing 174 active major and minor capital equipment projects worth \$121.6 billion¹, with an in-year budget of \$8.6 billion.² Defence capitalised some \$9.0 billion from these projects in 2020–21.³
2. The Major Projects Report (MPR) comprises: Defence information and commentary on a selection of its major projects (the Major Projects); and assurance and analysis of that information by the Australian National Audit Office (ANAO). This is the fourteenth annual MPR.
3. Major Projects are selected for inclusion in the MPR based on criteria endorsed by the Parliament's Joint Committee of Public Accounts and Audit (JCPAA).⁴ The projects represent a selection of the most significant major projects managed by CASG.
4. The total approved budget for the 21 Major Projects included in this report is approximately \$58.0 billion, covering 48 per cent of the total budget of active major and minor capital equipment projects of \$121.6 billion.

Selected projects

5. The Major Projects selected for review and their government approved budgets as at 30 June 2021 are listed in Table 1, on p.4. They comprise six AIR projects, eight SEA projects, five LAND projects and two joint (JP) projects.

1 Department of Defence, *Defence Annual Report 2020–21*, Defence, Canberra, 2021, Chapter 3, Annual Performance Statements, 2021, p.38.

2 Department of Defence, *Defence Portfolio Budget Statements 2020–21*, Defence, Canberra, 2020, p.22.

3 Department of Defence, *Defence Annual Report 2020–21*, Defence, Canberra, 2021, Appendix A Financial Statements, Note 3.2A, p.202.

4 The *2020–21 Major Projects Report Guidelines* were endorsed by the JCPAA in November 2020 and are included in **Part 4** of this report.

Table 1: 2020–21 MPR — selected projects and approved budgets at 30 June 2021¹

Project Number (Defence Capability Plan)	Project Name (on Defence advice)	Abbreviation (on Defence advice)	Approved Budget \$m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter ²	15,630.7
SEA 5000 Phase 1	Future Frigates	Future Frigates ²	6046.9
SEA 1000 Phase 1B	Future Submarines Design Acquisition	Future Subs ²	5818.2
LAND 400 Phase 2	Combat Reconnaissance Vehicles	Combat Recon. Vehicles ²	5655.4
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters ²	3770.0
SEA 1180 Phase 1	Offshore Patrol Vessel	Offshore Patrol Vessel ²	3669.6
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy ²	3397.8
AIR 7000 Phase 1B	MQ-4C Triton Remotely Piloted Aircraft System	MQ-4C Triton	1953.4
LAND 121 Phase 4	Protected Mobility Vehicle – Light (PMV-L)	Hawkei ²	1952.9
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Light Tactical Fixed Wing ^{2,3}	1426.1
LAND 19 Phase 7B	Short Range Ground Based Air Defence	SRGB Air Defence ¹	1201.0
AIR 2025 Phase 6	Jindalee Operational Radar Network	JORN Upgrade ^{1,2}	1128.6
SEA 1654 Phase 3	Maritime Operational Support Capability	Repl Replenishment Ships	1082.6
AIR 5431 Phase 3	Civil Military Air Management System	CMATS ²	974.5
LAND 200 Tranche 2	Battlefield Command System	Battlefield Command System ²	962.3
JP 2072 Phase 2B	Battlespace Communications System Phase 2B	Battle Comm. Sys. (Land) 2B	942.2
SEA 1439 Phase 5B2	Collins Class Communications and Electronic Warfare Improvement Program	Collins Comms and EW ²	608.7
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	Pacific Patrol Boat Repl	501.4
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms ²	434.1
SEA 1448 Phase 4B	ANZAC Air Search Radar Replacement	ANZAC Air Search Radar Repl ²	429.1
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	421.3
Total	21		58,006.8

Note 1: LAND 19 Phase 7B Short Range Ground Based Air Defence and AIR 2025 Phase 6 Jindalee Operational Radar Network are included in the MPR Program for the first time in 2020–21.

Note 2: These projects have been the subject of individual performance audits. See Table 8, on pp.42–45, for more information.

Note 3: Light Tactical Fixed Wing was previously called Battlefield Airlifter. For further discussion see the Light Tactical Fixed Wing PDSS in **Part 3**.

Source: The PDSSs in **Part 3** of this report.

Rationale for undertaking the review

6. Defence's major defence equipment acquisition projects continue to be the subject of parliamentary and public interest. This is due to their high cost and contribution to national security, the challenges involved in completing them within the specified budget and schedule, and to the required capability, and their contribution to industrial and employment policy objectives.

7. The JCPAA has stated that the objective of the MPR is 'to improve the accountability and transparency of Defence acquisitions for the benefit of Parliament and other stakeholders.'⁵

Conduct of the review

8. Defence prepares information for ANAO review in accordance with guidelines endorsed annually by the JCPAA (included in **Part 4** of this report).⁶ The status of the Major Projects selected for review is reported in the *Statement by the Secretary of Defence* (included in **Part 3** of this report) and a Project Data Summary Sheet (PDSS) prepared by Defence for each of the Major Projects (included in **Part 3** of this report).

9. The ANAO has reviewed each of the PDSSs prepared by Defence as a 'priority assurance review' under subsection 19A(5) of the *Auditor-General Act 1997* (the Act), allowing the ANAO full access to the information gathering powers under the Act.

10. The ANAO's review provides limited assurance⁷ and was undertaken in accordance with the applicable auditing standards. The ANAO's 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 confirmation from Defence senior management and industry (through Defence) in relation to the status of the selected Major Projects.

11. The objective of this ANAO assurance engagement and the ANAO review procedures is to provide a basis for independent assurance by the Auditor-General over the status of the Major Projects selected for review. The Auditor-General's summary conclusion is set out below. The full conclusion is found in the Auditor-General's *Independent Assurance Report* in **Part 3** of this report.

5 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 483: Inquiry into the 2018–19 Defence Major Projects Report and the Future Submarine Project – Transition to Design (Auditor-General's Reports 19 and 22 (2019–20))*, (2020), Objective of the Major Projects Report, p.6.

6 The JCPAA has taken an active role in the development and review of the MPR program. The main changes to the MPR Guidelines have tended to follow on from the JCPAA's recommendations.

7 In a limited assurance engagement, the assurance practitioner (in this case the ANAO) 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 performed are detailed in paragraphs 1.7 to 1.9 of **Part 1** of this report. The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than those performed for, a reasonable assurance engagement (an ANAO performance audit is typically a reasonable assurance engagement). Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

12. Certain forecast information found in the PDSSs is excluded from the scope of the ANAO's review, such as forecast dates, expected capability delivery performance and future risks.⁸ Accordingly, the Auditor-General's *Independent Assurance Report* does not provide any assurance in relation to this information. However, material inconsistencies identified in relation to this information are considered in forming the Auditor-General's conclusion. These exclusions to the scope of the review are due to a lack of Defence systems from which to provide complete and accurate evidence⁹ in a sufficiently timely manner to facilitate the review. This has been an area of focus of the JCPAA over a number of years¹⁰, and it is intended that all components of the PDSSs will eventually be included within the scope of the ANAO's review.

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

14. Defence also provides additional insights and context in: its commentary and analysis contained in **Part 2** of the MPR; and information on significant events occurring post 30 June 2021 in the *Statement by the Secretary of Defence* contained in **Part 3** of the MPR. This commentary and analysis is not included in the scope of the ANAO's review.

Overall outcomes of the review

Auditor-General's summary conclusion

15. The Auditor-General has concluded in the *Independent Assurance Report* for 2020–21 that 'nothing has come to my attention that causes me to believe that the information in the 21 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 *2020–21 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.'

Statement by the Secretary of Defence

16. The *Statement by the Secretary of Defence* was signed on 2 December 2021. The Secretary's statement provides his opinion that the PDSSs for the 21 selected projects 'comply in all material respects with the Guidelines and reflect the status of the projects as at 30 June 2021'.

17. In addition, the *Statement by the Secretary of Defence* details significant events occurring post 30 June 2021, which materially impact the projects included in the report, and which should be read in conjunction with the individual PDSSs. The *Statement* includes information on: Joint Strike Fighter, Future Frigates, Future Subs, MRH90 Helicopters, Offshore Patrol Vessel, Repl

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

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

Replenishment Ships, Battle Comm. Sys. (Land) 2B, Maritime Comms, ANZAC Air Search Radar Repl and UHF SATCOM.¹¹

Summary of key observations from the ANAO's review

18. The ANAO's review (found in **Part 1** of this report) includes Defence's project management and reporting arrangements contributing to the overall governance of the Major Projects. A summary of key observations is provided below.

Status of JCPAA recommendations and requests

- Following JCPAA recommendations made in May 2014 and May 2016¹², Defence is yet to implement a system of materiel capability delivery performance/scope reporting, with a robust methodology applicable to materiel acquisition (see paragraphs 2.63 to 2.68).
- Following a JCPAA recommendation made in September 2018¹³, Defence advised the Committee in May 2020 that Predict! was the mandated risk management system.¹⁴ Defence advised the ANAO in October 2021 that Defence's policy was updated in August 2021 to reflect that risks must be recorded in Predict!, although this is yet to be applied consistently across all projects (see paragraphs 1.76 to 1.80).
- Following a JCPAA request made in 2018¹⁵ 'on how Defence major project cost variations and the costs of retaining project staff over time might be reported annually in future Major Projects Reports', Defence advised that it is not yet in a position to provide the staff cost component of projects and its systems are not capable of calculating the cost of retaining project staff over time (see paragraphs 1.64 to 1.67).

Status of Auditor-General report recommendations

- Auditor-General Report No.34 2020–21 *Implementation of ANAO and Parliamentary Committee Recommendations — Department of Defence* tabled in April 2021 and included an assessment of four recommendations relevant to the MPR.¹⁶ Of these, one was assessed as implemented, one was largely implemented, and two were not implemented.

11 The 2020–21 MPR Guidelines also require Defence to report, in the *Statement by the Secretary of Defence*, on projects which have been removed from the MPR which still have outstanding caveats, significant remaining materiel capability or milestones to be delivered. Defence has reported updates for AWD Ships, P-8A Poseidon, Growler, MH-60R Seahawk, LHD Ships, HATS, Night Fighting Equip Repl and Collins R&S.

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

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

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

14 Department of Defence, written supplementary submission 7 to the Joint Committee of Public Accounts and Audit, Inquiry into the 2018–19 Major Projects Report and Future Submarines Project – Transition to Design, p.11.

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

16 Auditor-General Report No.34 2020–21, *Implementation of ANAO and Parliamentary Committee Recommendations – Department of Defence*, (2021), Table 3.3.

- In July 2020 Defence closed both recommendations from Auditor-General Report No.31 2018–19 *Defence's Management of its Projects of Concern*. The ANAO assessed these recommendations as not implemented (see paragraphs 1.19 to 1.21).¹⁷
- Defence closed Recommendation No.1 from Auditor-General Report No.3 2019–20 *Defence's Quarterly Performance Report on Acquisition and Sustainment* in March 2020, and this was considered in Auditor-General Report No.19 2019–20 *Major Projects Report*.¹⁸ The ANAO assessed this recommendation as implemented (see paragraphs 1.27 to 1.28).¹⁹
- Recommendation No.1 from Auditor-General Report No.40 2018–19 *Modernising Army Command and Control — the Land 200 Program* was assessed as largely implemented.²⁰
- Other relevant ANAO audits tabled in 2020–21 include: Auditor-General Report No.18 2020–21 *Defence's Procurement of Combat Reconnaissance Vehicles (LAND 400 Phase 2)* and Auditor-General Report No.12 2020–21 *Defence's Procurement of Offshore Patrol Vessels SEA 1180 Phase 1*. These audits included recommendations for improvement in Defence Independent Assurance Review processes. The Defence Audit and Risk Committee has accepted closure of the two recommendations from Auditor-General Report No.12 2020–21 *Defence's Procurement of Offshore Patrol Vessels SEA 1180 Phase 1*. Reporting is yet to be provided to the Committee on the recommendation in Auditor-General Report No.18 of 2020–21 *Defence's Procurement of Combat Reconnaissance Vehicles (LAND 400 Phase 2)* (see paragraphs 1.14 to 1.17).

Defence acquisition governance

19. In the course of its review of the PDSSs, the ANAO considered:

- Defence's system for reporting on the status of acquisition projects through the Independent Assurance Review (IAR) process. Fifteen of the 21 projects included in this report had an IAR conducted during 2020–21²¹ (see paragraphs 1.11 to 1.13).
- Defence's approach to entry and exit from the Projects of Interest and Projects of Concern lists (see paragraphs 1.18 to 1.23).
- The reporting provided to senior stakeholders within government and Defence with insight into the delivery of capability to the Australian Defence Force. The ANAO observed a gap in reporting activity (see paragraphs 1.26 to 1.33).

17 Auditor-General Report No.34 2020–21, *Implementation of ANAO and Parliamentary Committee Recommendations — Department of Defence*, (2021). Table 3.3 contained information on the implementation of Recommendations 1 and 2 of Auditor-General Report No.31 2018–19 *Defence's Management of its Projects of Concern*.

18 Auditor-General Report No.19 of 2019–20 *Major Projects Report*, 2020 p.23.

19 Auditor-General Report No.34 of 2020–21, *Implementation of ANAO and Parliamentary Committee Recommendations — Department of Defence*, (2021), Table 3.3 [Recommendation 1 of Auditor-General Report No.3 of 2019–20 *Defence's Quarterly Performance Report on Acquisition and Sustainment*].

20 *ibid*, Table 3.3 [Recommendation 1 of Auditor-General Report No.40 of 2018–19 *Modernising Army Command and Control — the Land 200 Program*].

21 Independent Assurance Reviews were not conducted for: Joint Strike Fighter, Future Subs, Hawkei, JORN Upgrade, Maritime Comms, and UHF SATCOM.

- The importance of capturing government decisions in internal Defence documentation and ensuring that Materiel Acquisition Agreements are appropriately aligned with these decisions (see paragraphs 1.36 to 1.42).
- Defence's implementation of the Smart Buyer Framework to support strategic decision making in the acquisition of major projects. The framework was not utilised at the Second Pass government approval stage for projects in the current MPR (see paragraphs 1.43 to 1.44).
- Implementation of new business systems to report on the status of acquisition projects (see paragraphs 1.45 to 1.48).
- Projects' use of contingency funds (see paragraphs 1.56 to 1.60). Two projects in the MPR, MRH90 Helicopters and Battle Comm. Sys. (Land) 2B, committed contingency funds in 2020–21. The MRH90 Helicopters project committed \$34.4 million of contingency funds to manage supportability and performance risks. The Battle Comm. Sys. (Land) 2B project used \$30.3 million of contingency funds to address delayed delivery and refinement of specifications.
- The status of CASG's Risk Management Reform Program (initiated by the Deputy Secretary CASG in 2017) and establishment of the CASG Risk Management Framework (see paragraphs 1.68 to 1.80).
- A number of projects had not fully met the requirements of Defence's Project Risk Management Manual Version 2.5 (PRMM V2.5) in relation to contingency allocation (see paragraph 1.60) and risk management (see paragraph 1.74).
- Defence updated its policy on Lessons Learned in May 2020 but is yet to fully implement the policy, including compliance monitoring arrangements (see paragraphs 1.81 to 1.83).
- Defence has not defined in its internal policies and procedures the terms 'caveat' or 'deficiency' relating to the declaration of significant capability milestones. The ANAO has continued to observe the use of these terms by Defence to represent exceptions to the achievement of significant milestones (see paragraphs 1.84 to 1.86).

ANAO analysis of project performance

20. In addition to its limited assurance review, the ANAO has undertaken an analysis of key elements of the Defence PDSSs — relating to cost, schedule, progress towards delivery of required capability, and risks and issues. The ANAO has also undertaken longitudinal analysis across these key elements of projects.

Cost

21. 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 \$58.0 billion, the MRH90 Helicopters and Battle Comm. Sys. (Land) 2B projects were required to draw upon contingency funds to complete project activities.

22. The total approved budget for Major Projects included in this MPR has increased by \$18.3 billion (33 per cent) since initial Second Pass Approval by government.

23. Budget variations greater than \$500 million are detailed in Table 2, on p.11.²²
24. As the MPR predominantly focuses on the approved capital budget for acquisition, the ongoing costs of Project Offices²³, training, replacement capability, etc., are not reported here.

22 The individual PDSSs also report on budget variations.

23 The JCPAA requested in May 2018 that the ANAO report back to the Committee on how Defence Major Projects cost variations and the costs of retaining project staff over time might be reported in future MPRs. See paragraphs 1.64 to 1.67 for the outcomes of this consideration.

Table 2: Budget variations over \$500 million — post initial Second Pass approval by variation type^{1,2}

Project	Variation	Explanation	Year	Amount \$bn
Scope Increases				13.9
MRH90 Helicopters		34 additional aircraft at Phase 4/6 Second Pass Approval	2005–06	2.3
Joint Strike Fighter		58 additional aircraft at Stage 2 Second Pass Approval	2013–14	10.5
MQ-4C Triton		Second Pass Approval – Tranche 2 (one additional aircraft), Tranche 3 (one additional aircraft) and Tranche 4 (sustainment funding for first 7 years).	2019–20 2020–21	1.1
Real Cost Increases				0.7
Overlander Medium/Heavy		Project supplementation ³ (\$684.2m) and additional vehicles, trailers and equipment (\$28.0m) at Revised Second Pass Approval	2013–14	0.7
Other budget movements				0.7
Other	Scope increase/budget transfers (net)	Other scope changes and transfers	Various	0.7
Price Indexation – materials and labour (net) (to July 2010) ⁴				1.0
Exchange Variation – foreign exchange (net) (to 30 June 2021)				1.9
Total				18.2⁵

Note 1: For the variations related to all projects and their value, refer to Table 8 on pp.42–45 of this report. For the breakdown of in-year variation, refer to Table 9 on p.47 of this report.

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

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

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

Note 5: Figures do not add precisely due to rounding. The total is \$18.3bn.

Source: ANAO analysis of the 2020–21 PDSSs.

Schedule

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

26. Total schedule slippage²⁴ for the Major Projects, as at 30 June 2021, was 405 months when compared to the initial schedule. This represents a 23 per cent increase since Second Pass approval.

27. Across MPR projects that have experienced slippage — comprising 10 of the 19 projects with approved dates for Final Operational Capability (FOC)²⁵ — the average slippage is 40 months (3.38 years).

28. Table 3, on p.13, includes details of in-year and total schedule slippage by project. The table shows an increase of 73 months of in-year slippage during 2020–21.

29. The total slippage of 405 months in 2020–21 is 102 months lower than the total in 2019–20 of 507 months. This is due to:

- the exclusion of projects which have exited the MPR (AWD Ships, P-8A Poseidon, Growler, and Collins R&S), removing 175 months of slippage from the total reported in 2019–20 (see Table 4); and
- the increase of 73 months of in-year slippage described above.

24 Slippage refers to a delay in the current forecast date compared to the original government approved date of Final Operational Capability (FOC). These figures exclude delays to a project's schedule that do not result in slippage past the original government approved date, and schedule reductions over the life of the project.

25 Future Frigates and Future Subs are excluded as these projects did not have FOC milestones approved by government at 30 June 2021. Refer to the *Statement by the Secretary of Defence* for further details on these projects.

Table 3: Schedule slippage from original planned Final Operational Capability¹

Project	In-year (months)	Total (months)	Project	In-year (months)	Total (months)
Joint Strike Fighter ²	0	0	MQ-4C Triton ²	24	67
Future Frigates ^{2,3}	N/A	N/A	Repl Replenishment Ships	0	0
Future Subs ³	N/A	N/A	CMATS ^{2,5}	13	47
Combat Recon. Vehicles	0	0	Battlefield Command System ²	0	16
MRH90 Helicopters ²	6	95	Battle Comm. Sys. (Land) 2B	12	36
Offshore Patrol Vessel	0	0	Collins Comms and EW	0	30
Overlander Medium/Heavy	0	0	Pacific Patrol Boat Repl	0	2
Hawkei ²	0	0	Maritime Comms	0	16
Light Tactical Fixed Wing ^{2,4}	18	54	ANZAC Air Search Radar Repl	0	0
SRGB Air Defence	0	0	UHF SATCOM ²	0	42
JORN Upgrade ^{2,5}	N/A	N/A			
Total			Total (months)	73	405
			Total (per cent)	5	23

Note 1: Slippage refers to a delay in the current forecast date compared to the original government approved date of FOC. These figures exclude delays to a project's schedule that do not result in slippage past the original government approved date, and schedule reductions over the life of the project.

Note 2: These projects have been identified by Defence as Projects of Interest (see paragraph 1.33).

Note 3: These projects' FOC milestones had not been approved by government at 30 June 2021.

Note 4: Light Tactical Fixed Wing was previously called Battlefield Airlifter.

Note 5: These projects' FOC forecasts are reported in their PDSSs as 'TBA'. The delays are anticipated to be several years.

Source: ANAO analysis of the 2020–21 PDSSs.

30. Platform availability has contributed to the slippage experienced within some projects. For example, Maritime Comms and Collins Comms and EW have been impacted by changes to docking schedules of the ANZAC Class frigates and Collins Class submarines respectively.

31. Significant delays have also been experienced by projects with the most developmental content: MRH90 Helicopters, MQ-4C Triton, CMATS, and Battle Comm. Sys. (Land) 2B.

32. Table 4, on p.14, provides details of schedule slippage for projects which have exited the MPR. Compared to the 405 months total schedule slippage for the current 19 Major Projects with approved FOC milestones²⁶, the 33 projects which have exited the MPR²⁷ have reported accumulated schedule slippage of 1321 months, as at their respective exit dates.

26 Future Frigates and Future Subs are excluded from this analysis as they did not have FOC milestones approved by government at 30 June 2021.

27 Hornet Refurb and BMS are excluded from this analysis as they did not have FOC milestones approved by government.

33. Table 4 indicates that schedule slippage for projects which have exited the MPR was more pronounced in projects with the most developmental content.

Table 4: Schedule slippage for projects which have exited the MPR¹

Project	Total (months)	Project	Total (months)
AWD Ships (Australianised MOTS)	37	Additional Chinook (MOTS)	6
P-8A Poseidon (MOTS)	29	HF Modernisation (Developmental)	136
Wedgetail (Developmental)	77	Armadales (Australianised MOTS)	43
Super Hornet (MOTS)	0	HATS (Australianised MOTS)	0
Growler (Australianised MOTS)	1	Collins RCS (Australianised MOTS)	107
MH-60R Seahawk (MOTS)	0	Night Fighting Equip Repl (MOTS)	0
LHD Ships (Australianised MOTS)	37	Collins R&S (Australianised MOTS)	108
Hornet Upgrade (Australianised MOTS)	39	Battle Comm. Sys. (Land) 2A (MOTS)	39
ARH Tiger Helicopter (Australianised MOTS)	82	Hw Torpedo (MOTS)	61
C-17 Heavy Airlift (MOTS)	0	SM-2 Missile (Australianised MOTS)	26
Air to Air Refuel (Developmental)	64	ANZAC ASMD 2A (Australianised MOTS)	80
FFG Upgrade (Developmental)	132	155mm Howitzer (MOTS)	7
Bushmaster Vehicles (Australianised MOTS)	1	Stand Off Weapon (Australianised MOTS)	37
Overlander Light (Australianised MOTS)	4	Battle Comm. Sys. (Australianised MOTS)	24
Additional MRTT (Australianised MOTS)	21	C-RAM (MOTS)	2
Next Gen Satellite (MOTS) ²	0	LHD Landing Craft (Australianised MOTS)	46
ANZAC ASMD 2B (Developmental)	75		
Total		1321	

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

Note 2: Next Gen Satellite shows slippage in Figure 7a, on p.59, 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 Major Projects Reports and ANAO analysis.

34. Additional ANAO analysis (refer to Figure 6, p.58) has compared project slippage against the Acquisition Type of projects — that is, Defence's classification of projects as Military Off-The-Shelf (MOTS)²⁸, Australianised MOTS or developmental. These classifications are a general indicator of the difficulty associated with the procurement process.

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, *Defence Test and Evaluation Policy*, Defence, Canberra, 2019, Annex 1A, Definitions, p.ii.

35. Figures 7a and 7b (pp.59–60) provide 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. Prima facie, the more developmental in nature a project is, the more likely it will result in a greater degree of project slippage. The data in Figures 7a and 7b was requested by the JCPAA in May 2014.²⁹

36. In this MPR, additional ANAO analysis has been included in relation to the Acquisition Categorisation (ACAT) level³⁰, due to the removal of reporting against the Acquisition Type of projects in the PDSSs (see Figures 8, 9a and 9b on pp.61–63).

37. Additional reporting against the ACAT level has identified that there has been an increase of projects at the ACAT I³¹ and ACAT II³² levels, and that ACAT I projects currently in the MPR are reporting significantly more slippage to FOC than ACAT II projects (Figure 8, on p.61). ACAT I projects carry a higher level of technical risk.

38. Longitudinal analysis indicates that while the reasons for schedule slippage vary, it primarily reflects the underestimation of both the scope and complexity of work, particularly for Australianised MOTS and developmental projects (see paragraphs 2.34 to 2.35).

Capability

39. The third principal component of project performance examined in this report is progress towards the delivery of capability approved 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 ANAO analysis to provide an overall perspective of the three principal components of project performance.

40. The Defence PDSSs report that 17 projects in this year's report will deliver all of their key capability requirements. Two projects, Light Tactical Fixed Wing³³ and Battlefield Command System, report that they are unable to deliver all of the required capability by FOC. Two PDSSs (Future Frigates and Future Subs) do not include this reporting, as the projects did not have approved materiel capability to be delivered at 30 June 2021.

41. Defence's assessment indicates that some elements of capability to be delivered by projects may be 'under threat', but the risk is assessed as 'manageable'. The four project offices experiencing challenges with expected capability delivery (2019–20: five) are Joint Strike Fighter, MRH90 Helicopters, Overlander Medium/Heavy, and Battle Comm. Sys. (Land) 2B.

42. Table 5, on p.16, summarises expected capability delivery as at 30 June 2021, as reported by Defence.

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

30 Defence projects are graded into one of four acquisition categories (ACATs) on the basis of project complexity. The complexity of a project may vary over its life cycle. See paragraph 2.23.

31 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.

32 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.

33 The previous project name was Battlefield Airlifter.

Table 5: Capability delivery

Expected Capability (Defence Reporting)	2018–19 MPR (%)	2019–20 MPR (%)	2020–21 MPR (%)
High Confidence (Green)	98	98	97
Under Threat, considered manageable (Amber)	2	2	2
Unlikely (Red)	0 ¹	0 ¹	1
Total	100	100	100

Note 1: Defence advised in these years that AWD Ships would not deliver one element of capability at FOC (which equated to approximately one per cent). However, across all the Major Projects this percentage rounded to zero per cent.

Source: PDSSs in Major Projects Reports and ANAO analysis.

43. In addition to reporting on expected capability delivery, Defence has continued the practice of including in the PDSSs declassified information on contractual remedies for projects, including stop payments and liquidated damages. During 2020–21 Battlefield Command System negotiated contractual remedies involving stop payments, and Hawkei received \$6.2 million in liquidated damages via a Contract Change Proposal.

Summary longitudinal analysis

44. Table 6, on p.17, 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.

Table 6: Summary longitudinal analysis¹

	2018–19 MPR	2019–20 MPR	2020–21 MPR
Number of Projects	26	25	21
Total Approved Budget at 30 June	\$64.1 bn	\$78.7 bn	\$58.0 bn
Total Approved Budget at final Second Pass Approval	\$53.9 bn	\$68.9 bn	\$54.2 bn
Total Expenditure Against Total Approved Budget	\$36.3 bn (56.6%)	\$38.9 bn (49.4%)	\$28.1 bn (48.4%)
Total In-year Expenditure Against In-year Budget	\$4.8 bn (93.4%)	\$5.7 bn (92.5%)	\$6.1 bn (98.4%)
Total Budget Variation since initial Second Pass Approval ²	\$24.4 bn (38.0%)	\$24.2 bn (30.7%)	\$18.3 bn (31.5%)
Total Budget Variation since final Second Pass Approval ³	\$10.2 bn (15.9%)	\$9.8 bn (12.5%)	\$3.8 bn (6.7%)
In-year Approved Budget Variation	\$1.2 bn (1.9%)	\$0.1 bn (0.1%)	-\$1.0 bn (-1.7%)
Total Schedule Slippage ⁴	651 months (25%)	507 months (21%)	405 months (22%)
Average Schedule Slippage across Projects ^{4a}	25 months	22 months	23 months
In-year Schedule Slippage	92 months (4%)	68 months (3%)	73 months (4%)
Total Reported Risks and Issues ^{5, 6}	138	142	119
Expected Capability (Defence Reporting) ⁷			
• High level of confidence of delivery (Green)	98%	98%	97%
• Under threat, considered manageable (Amber)	2%	2%	2%
• Unlikely to be met (Red)	0% ⁸	0% ⁸	1%

Refer to paragraphs 19 to 42 in **Part 1** of this report.

Note 1: The data for the 21 Major Projects in the 2020–21 MPR compares the data from projects in the 2019–20 MPR and 2018–19 MPR. The Major Projects included within each MPR are based on entry and exit criteria in the Guidelines, which have been included in **Part 4** of this report. The entry and exit of projects should be considered when comparing data across years.

Note 2: Where a project has multiple Second Pass Approvals, the MPR has historically reported budget variations from the initial Second Pass Approval. The figures in this row are consistent with prior year reporting. See Table 2 for a breakdown of the major components of this variance, and Table 8 on pp.42–45 for all real variations.

Note 3: Where a project has multiple Second Pass Approvals, the budget at Second Pass Approval reported in the Header refers to the total budget as at the final Second Pass Approval. The figures in this row use this methodology.

Note 4: Slippage refers to a delay in the current forecast date compared to the original government approved date of FOC. Slippage can occur due to late delivery, increases in scope or at times can be a deliberate management decision.

Note 4a: As shown in Table 3 on p.13 and Table 11 on p.68 of this report, for the ten 2020–21 major projects which have experienced slippage, the range is 2 to 95 months of total slippage.

Note 5: 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 6: 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 7: These figures represent the average predicted capability delivery across all of the Major Projects. This method reduces the effect of any individual project's size on the aggregate figure. Previously, these figures were

calculated based on the number of distinct capability measures defined by each project and therefore projects with more capability measures had more of an effect on the aggregate figure.

Note 8: Defence advised in these years that AWD Ships would not deliver one element of capability at FOC (which equated to approximately one per cent). However, across all the Major Projects this percentage rounded to zero per cent.

Impact of COVID-19 on the selected Major Projects

45. Sixteen of the 21 Major Projects reported in their PDSS that they experienced an impact as a result of the COVID-19 pandemic.³⁴ Of these 16 projects, six reported impacts across multiple areas.

Cost / budget

46. Six projects reported an impact on project budget as a result of the COVID-19 pandemic. These six projects experienced an underspend, citing varying reasons for this (delay to training and support, overseas suppliers, shipyard closures and international travel restrictions). One of these projects has highlighted an impact to the budget as an emerging issue.

Schedule

47. The 16 projects that reported an impact on scheduling as a result of the COVID-19 pandemic included factors relating to:

- supplier disruption (supplier production and/or shipping delays);
- workforce limitations relating to travel (specialists and crew were due to travel both interstate and from other countries to work with/on the projects or to deliver/undertake training) and social distancing restrictions; and/or
- contractor delays (scope, delivery and certification delays).

Capability

48. No projects reported an impact to capability delivery as a result of the COVID-19 pandemic.

34 Further information on COVID-19 impacts is reported in the *Statement by the Secretary of Defence*.

1. The Major Projects Review

1.1 This chapter provides the Australian National Audit Office's (ANAO) overview of the scope and approach adopted for its limited assurance review of the 21 Project Data Summary Sheets (PDSSs) prepared by the Department of Defence (Defence) for this year's Major Projects Report (MPR). The chapter also includes information and commentary on developments in Defence's acquisition governance processes, based on the ANAO's review.

Review scope and approach

1.2 In 2012 the Parliament's Joint Committee of Public Accounts and Audit (JCPAA) identified the ANAO's review of Defence PDSSs as a **priority assurance review**, under subsection 19A(5) of the *Auditor-General Act 1997* (the Act). This provided the ANAO with full access to the information gathering powers under the Act. The ANAO's review of the individual PDSSs, which are included in **Part 3** of the MPR, was conducted in accordance with the auditing standards set by the Auditor-General under section 24 of the Act through the 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 provided by Defence 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 evidence³⁵, 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 Auditor-General's conclusion.

1.4 The ANAO's work is appropriate for the purpose of providing an *Independent Assurance Report* in accordance with the *ANAO Auditing Standards*. However, the review of individual PDSSs is based on a limited assurance approach and is not as extensive as individual performance audits 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 21 major Defence equipment acquisition projects (Major Projects), is less than that provided by the ANAO's program of performance and financial statement audits.

1.5 Separately, the ANAO reviews developments in Defence's acquisition governance processes (information and commentary on governance issues appears in this chapter) and undertakes analysis of key elements of the PDSSs (information and commentary on systemic issues and longitudinal analysis for the 21 projects reviewed appears in the next chapter).

35 For example, Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 473: Defence Major Projects Report (2016–17)*, (2018), Recommendation 2, p.vii, which recommended transitioning to risk registers with better version control measures than spreadsheets. Defence has mandated the risk management tool Predict! for all projects in this report, the implementation of which is discussed at paragraph 1.71.

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

Review methodology

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

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

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

- developments in acquisition governance (see paragraphs 1.10 to 1.48, below);
- the financial framework, particularly as it applies to the project financial assurance and contingency statements (see Section 2 of the PDSSs);
- schedule management and test and evaluation processes (see Section 3 of the PDSSs);
- materiel capability / scope delivery forecast 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 (see Section 4 of the PDSSs);
- changes due to Defence's reform of the Defence Enterprise Risk Management Framework, and the completeness and accuracy of major risk and issue data (see Section 5 of the PDSSs); and
- the impact of acquisition issues on sustainment to ensure the PDSS is a complete and accurate representation of the acquisition project.

1.9 This review activity informed the ANAO's understanding of the systems and processes supporting the PDSSs for the 2020–21 review period. It also highlighted issues in those systems and processes that warrant attention.

Acquisition governance

1.10 Consistent with previous years, the ANAO considered Defence's Major Project acquisition governance processes when planning and conducting the review for the 2020–21 MPR. While some of these processes are now established, others continue to mature or require further development to achieve their intended impact.

Defence Independent Assurance Reviews

1.11 The Defence Independent Assurance Review (IAR) process provides the Defence Senior Executive with assurance that projects and products will deliver approved objectives and are prepared to progress to the next stage of activity. These management-initiated reviews consider a project's status while sufficient time remains for corrective action to be implemented.^{36,37}

1.12 IARs are intended to commence at project initiation and are conducted through to FOC; for higher-complexity projects, ideally on an annual basis. They are an important input to key acquisition and sustainment decision points or milestones.³⁸

1.13 Fifteen of the 21 Major Projects had an IAR conducted during 2020–21³⁹, which formed key evidence for the ANAO's review.

1.14 The ANAO recently published two performance audit reports which recommended improvements in Defence IAR processes.

1.15 Auditor-General Report No.12 2020–21 *Defence's Procurement of Offshore Patrol Vessels — SEA 1180 Phase 1* made two recommendations: that Defence plan the sequencing of IAR activity undertaken during a platform selection process in order to avoid conflicts with other processes and to ensure access to all relevant information; and that Defence maintain Commonwealth records, document and retain all evidence and advice regarding its decision-making in procurement.

1.16 Auditor-General Report No.18 2020–21 *Defence's Procurement of Combat Reconnaissance Vehicles (LAND 400 Phase 2)* included a recommendation that Defence should review the process in place to provide assurance to its senior leadership that agreed IAR recommendations have been implemented appropriately and in a timely manner.

1.17 The assessment of whether these recommendations have been implemented by Defence is outside the scope of this review. The Defence Audit and Risk Committee has accepted closure of

36 Department of Defence, *Independent Assurance Reviews for Programs, Projects and Products*, Defence, Canberra, 2020, pp.5 and 12.

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

38 Department of Defence, *Independent Assurance Reviews for Programs, Projects and Products*, Defence, Canberra, 2020.

39 IARs were not conducted for: Future Subs, Overlander Medium/Heavy, Hawkei, JORN Upgrade, Maritime Comms, and UHF SATCOM.

the two recommendations from Auditor-General Report No.12 of 2020–21 *Defence's Procurement of Offshore Patrol Vessels — SEA 1180 Phase 1*. Reporting is yet to be provided to the Committee on the status of the recommendation in Auditor-General Report No.18 of 2020–21 *Defence's Procurement of Combat Reconnaissance Vehicles (LAND 400 Phase 2)*.

Projects of Concern

1.18 The Projects of Concern process is intended to focus the attention of the highest levels of government, Defence and industry on remediating problem projects.⁴⁰ As at 30 June 2021, one MPR project, MRH90 Helicopters, was a continuing Project of Concern. The project was placed on the list in November 2011 due to contractor performance relating to significant technical issues preventing the achievement of milestones on schedule.⁴¹ The project has progressed the materiel capability delivery relating to the Taipan Gun Mount, Aero-Medical Evacuation Equipment and the Common Mission Management System.⁴² FOC is scheduled for June 2022, six months later than stated last year. In October 2021, it was reported that Navy may replace its six MRH90 Helicopters with 12 additional Seahawk helicopters.⁴³ Defence advised the ANAO in November 2021 that while the United States Government had approved the sale of MH-60R helicopters to Australia, the Australian Government had not yet approved the purchase.

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

- Recommendation No.1: Defence introduce, as part of its formal policy and procedures, a consistent approach to managing entry to, and exit from, its Projects of Interest and Projects of Concern lists. This should reflect Defence's risk appetite and be made consistent with the new Capability Acquisition and Sustainment Group Risk Model and other, Defence-wide, frameworks for managing risk. To aid transparency, the policy and the list should be made public.
- Recommendation No.2: Defence evaluates its Projects of Concern regime.⁴⁴

40 Department of Defence, *Defence Annual Report 2020–21*, Chapter 7, Asset Management, Defence, Canberra, 2021, p.153.

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

42 See the MRH90 Helicopters PDSS in **Part 3** of this report.

43 A Greene, *Australia to buy \$1.3 billion fleet of US-made choppers as navy dumps troubled European-made MRH-90 Taipans* – [internet], ABC News, available from <https://www.abc.net.au/news/2021-10-09/us-to-sell-12-attack-helicopters-to-australia-ukus-/100526744> [accessed 22 October 2021]. Media reports were based on an 8 October 2021 announcement by the United States Defense Security Cooperation Agency that 'The State Department has made a determination approving a possible Foreign Military Sale to the Government of Australia of MH-60R Multi-Mission Helicopters, Related Defense Services, and related equipment for an estimated cost of \$985 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.' Media release, Washington, 8 October 2021 [internet], available from <https://www.dsca.mil/press/1/media/major-arms-sales/australia-mh-60r-multi-mission-helicopters-and-related-defense> [accessed 28 November 2021].

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

1.20 In July 2020 Defence closed both these recommendations, advising that the Capability Acquisition and Sustainment Group (CASG) had developed a consistent approach to entry and exit from the Projects of Interest and Projects of Concern lists; that the Projects of Concern list was publicly available; and that CASG had evaluated the Projects of Concern regime and had effective assurance mechanisms in place, underpinned by IARs.⁴⁵

1.21 Auditor-General Report No.34 2020–21 *Implementation of ANAO and Parliamentary Committee Recommendations — Department of Defence* concluded that the two recommendations relating to the management of Projects of Concern had not been implemented. The ANAO reported that there was no evidence that Defence established a clear basis or criteria to ensure a consistent approach to entry to and exit from the Projects of Concern or Projects of Interest lists, and that no evidence of an evaluation was provided to the ANAO.⁴⁶

1.22 At the JCPAA's September 2021 hearings on the 2019–20 Major Projects Report, the Deputy Secretary CASG stated that:

We are working to improve the way in which we're able to measure the underperforming projects. Invariably, it's data driven quite easily on cost and schedule against the documented milestones and loaded milestones and then the capability a little more to that. As we develop up the program report or the project and sustainment report that we're doing to supplement the sequencing in between portfolio budget statements, portfolio additional estimates statements and from this major projects report itself, we will continue to mature that by feeding in capability manager assessments and information. That's important because, ultimately, they are the first principles responsible for the capability delivery and we are the delivery agency but the operational effect is through the capability manager.⁴⁷

1.23 The ANAO noted during the preparation of the 2020–21 MPR that the Future Subs project was not listed as a Project of Concern or a Project of Interest.

1.24 The Future Subs project was included for the first time in the 2019–20 MPR. Since its entry to the MPR, the Future Subs PDSS has included a risk in Section 5.1 that: 'There is a risk that our Program Partners will not adequately address issues and challenges (including technical risks) that arise during the course of the Program'.⁴⁸ Defence reported that this risk was being remediated as follows: 'Contracted requirements exist on Program performance, behaviours and expectations and are supported by: ongoing engagement with CEO's; bilateral and tripartite governance arrangements; and ongoing independent critical peer review by the Naval Shipbuilding Advisory Board and Submarine Advisory Committee.' The ANAO was advised by Defence in 2020–21 that the Future Subs project was not considered as a candidate for inclusion as a Project of Concern or Interest because it was already subject to the most senior levels of governance and scrutiny. Defence further advised that this included more frequent reporting to ministers and government,

45 This advice was reported in Auditor-General Report No.19 2020–21 *2019–20 Major Projects Report*, paragraph 1.16.

46 Auditor-General Report No.34 2020–21 *Implementation of ANAO and Parliamentary Committee Recommendations — Department of Defence*, p.7.

47 Committee Hansard, JCPAA inquiry into Auditor-General's report No.19 (2020–21) Defence Major Projects Report 2019 - 20, [internet] p.13. Available from: https://parlinfo.aph.gov.au/parlInfo/search/display/display_w3p;query=Id%3A%22committees%2Fcommint%2F473b6942-9139-484d-bd6b-02778e98efc5%2F0000%22 [accessed 29 November 2021].

48 Auditor-General Report No.19 2020–21 *2019–20 Major Projects Report*, p.166.

which Defence advised was effectively consistent with the reporting expectations of a Project of Concern or Interest even if the project was not formally included in that framework.

1.25 On 16 September 2021 the Australian Government announced a change in strategic direction for the Future Subs project, stating that: 'The pursuit of nuclear-powered submarine technology means that Australia will no longer proceed with the Attack class conventional submarine program with Naval Group'.⁴⁹

Quarterly Performance Report and Project and Sustainment Report

1.26 The aim of the Capability Acquisition and Sustainment Quarterly Performance Report (QPR) was to provide senior stakeholders within government and Defence with insight into the delivery of capability to the Australian Defence Force.⁵⁰ The report was provided to the Minister for Defence and the Minister for Defence Industry on a quarterly basis.⁵¹

1.27 In July 2019, the ANAO completed an audit on the effectiveness of the QPR in providing senior stakeholders with accurate and timely information on the status of projects and emerging risks and issues. It found the June 2018 QPR, reviewed by the ANAO, to be largely effective, contained mostly accurate information, and was valued by senior stakeholders.⁵² The ANAO recommended that Defence improve the QPR as a tool for senior leaders by reporting on:

- (a) trend performance data for sustainment products; and
- (b) emerging candidates for the Projects/Products of Concern list and Products/Projects of Interest list that have been recommended by an Independent Assurance Review or which are under active consideration by senior management.⁵³

1.28 During its review for the 2018–19 MPR, the ANAO observed that Defence's June 2019 QPR reported on both improved and deteriorated performance for both acquisition and sustainment products since the previous QPR. This reflected a change in trend reporting consistent with the agreed ANAO recommendation. Additionally, the ANAO observed that Defence's June 2019 QPR reported the emerging candidates for the Projects/Products of Concern list and Products/Projects of Interest list which had been recommended either by an IAR or which were under active consideration. This change was also consistent with the agreed ANAO recommendation.⁵⁴ Defence closed this recommendation in March 2020.⁵⁵

1.29 CASG ceased producing QPRs after June 2020, with the report superseded in February 2021 by the Project and Sustainment Report (PSR). For the 2020–21 MPR review, the ANAO examined the February 2021 PSR as part of the procedures for its limited assurance review of Defence's

49 S Morrison (Prime Minister), 'Australia to pursue nuclear-powered submarines through new trilateral enhanced security partnership' media statement, Parliament House, Canberra, 16 September 2021.

50 Department of Defence, *Quarterly Performance Report June 2020*, Defence, Canberra, 2020, p.5.

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

52 *ibid*, pp.7-8.

53 *ibid*, p.7.

54 Auditor-General Report No.19 2018–19 *2019–20 Major Projects Report*, paragraphs 1.20–1.21, p.23.

55 In Auditor-General Report No.34 2020–21 *Implementation of ANAO and Parliamentary Committee Recommendations — Department of Defence*, Recommendation 1 relating to the use of the QPR was assessed as: implementation was completed in line with the intent of the recommendation.

PDSSs.⁵⁶ The February 2021 PSR covered the reporting period since the last QPR in June 2020, and contained detailed reporting on Projects/Products of Concern and Projects/Products of Interest, information on reform and governance activities, significant events, Domain overviews and performance analysis and trends comparing data to previous reporting periods, and indicative overviews of Defence's Top 30 acquisition and sustainment projects.

1.30 During Budget Estimates hearings held on 1 June 2021, the Deputy Secretary CASG stated that the PSR was anticipated to be issued on a six-monthly basis.⁵⁷

1.31 A six-month gap in reporting activity introduces a risk of diminished information being available for decision making by senior leaders. Further, compared to the QPR, the PSR contains less information on acquisition projects and sustainment products that are not classified as a Project/Product of Concern or Project/Product of Interest.

1.32 Defence advised the ANAO in September 2021 that it has 'management processes that ensure Capability Managers and Delivery groups are informing the Secretary of Defence and the Chief of Defence Force through weekly roundtable discussions and the Ministers are ... informed on pertinent issues as they arise'. Defence also advised the ANAO that the next PSR was still in development and a draft would not be ready prior to the completion of the 2020–21 MPR.

1.33 In October 2021, Defence further advised the ANAO that the PSR was only an interim report, and that a new 'Capability Report' originally intended to replace the QPR was not sufficiently mature to be implemented. The new report was yet to be named, and would not be ready before the end of 2021.

1.34 Defence's February 2021 PSR identified nine MPR projects as Projects of Interest⁵⁸:

- Joint Strike Fighter — the PSR notes that contingency plans have been enacted to counteract the impacts of COVID-19 to build capability and support systems.⁵⁹
- Future Frigates — included due to size, complexity, risk profile and media interest. The PSR notes that all scheduled activities have been progressing as planned, although some will need to be reassessed in light of COVID-19 restrictions.⁶⁰
- MQ-4C Triton — the PSR notes that the United States Navy announced a production funding suspension for its Triton program until 2023. The suspension will have capability,

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

57 Commonwealth, *Budget Estimates*, Foreign Affairs, Defence and Trade, 1 June 2021, Mr T Fraser, Deputy Secretary, Capability Acquisition and Sustainment Group, Department of Defence, p.151.

58 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, *Project and Sustainment Report February 2021*, Defence, Canberra, 2021, p.39.

59 Department of Defence, *Project and Sustainment Report February 2021*, Defence, Canberra, 2021, p.47.

60 *ibid*, p.40.

schedule and cost implications, and potential sustainment cost and capability impacts. The project is undergoing a fundamental review.⁶¹

- Hawkei — the PSR notes concerns around reliability, design and production delays, and that a brake related incident has further delayed the forecast IOC.⁶²
- Light Tactical Fixed Wing⁶³ — FOC was not met in December 2019 and the PSR notes that 'residual' activities remain outstanding, including fleet fitment and certification of Mode 5 Identification Friend or Foe and remediation of the Missile Approach Warning System. Air Force revised scope for the residual activities required to achieve FOC has been provided to government for consideration.⁶⁴
- JORN Upgrade — the PSR notes that engineering milestone delays may impact FOC.⁶⁵
- CMATS — the PSR notes some reduction of tower capability and the ongoing need for Airlines Australia to implement cost saving changes agreed with Defence.⁶⁶
- Battlefield Command System — the PSR notes schedule risks due to vehicle integration issues.⁶⁷
- UHF SATCOM — the PSR notes that the Network Control System experienced software development delays and security and integration issues.^{68,69}

1.35 These reported issues with the Projects of Interest align with the results of the ANAO's review of the relevant PDSSs. Delays to progress have impacted the delivery schedule of MQ-4C Triton, Light Tactical Fixed Wing, and CMATS during 2020–21.⁷⁰

Project Directives and Materiel Acquisition Agreements

1.36 Project Directives (previously known as Joint Project Directives) state the terms of government approval, reflecting the approved scope and timeframes for activities, responsibilities and resources allocated, and key risks and issues.⁷¹ Project Directives have historically been used to inform internal Defence documentation such as Materiel Acquisition Agreements (MAAs) between CASG and the Service Chiefs.^{72,73} Project Directives had previously been described as a key

61 *ibid.*, p.63.

62 *ibid.*, p.49.

63 Previously known as Battlefield Airlifter.

64 Department of Defence, *Project and Sustainment Report February 2021*, Defence, Canberra, 2021, p.65.

65 *ibid.*, p.61.

66 *ibid.*, p.45.

67 *ibid.*, p.47.

68 *Ibid.*, p.53.

69 In the March 2019 QPR, the entire JP2008 program was identified as a Program of Interest, which is inclusive of UHF SATCOM. Department of Defence, *Quarterly Performance Report March 2019*, Defence, Canberra, 2019, p.27.

70 The FOC dates for these projects slipped in-year by: 24 months for MQ-4C Triton, 18 months for Light Tactical Fixed Wing, and 13 months for CMATS. See Table 3.

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

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

73 The *Defence Capability Manual* (Version 1.0) does not describe MAAs and instead refers to Product Delivery Agreements (PDAs) (see paragraph 1.42). Projects in this MPR have an approved MAA.

governance document under the Capability Life Cycle⁷⁴, intended to ensure that all parties in Defence are informed of government decisions.

1.37 Defence updated the Capability Life Cycle Manual in June 2020, no longer referring to Project Directives as a key governance document. The Capability Life Cycle Manual was superseded by the Defence Capability Manual in December 2020. The Defence Capability Manual also does not refer to Project Directives. Defence has advised the ANAO that government decisions are recorded in CapabilityOne, which records government decisions in relation to a project. In some cases, the Joint Force Authority may provide a specific documented directive. The ANAO has previously highlighted the importance of ensuring that Project Directives properly reflect the relevant government decision, and that MAAs are appropriately aligned with the relevant Project Directive.⁷⁵

1.38 Of the two new projects entering the 2020–21 MPR, only the JORN Upgrade project advised the ANAO that it had direct access to government approval documentation. The SRGB Air Defence project advised that it did not have direct access to government approval documentation. Last year, the Future Subs, Combat Recon. Vehicles and Battlefield Command System projects advised that they did not have access to government approvals.

1.39 In November 2020, Defence advised the ANAO that ‘the internal Cabinet Liaison Services section provides advice to Defence in relation to information pertaining to government approvals. Where a Project has not been identified as having a need to know, the Project can request access to relevant Cabinet documents via a business case.’

1.40 The risk of misalignment or error is reduced if Defence has appropriate access to government records, such as that previously provided by Project Directives. If projects can access original Cabinet documentation, there is no residual impact.

1.41 The ANAO requires access to original approval documents to validate the requirements of projects. Validation based on internal Defence documentation is not always possible or may not meet evidentiary standards.

1.42 First advised by Defence in July 2016⁷⁶, Product Delivery Agreements (PDAs)⁷⁷ were to be developed to replace the existing MAAs and Materiel Sustainment Agreements (MSAs). Defence advised the ANAO during preparation of the 2020–21 MPR that this initiative is still in the concept phase and will not apply until a PDA framework is approved and implemented. In October 2021, Defence advised the ANAO that in the absence of the PDA framework, Capability Managers and Delivery Groups continue to use the Materiel Acquisition Agreement and Materiel Sustainment Agreement Framework.

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

75 Auditor-General Report No.6 2013–14 *Capability Development Reform*, paragraph 11.54.

76 Auditor-General Report No.40 2016–17 *2015–16 Major Projects Report*, paragraph 1.21.

77 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, *Defence Capability Manual*, Defence, Canberra, 2020, p.49.

Smart Buyer Framework

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

1.44 Defence advised the ANAO that no MPR projects have been considered by the Smart Buyer Framework in 2020–21. Of the two projects entering the MPR in 2020–21, neither was approved under the Smart Buyer process, although SRGB Air Defence participated in a pilot workshop while the Smart Buyer framework was still being defined, and JORN Upgrade conducted an informal, internal assessment against the Smart Buyer criteria. The ANAO also observed that Smart Buyer workshops were being held for future tranches and phases of projects in the MPR.

Business systems

1.45 Defence continues to review its business systems with the aim of consolidating them to provide a more manageable ICT environment. During 2019–20, CASG continued to report on the status of acquisition projects in the Monthly Reporting System (MRS), which formed part of the evidence for the ANAO's review of the PDSSs. In July 2020, Defence discontinued the MRS and project reporting now occurs via the Monthly Reporting Module (MRM). Defence advised the ANAO that MRM replicates the functionality of MRS while delivering an updated platform and user interface. A second new system, the Project Performance Report Information Platform (PPRIP), delivers a platform for projects to also conduct monthly reviews of their project and enable the raising of risks and actions with line management.

1.46 As the MRM was implemented in the 2020–21 financial year, the ANAO reviewed Defence's use of the MRM for the 2020–21 MPR. As the replacement for the MRS, the MRM should provide information that can be used to support disclosures in Defence's PDSSs.

1.47 During the preparation of the 2020–21 MPR, Defence advised the ANAO that the MRM could be used as a source of evidence for the PDSSs; however, as the MRM is not entirely system generated, ANAO concerns remain regarding its consistency and accuracy. The ANAO identified errors within MRM reports and therefore their reliability was not sufficient as supporting evidence for the MPR. Alternate evidence was sourced to verify the PDSSs. With regard to the errors in MRM identified by the ANAO, Defence advised the ANAO in November 2021 that:

In relation to the internal processes to assess accuracy and completeness, the process has been: data checking and reconciliation work with DFG to ensure BORIS file uploads reflect the accrual accounting position (complete Oct 20); daily automated system checks to ensure that data flows are maintained and messages are provided to users when data is not up to date; prior to each MRM lockdown period reminders on data requirements are sent to reduce human error; after each lockdown period system statistics are used to drive lessons on sign off and identify areas of improvement; and to assure that in each reporting round if the data was accurate trend information over time is used to identify anomalies and drive improvements.

1.48 These checks do not appear to be fully effective as the ANAO's review identified anomalies in the MRM data, and alternate evidence had to be obtained. The ANAO will continue to monitor the completeness and accuracy of data in MRM.

Results of the ANAO's review

1.49 The following sections outline the results of the ANAO's review. The results inform the overall conclusion in the *Independent Assurance Report* by the Auditor-General for 2020–21.

Financial framework

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

1.51 A project's total approved budget comprises:

- the allocated budget, which covers the project's approved activities, as indicated in the MAA; and
- the contingency budget, which is set aside for the eventuality of risks occurring and includes unforeseen work that arises within the delivery of the planned scope of work.⁷⁸

1.52 In 2020–21, the ANAO reviewed the financial framework as it applied to managing project budgets and expenditure, including: project financial assurance, contingency, the reporting environment, and reporting cost variations and personnel costs.

Project financial assurance statement

1.53 The project financial assurance statement's objective is to enhance transparency by providing readers with information on each project's financial position (in relation to delivering project capability) and whether there is 'sufficient remaining budget for the project to be completed'.⁷⁹ 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 2021.

1.54 In the 2018–19 MPR, the ANAO identified an instance where project scope worth \$1.5 billion was transferred to other projects or other phases of that program without a corresponding transfer of funds out of the project budget.⁸⁰ The ANAO has not observed any such transfers of project scope in the 2020–21 financial year, however, the Light Tactical Fixed Wing project reduced its scope during 2020–21 without a corresponding Real Cost Decrease. The Light Tactical Fixed Wing project office was unable to quantify the value of this reduction in scope, but advised that it anticipated returning unspent funds at project closure. The Battlefield Command System project also expects to reduce its scope, following government consideration. As at 30 June 2021, discussions from the outcomes of a technical review and finance review were underway to determine the way forward for this project.

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

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

80 Auditor-General Report No.19 2019–20 *2018–19 Major Projects Report*, p.26.

1.55 The Chief Finance Officer's representation letter to the Secretary of Defence on the 2020–21 MPR's project financial assurance statements was unqualified.

Contingency statements and contingency management

1.56 The purpose of the project contingency budget is to estimate the inherent cost, schedule and technical uncertainties of projects' in-scope work.⁸¹ Defence policy requires that project managers ensure that all decisions in regard to a project's contingency budget are included in the project's contingency budget log to ensure ongoing transparency and traceability. Defence's Project Risk Management Manual (PRMM version 2.5, p.105) requires that contingency be applied for identified risk mitigation activities.

1.57 Contingency provisions are approved by government as part of the total project budget, though are not programmed or funded in cash terms⁸² and projects are encouraged to meet contingency funding requirements from within their currently programmed cash funding. If this cannot be achieved, a project may propose to access contingency funding from the relevant capital program — the Approved Major Capital Investment Program (AMCIP), Facilities and Infrastructure Program (FIP) and ICT Capital Program. If this cannot be achieved, the contingency call will be presented to the Defence Investment Committee, which if agreed will potentially be met by budget offsets across the whole Integrated Investment Program.⁸³

1.58 Defence 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.

1.59 In 2020–21, two Major Projects, MRH90 Helicopters and Battle Comm. Sys. (Land) 2B, had accessed their contingency funds. The MRH90 Helicopters project committed \$34.4 million of contingency to mitigate supportability and performance risks. The Battle Comm. Sys. (Land) 2B project used \$30.3 million of contingency funds to address delay for the Defence Tactical Communications Network and refinement of specifications for the Headquarters on the Move capability.

1.60 The ANAO's examination of project contingency logs as at 30 June 2021 highlighted that the clarity of the relationship between contingency allocation and identified risks continues to be an issue. Five projects (Future Frigates, Combat Recon. Vehicles, Offshore Patrol Vessel, Repl Replenishment Ships, and Pacific Patrol Boat Repl) did not explicitly align their contingency log with their risk log to ensure that the expected cost impact of risks is maintained effectively, as required by PRMM version 2.5. One project (JORN Upgrade) did not have an up to date risk log as the project is in the process of renegotiating a new approach to deliver the project with its prime contractor. Defence advised the ANAO that the JORN Upgrade risk log will be updated once the negotiations are finalised, and the associated Contract Change Proposals have been executed.

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

82 *ibid*, p.3.

83 *ibid*, p.4.

1.61 The ANAO will continue to monitor non-compliance with PRMM version 2.5 and the release of specific guidance following the implementation of the CASG Risk Management Framework, which is expected to be implemented in stages to 2022 (as discussed from paragraph 1.72).

Reporting on cost variations, project personnel numbers and costs

1.62 In May 2018, the JCPAA wrote to the Auditor-General to request that the ANAO report back to it 'on how Defence major project cost variations and the costs of retaining project staff over time might be reported annually in future Major Projects Reports.'⁸⁴

Cost variations since Second Pass Approval

1.63 Table 8, at pp.42–45, shows all budget variations post initial Second Pass Approval for projects.

Project personnel numbers and costs

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

1.65 The ANAO observed during fieldwork in 2019 that several MPR projects had staff who worked concurrently on other projects, which included shared corporate staff. Some of these projects did not have systems in place to record accurately the proportion of time these shared staff attributed to the project. The ANAO also observed that MPR projects used different methods to record personnel data. These observations were repeated in 2020 and 2021.

1.66 In April 2020, the Defence Finance Group (DFG) indicated that it was possible to extract employee expenses (excluding contractors) from Defence's personnel system, known as the Personnel Management Key Solution (PMKeyS). DFG advised the ANAO that it would need to work with Defence People Group to ensure that all relevant Department IDs within PMKeyS for a project have been captured, as well as ensuring that people are properly allocated to the correct Department IDs. In November 2020 Defence advised the ANAO that it continued to investigate whether PMKeyS could be used as a robust source to track employee costs by project.

1.67 In September 2021 Defence advised the ANAO that it is still not yet able to provide the staff cost component of projects and that its systems are not capable of calculating the cost of retaining project staff over time. Accordingly, Defence has not provided any data on the costs of project staff for projects in the MPR. The ANAO will continue to monitor Defence's progress in recording project personnel numbers.

Enterprise Risk Management Framework

1.68 While major risks and issues data in the PDSSs remains excluded from the formal scope of the Auditor-General's *Independent Assurance Report*⁸⁵, material inconsistencies identified in relation to this information are required to be detailed in the report. The following information is

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

85 See paragraph 1.3 for more information.

included to provide an overall perspective of how risks and issues are managed within Defence and the selected Major Projects.

1.69 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, to conduct its review of the PDSSs. At the Group level, the Deputy Secretary CASG issued a directive in May 2017 establishing a CASG Risk Management Reform Program to implement a risk management model within Defence's risk management framework.

1.70 In June 2020 the Deputy Secretary CASG issued a directive establishing the CASG Risk Management Framework, which is the key deliverable of the CASG Risk Management Reform Program. The initiative includes:

- the framework, which is the primary policy and operating framework for the management of risk across the group; and
- the Group Risk Management Strategy 2020–22, which provides a structured pathway to implementing the remodelled approach to managing risk across the 2020–22 period.

1.71 The reform was initially planned to be concluded in June 2019. Defence concluded the contract with its industry partner in May 2020. Defence advised the ANAO in November 2020 that it had delivered all three phases of the reform, including the development of risk management policies and toolsets for use by projects. However, Risk Profiles for some CASG Domains remain in draft, and Risk Management Implementation Plans are still being updated. Further, as detailed in Table 7, on p.34, not all projects are using the mandated risk management software tool, Predict!.⁸⁶

1.72 Defence advised the ANAO in October 2021 that it had released tools to standardise risk practices across CASG, and that this includes the rollout of Predict! across CASG. Defence anticipates the rollout of these tools and risk practices to be completed by February 2022, which will conclude the third and final phase of the CASG Risk Reform as initially planned in the CASG Deputy Secretary's Directive of 2017.

1.73 The ANAO will continue to monitor implementation of the Risk Management Framework, however, it will not be able to consider including risks and issues in the scope of the MPR until implementation of the framework is more mature.

1.74 In 2020–21, 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. The key issues with risk management, as observed by the ANAO, related to:

- variable compliance with corporate guidance. While most of the 21 MPR projects had an approved Risk Management Plan, only the SRGB Air Defence and Collins Comms and EW

⁸⁶ Predict! is a risk management tool used by Defence to manage risks and issues.

projects have updated their risk management plan within six months as required by PRMM version 2.5⁸⁷;

- the visibility of risks and issues when a project is transitioning to sustainment;
- for one project (Joint Strike Fighter), acquisition and sustainment risks are managed together⁸⁸;
- the frequency with which risk and issue logs are reviewed to ensure risks and issues are accurate and complete, appropriately managed in a timely manner, and accurately reported to senior management;
- lack of quality control resulting in inconsistent approaches in the recording of issues within Predict!;
- lack of a clear link between allocations against risk in the contingency log and risk logs; and
- risk management logs and supporting documentation of variable quality, particularly where spreadsheets are being used.

1.75 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. 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 to the review.

1.76 The JCPAA recommended in September 2018 that Defence plan and report a methodology to the JCPAA showing how acquisition projects can transition from the use of spreadsheet risk registers to tools with better version control.⁸⁹ In response, Defence advised the JCPAA in May 2020 that Predict! will be mandated as the risk management system.⁹⁰ Defence advised the ANAO in October 2021 that Defence policy was updated in August 2021 to mandate that risks must be documented in Predict!.

1.77 In October 2021 Defence further advised the ANAO that as at 30 June, 14 of the 21 MPR projects⁹¹ have a presence in Predict!, but are not necessarily using it to manage risks and issues.

87 The CASG Project Risk Management Manual version 2.5, Business Rule 2 requires the project manager to validate the currency of the Risk Management Plan on transition from one stage of the Capability Life Cycle to the next stage and, for any stage that is longer than six months, every six months within that stage.

88 As at 30 June 2021, Defence risk management guidance for acquisition projects was the PM 002 *CASG Project Risk Management Manual (PRMM)*, Version 2.5 2019. Guidance for sustainment products was the DMM (LOG) 04-0-003, *Defence Materiel Manual (Logistics Management)*, which provides different consequence and likelihood descriptors. Since 30 June 2021, for projects that are managing risk in Predict! version 6, acquisition and sustainment risk management are both guided by the (CP) 005 *Capability Acquisition and Sustainment Risk Management Manual*, Version 1.0 2021.

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

90 Department of Defence, written supplementary submission 7 to the Joint Committee of Public Accounts and Audit, Inquiry into the 2018–19 Major Projects Report and Future Submarines Project – Transition to Design, p.11.

91 Defence advised the ANAO in October 2021 that as at 30 June, the seven projects not yet using Predict! were: MRH90 Helicopters, Light Tactical Fixed Wing, CMATS, Battlefield Command System, Battle Comm. Sys. (Land) 2B, Collins Comms and EW, and UHF SATCOM.

The ANAO's review of documentation relating to CASG's 21 project offices indicates that as at 30 June 2021:

- fourteen utilised Predict!;
- six utilised spreadsheets as their primary risk management tool;
- two (Joint Strike Fighter and CMATS) utilised a bespoke SharePoint based tool; and
- one (Future Frigates) used Predict! and Defence's CapabilityOne.

1.78 Table 7 below lists the MPR projects' use of the Predict! Risk Management System tool.

Table 7: MPR projects' use of Predict! Risk Management System as at 30 June 2021

Project	Predict! Use	Other Risk System in Use
Joint Strike Fighter	Yes	MS SharePoint
Future Frigates	Yes	CapabilityOne
Future Subs	Yes	
Combat Recon. Vehicles	Yes	
MRH90 Helicopters	No	MS Excel
Offshore Patrol Vessels	Yes	
Overlander Medium/Heavy	Yes	
MQ-4C Triton	Yes	
Hawkei	Yes	
Light Tactical Fixed Wing ¹	No	MS Excel
SRGB Air Defence	Yes	
JORN Upgrade	Yes	
Repl Replenishment Ships	Yes	
CMATS	No	MS SharePoint
Battlefield Command System	No	MS Excel
Battle Comm. Sys. (Land) 2B	No	MS Excel
Collins Comms and EW	No	MS Excel
Pacific Patrol Boat Repl	Yes	
Maritime Comms	Yes	
ANZAC Air Search Radar Repl	Yes	
UHF SATCOM	No	MS Excel

Note 1: Light Tactical Fixed Wing was previously called Battlefield Airlifter.

Source: ANAO

1.79 Defence advised the ANAO that CASG has an approved rollout plan to transition all CASG projects to Predict! by February 2022.

1.80 Implementation of Predict! is expected to improve the efficiency of Defence's risk management, standardise reporting, and improve the reliability of supporting evidence for the annual MPR.

Lessons learned

1.81 In May 2020, CASG released a revised version of its Lessons Program Policy. The Policy is underpinned by a Defence Joint Directive which directs all 'Groups and Services, as required, to establish and lead a whole-of-Defence Joint Lessons that provides centralised Lessons management and coordination'.

1.82 Version 2.0 of the CASG Lessons Program Policy states that the:

Deputy Secretary CASG expects the CASG leadership to share best practices and lessons. To facilitate this the CASG Lessons Program continually analyses lessons collected from programs, projects, products and governance review outcomes; and ensures they are readily available via the Defence Lessons Repository (DLR).⁹²

1.83 Defence is yet to fully implement a lessons learned framework and compliance monitoring process. The ANAO has observed that not all project lessons are available within the Defence Lessons Repository. Full implementation is expected to enable projects to review and apply lessons learned that are applicable to enable more consistent and improved project outcomes. The ANAO will continue to monitor Defence's progress in implementing the lessons learned process for projects' use and provide an update in the 2021–22 MPR.

Caveats and deficiencies

1.84 Defence has not defined, in its internal policies and procedures, the terms 'caveat' or 'deficiency' relating to the declaration of significant capability milestones. In November 2021, Defence advised the ANAO that caveats or deficiencies are used where a milestone (IMR, IOC, FMR, or FOC) has been achieved in principle, with outstanding actions to be rectified or mitigated.

1.85 The ANAO first observed the declaration of a major milestone with caveats in 2013–14, and Defence has continued to declare major milestones with caveats since then. In the 2017–18 MPR the ANAO noted advice from Defence that it discourages IARs recommending caveats at FOC.⁹³

1.86 In 2020–21, Defence declared the following caveats or deficiencies relating to projects in the MPR:

- Joint Strike Fighter — Defence declared IOC on 28 December 2020, acknowledging a number of known acceptable deficiencies with the aircraft and support systems, including some delays to weapons delivery and integration;
- Combat Recon Vehicles — Defence declared IMR in June 2021 with three exceptions relating to the integration of electronic counter measures, the completion of Functional Configuration Audit and Physical Configuration Audit, and transportability studies including air transportability and integration with other Army vehicles; and

⁹² Department of Defence, *PM 006 – Lessons – CASG Lessons Program*, Version 2.0, Defence, Canberra, 2020.

⁹³ Auditor-General Report No.20 2018–19, *2017–18 Major Projects Report*, paragraphs 1.61–1.62, p.32.

- ANZAC Air Search Radar Repl — Defence declared IMR 1 in December 2020 with three caveats, and IMR 2 in April 2021 with four caveats. Of those, three caveats had been resolved by 30 June 2021.

2. Analysis of Project 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 Parliament's 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 of project performance.

Project performance analysis by the ANAO

2.3 The major dimensions of project performance are:

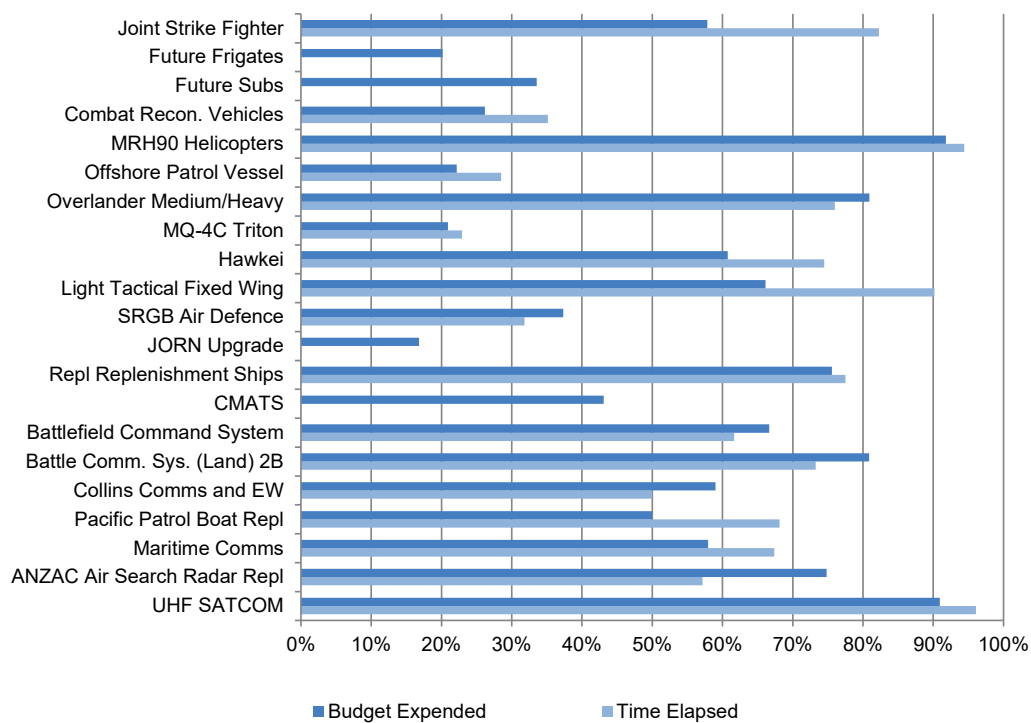
- cost performance (discussed at pp.37–48) — this includes the percentage of budget expended (Budget Expended), changes in budget since Second Pass Approval, in-year changes to budget, and in-year expenditure;
- schedule performance (discussed at pp.49–65) — this includes the percentage of time elapsed (Time Elapsed), total schedule slippage, and in-year changes to schedule; and
- capability performance (discussed at pp.69–74) — this includes the key challenges faced by Defence in the delivery of key materiel capabilities.

2.4 This chapter provides ANAO analysis relating to the three principal dimensions of project performance noted above, drawing on the Defence Project Data Summary Sheets (PDSSs) for the 21 Major Projects. This work includes analysis of in-year information, longitudinal analysis and analysis of the results of project progress for the year-ended 30 June 2021.

2.5 Figure 1, on p.38, directly compares cost performance with schedule performance through two metrics, Budget Expended and Time Elapsed.⁹⁴

94 A project's budgeted cost and schedule data is presented as at 30 June 2021, and may differ from originally approved budgets and schedules.

Figure 1: Budget Expended and Time Elapsed at 30 June 2021



Note 1: At 30 June 2021, Future Frigates and Future Subs did not have Final Operational Capability (FOC) milestones approved by government.

Note 2: JORN Upgrade FOC forecast is disclosed in its PDSS as 'TBA'.

Source: ANAO analysis of the 2020–21 PDSSs.

2.6 Figure 1 shows that for most projects (17 of 18⁹⁵), Budget Expended was broadly in line with (within 10 per cent), or lagging, Time Elapsed. This relationship is generally expected in an acquisition environment predominantly based on milestone payments. However, due to the varying complexity, stages and acquisition approaches across the portfolio of projects, further analysis of these simple performance measures is required to provide a better understanding of key variances.

2.7 Where Budget Expended is significantly lagging Time Elapsed, the project schedule may be at risk — i.e. expenditure lags may indicate delays in milestone achievement. In 2020–21, the Budget Expended for two projects lagged Time Elapsed by at least 20 per cent. These were Light Tactical Fixed Wing and Joint Strike Fighter.

2.8 For Light Tactical Fixed Wing (Budget Expended 66 per cent, Time Elapsed 90 per cent), the expenditure lag is associated with project deliverables not yet on contract, a reduction in project scope without a corresponding reduction in budget, and the planned delivery of some requirements

95 Future Frigates and Future Subs are excluded from this analysis as they did not have FOC milestones approved by government at 30 June 2021. JORN Upgrade is excluded as its FOC forecast is disclosed in its PDSS as 'TBA'.

after Final Operational Capability (FOC). In 2020 the government agreed to an operational capability 'pivot' from Battlefield Airlifter to Light Tactical Fixed Wing, and to re-scoping and rescheduling activities resulting in an updated Materiel Acquisition Agreement (MAA). The revised FOC is anticipated to be achieved in 2021–22.

2.9 For Joint Strike Fighter (Budget Expended 58 per cent, Time Elapsed 82 per cent), the expenditure lag continues to reflect the transition from the aircraft development stage to the production stage, where relatively little budget was expended. In-year expenditure is increasing compared to prior years, with the gap between Budget Expended and Time Elapsed being 12 percentage points smaller than in 2019–20.

2.10 Where Budget Expended leads Time Elapsed, the project budget may be at risk — i.e. expenditure increases may indicate real cost increases. However, for the one project (ANZAC Air Search Radar Repl) where Budget Expended leads Time Elapsed by 10 per cent or more, the cause of the variance does not relate to insufficient project funds.

2.11 ANZAC Air Search Radar Repl (Budget Expended 75 per cent, Time Elapsed 57 per cent) spent approximately nine per cent of its budget prior to Second Pass government approval, to conduct a Risk Reduction Program and make early purchases of equipment to ensure the schedule would be met.⁹⁶

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

Cost performance analysis

Approved budget at initial Second Pass Approval and at 30 June 2021

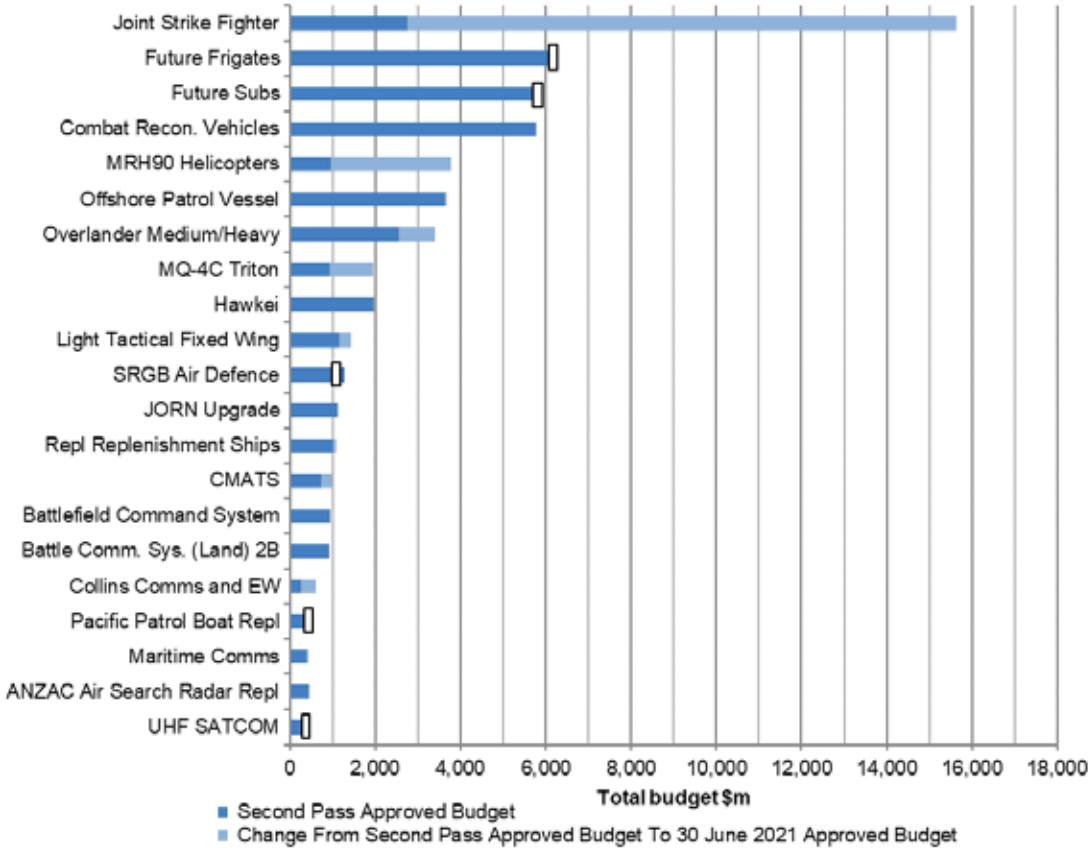
2.13 Figure 2, on pg.40, compares each project's approved budget at initial Second Pass Approval and its approved budget at 30 June 2021. Four projects had variations of \$500 million or more, with the following components:

- Joint Strike Fighter — net increase of \$12.9 billion, comprising \$10.5 billion for 58 additional aircraft in 2013–14, \$2.0 billion for exchange rate variation and \$0.4 billion for price indexation;
- MRH90 Helicopters — net increase of \$2.8 billion, comprising \$2.6 billion for 34 additional aircraft in 2005–06 and other minor scope changes, and \$0.7 billion for price indexation, offset by a \$0.3 billion decrease due to scope transfers for facilities, and a \$0.1 billion decrease for exchange rate variation;
- Overlander Medium/Heavy — net increase of \$0.8 billion, comprising \$0.7 billion 'project supplementation' to reduce cost pressures and \$0.1 billion exchange rate variation; and

⁹⁶ Between First Pass Approval in May 2015 and Second Pass Approval in August 2017, government approved \$65.6 million of funding to undertake these activities.

- MQ-4C Triton — net increase of \$1.0 billion, comprising \$0.3 billion for an extra air vehicle in 2019–20, \$0.8 billion for an additional air vehicle and interim support services for the first seven years in 2020–21, offset by a \$0.1 billion decrease in exchange rate variation.

Figure 2: Approved project budgets at initial Second Pass Approval and at 30 June 2021 (\$ million)



Note 1: □ indicates that the budget for the project at 30 June 2021 is less than the original budgeted cost.
Source: ANAO analysis of the 2020–21 PDSSs. Previous MPRs have reported that budget variances since initial Second Pass Approval have resulted from: increasing the scope of a project via revised Second Pass Approvals, programmatic decisions, Real Cost Increases/Decreases, transfers to/from other projects, and budgetary adjustments. Project budgets may also be affected by price indexation⁹⁷ and foreign exchange variation.

97 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.

2.14 The total budget for the 21 MPR projects at 30 June 2021 was \$58.0 billion, a net increase of \$18.3 billion when compared to the approved budget at initial Second Pass Approval of \$39.8 billion. A summary of budget variations is at Table 2, on p.10, and a more detailed analysis of these budget variations is included in Table 8, pp.42–45.

Table 8: Budget variations post initial Second Pass Approval by variation type as at 30 June 2021, and ANAO performance audits relating to Major Projects¹

Project	Budget at initial Second Pass Approval (\$m)	Variation type	Explanation of variation	Year/s of variation	Variation amount (\$m)	ANAO performance audits
AIR 6000 Phase 2A/2B New Air Combat Capability ²	751.6 (Stage 1)	Scope increase/Budgetary Adjustments/Transfer	58 additional aircraft (Stage 2 Second Pass Approval) offset by minor transfers	2013–14 2017–18	10,504.1	Auditor-General Report No.14 2018–19: Joint Strike Fighter — Introduction into service and sustainment planning Auditor-General Report No.6 2012–13: Management of Australia's Air Combat Capability – F-35A Joint Strike Fighter Acquisition
SEA 5000 Phase 1 Future Frigates	6183.9	Budget transfer	Funding transfer to Estate and Infrastructure Group to address funding shortfall with the Naval Capability Infrastructure Subprogram	2019–20	3.3	Auditor-General Report No.39 2017–18: Naval Construction Programs – Mobilisation
SEA 1000 Phase 1B Future Submarines Design Acquisition	5952.5	Budget transfer	Transfer to the Chief Information Officer Group component of SEA1000 Phase 1B for the Defence Secret Environment – International, Public Debt Interest and out-turning	2019–20 2020–21	(16.6)	Auditor-General Report No.48 2016–17: Future Submarine – Competitive Evaluation Process Auditor-General Report No.39 2017–18: Naval Construction Programs – Mobilisation Auditor-General Report No.22 2019–20: Future Submarine Program – Transition to Design
LAND 400 Phase 2 Combat Reconnaissance Vehicles	5762.7	N/A	N/A	N/A	0.0	Auditor-General Report No.18 2020–21: Defence's Procurement of Combat Reconnaissance Vehicles (LAND 400 Phase 2)

Project	Budget at initial Second Pass Approval (\$m)	Variation type	Explanation of variation	Year/s of variation	Variation amount (\$m)	ANAO performance audits
AIR 9000 Phase 2/4/6 Multi-Role Helicopter	957.2 (Phase 2)	Scope increase/Budget transfers	34 additional aircraft (Phase 4/6 Second Pass Approval), offset by minor transfers	2005–06 2018–19	2,270.5	Auditor-General Report No.9 2015–16: Test and Evaluation of Major Defence Equipment Acquisitions (paragraph 4.54) Auditor-General Report No.52 2013–14: Multi-Role Helicopter Program Auditor-General Report No.57 2010–11: Acceptance into Service of Navy Capability
SEA 1180 Phase 1 Offshore Patrol Vessel	3639.1	N/A	N/A	N/A	0.0	Auditor-General Report No.39 2017–18: Naval Construction Programs – Mobilisation Auditor-General Report No.12 2020–21: Defence's Procurement of Offshore Patrol Vessels – SEA 1180 Phase 1
LAND 121 Phase 3B Medium Heavy Capability, Field Vehicles, Modules and Trailers ³	2549.2	Real Cost Increase ³ /Scope/Budgetary adjustment	Project supplementation (\$684.2m) and additional vehicles, trailers and equipment (\$28.0m) at Revised Second Pass Approval Budgetary Adjustment (-\$30.0m)	2013–14 2018–19	682.2	Auditor-General Report No.52 2014–15: Australian Defence Force's Medium and Heavy Vehicle Fleet Replacement (LAND 121 Phase 3B)
AIR 7000 Phase 1B Multi-mission Unmanned Aircraft System	923.6	Scope increase/Budget Transfer/Real cost decrease	1 additional aircraft at Second Pass Approval – Tranche 2, minor transfers from DSTG offset by a Force Structure Plan amendment, Second Pass Approval Tranche 3 (1 Additional aircraft) and	2017–18 2018–19 2019–20 2020–21	1,144.2	N/A

Project	Budget at Initial Second Pass Approval (\$m)	Variation type	Explanation of variation	Year/s of variation	Variation amount (\$m)	ANAO performance audits
LAND 121 Phase 4 Protected Mobility Vehicle – Light	1945.0	N/A	Tranche 4 (sustainment funding for first 7 years). N/A	N/A	0.0	Auditor-General Report No. 6 2018–19: Army's Protected Mobility Vehicle – Light
AIR 8000 Phase 2 Battlefield Airlift – Caribou Replacement	1156.5	Budget transfer	Transfer to Defence Science and Technology Group	2019–20	(1.0)	Auditor-General Report No. 3 2013–14: AIR 8000 Phase 2 – C-27J Spartan Battlefield Airlift Aircraft
AIR 2025 Phase 6 Jindalee Operational Radar Network	1117.9	Scope increase/Budget Transfer	Transfer for replacing Radar 3 facility and early access to funding for early planning and de-risking activities	2020–21	10.7	Auditor-General Report No. 28 1995–96: Jindalee Operational Radar Network Auditor-General Report No. 30 2001–2002: Test and Evaluation of Major Defence Equipment Acquisitions Auditor-General Report No. 24 2005–06: Acceptance, Maintenance and Support Management of the JORN System
SEA 1654 Phase 3 Maritime Operational Support Capability	1004.6	Budget Transfers	Transfer for training and additional expected costs and Contract Change Proposals	2015–16 2018–19 2019–20	81.4	N/A
AIR 5341 Phase 3 Civil Military Air Management System	731.4	Real Cost Increase/Budgetary Adjustment	Real Cost Increase offset by minor transfers	2017–18	240.7	Auditor-General Report No. 4 2019–20: OneSky: Contractual Arrangements Auditor-General Report No. 46 2016–17: Conduct of the OneSKY Tender

Project	Budget at initial Second Pass Approval (\$m)	Variation type	Explanation of variation	Year/s of variation	Variation amount (\$m)	ANAO performance audits
LAND 200 Tranche 2 Battlefield Command System	930.0	N/A	N/A	N/A	0.0	Auditor-General Report No.1 2016–17: Procurement of the International Centre for Complex Project Management to Assist on the OneSKY Australia Program
SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Improvement Program	247.7 (Stage 1)	Scope increase/Budgetary Adjustment	Additional capability (Stage 2 Second Pass Approval)	2016–17 2020–21	354.0	Auditor-General Report No.40 2018–19: Modernising Army Command and Control – the Land 200 Program Auditor-General Report No.23 2008–09: Management of the Collins-class Operations Sustainment
SEA 1442 Phase 4 Maritime Communications Modernisation	385.7	N/A	N/A	N/A	0.0	Auditor-General Report No.30 2018–19: ANZAC Class Frigates - Sustainment
SEA 1448 Phase 4B ANZAC Air Search Radar Replacement	427.8	N/A	N/A	N/A	0.0	Auditor-General Report No.30 2018–19: ANZAC Class Frigates - Sustainment
JP 2008 Phase 5A Indian Ocean Region UHF SATCOM	460.9	Real Cost Decrease	Real Cost Decrease	2013–14	(18.0)	N/A

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

Note 2: Projects that have had no Real Variations to their budget, and have not appeared in any performance audits, do not appear in this table. They are: SRGB Air Defence, Battle Comm. Sys. (Land) 2B and Pacific Patrol Boat Repl. For a definition of 'Real Variations' see the 2020–21 MPR Guidelines in **Part 4** of this report.

Note 3: Described by Defence as 'project supplementation'. Refer to Note 3 of Table 2.

Budget performance

2.15 The following figures and tables illustrate the budget performance of the 21 selected projects by way of:

- in-year budget variations by project (see Table 9, on p.47); and
- expenditure forecasting performance against actual expenditure for 2020–21 (see Figure 3 on p.49).

In-year budget variance analysis

2.16 Table 9, on p.47, sets out the in-year budget variations for each project. Overall, the approved budget for the selected projects as at 30 June 2021 decreased by \$985.2 million (a 1.7 per cent decrease) compared to their approved budget as at 30 June 2020. This was driven by exchange rate variation decreases of \$1808.5 million and net real increases of \$822.9 million.

2.17 Exchange rate variations result from a project's exposure to foreign currencies and movements in exchange rates against the Australian dollar.⁹⁸ Budget adjustments aim to maintain the relative buying power of the project budget. Movements in the United States dollar and the Euro were the main influences. Projects with larger movements in foreign exchange in 2020–21 included:

- Joint Strike Fighter — movement of minus \$1000.6 million, or 0.6 per cent decrease in budget.
- Future Frigates — movement of minus \$245.0 million, or 3.9 per cent decrease in budget.
- MQ-4C Triton — movement of minus \$182.0 million, or 1.0 per cent decrease in budget.
- Combat Recon. Vehicles — movement of minus \$106.3 million, or 1.8 per cent decrease in budget.

2.18 Real Variations⁹⁹ primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability and budgetary adjustments such as administrative savings decisions. In 2020–21 there was one project with a significant Real Variation:

- MQ-4C Triton — variation of \$823.9 million reflecting budget transfers for Second Pass Approval for Tranche 3 (providing for one additional aircraft) and Tranche 4 (providing sustainment funding for the first 7 years).

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

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

Table 9: In-year (2020–21) budget variations by project

Project	Approved Budget 2019–20 \$m	Approved Budget 2020–21 \$m	In-year Exchange Variation \$m	In-year Real Variation \$m	Total Variance \$m	Total Variance (per cent)
Joint Strike Fighter	16,631.3	15,630.7	(1000.6)	0.0	(1000.6)	(6.0)
Future Frigates	6291.8	6046.9	(245.0)	0.0	(244.9)	(3.9)
Future Subs ¹	5925.8	5818.2	(93.5)	(14.2)	(107.6)	(1.8)
Combat Recon Vehicles	5761.7	5655.4	(106.3)	0.0	(106.3)	(1.8)
MRH90 Helicopters	3773.9	3770.0	(3.8)	0.0	(3.9)	(0.1)
Offshore Patrol Vessel	3701.4	3669.6	(31.8)	0.0	(31.8)	(0.9)
Overlander Medium/Heavy	3398.6	3397.8	(0.8)	0.0	(0.8)	0.0
MQ-4C Triton ¹	1311.4	1953.4	(182.0)	823.9	642.0	49.0
Hawkei	1987.5	1952.9	(34.6)	0.0	(34.6)	(1.7)
Light Tactical Fixed Wing ²	1439.2	1426.1	(13.2)	0.0	(13.1)	(0.9)
SRGB Defence	–	1201.0	(62.8)	0.0	(73.4)	(6.1)
JORN Upgrade	–	1128.6	0.0	10.7	10.7	0.9
Repl Replenishment Ships	1084.7	1082.6	(2.1)	0.0	(2.1)	(0.2)
CMATS	975.6	974.5	(1.1)	0.0	(1.1)	(0.1)
Battlefield Command System	969.7	962.3	(7.3)	0.0	(7.4)	(0.8)
Battle Comm. Sys. (Land) 2B	947.1	942.2	(4.9)	0.0	(4.9)	(0.5)
Collins Comms and EW	610.7	608.7	(4.5)	2.5	(2.0)	(0.3)
Pacific Patrol Boat Repl	504.3	501.4	(2.9)	0.0	(2.9)	(0.6)
Maritime Comms	444.0	434.1	(10.0)	0.0	(9.9)	(2.2)
ANZAC Air Search Radar Repl	429.4	429.1	(0.3)	0.0	(0.3)	(0.1)
UHF SATCOM	422.1	421.3	(0.9)	0.0	(0.8)	(0.2)
Total³	56,610.2	58,006.8	(1808.5)	822.9	(985.2)	(1.7)

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

Note 2: Previously referred to as Battlefield Airlifter.

Note 3: The difference between the total approved budgets for 2019–20 and 2020–21 is due to the projects entering the MPR in 2020–21 (SRGB Air Defence and JORN Upgrade) not contributing to the total budget figure for 2019–20).

Source: ANAO analysis of the 2019–20 and 2020–21 PDSSs.

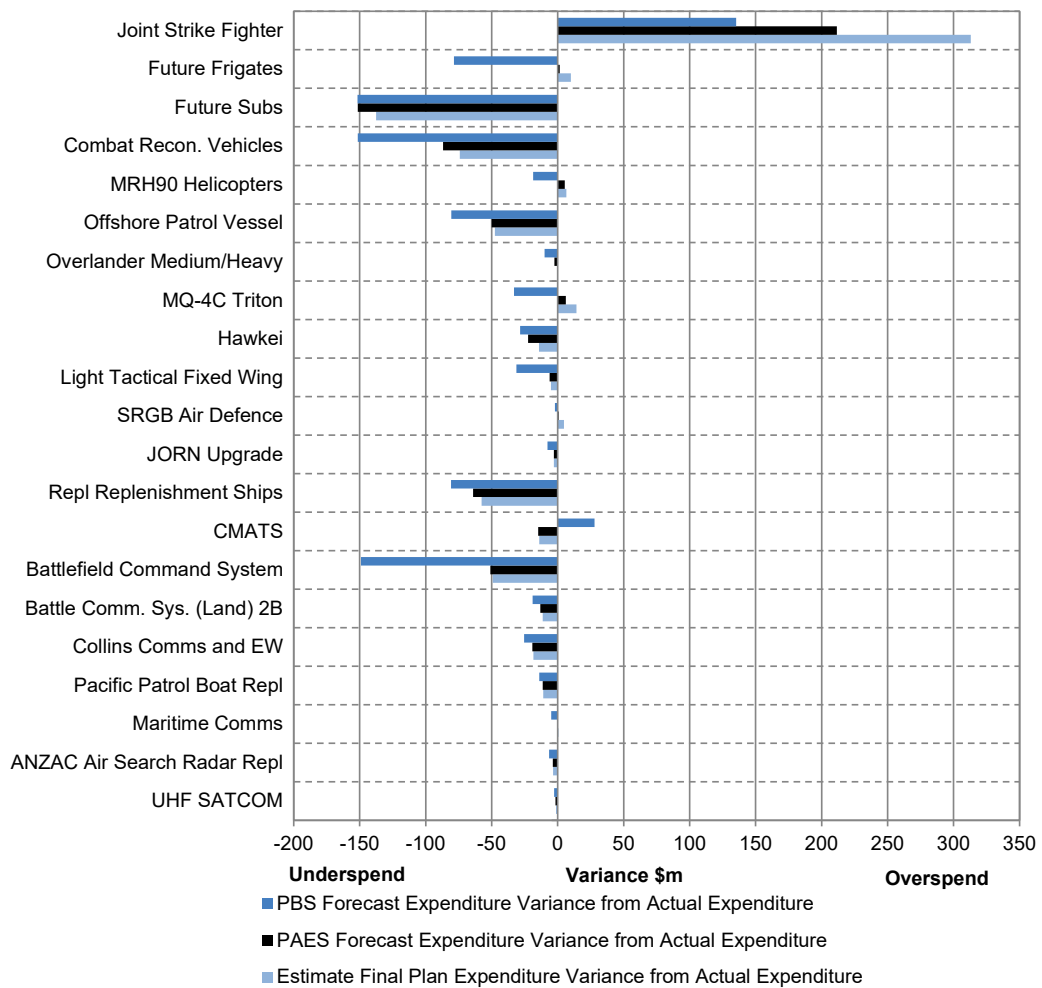
In-year forecast and actual expenditure

2.19 Accurately forecasting and managing budget expenditure is an important element in the management of a portfolio of projects. Figure 3, on p.49, sets out the expenditure forecasting performance of each project against actual expenditure in 2020–21. In total, actual expenditure for the 21 Major Projects at 30 June 2021 was \$6120.4 million. This is compared against an initial Portfolio Budget Statements (PBS) forecast expenditure of \$6853.0 million, a mid-year Portfolio Additional Estimates Statements (PAES) forecast of \$6396.0 million, and a final forecast of \$6218.5 million (Final Plan, approved as at June 2021).

2.20 The Defence PDSSs report that the variances illustrated in Figure 3 reflect the following developments:

- Joint Strike Fighter (expenditure of \$2565.9 million compared to \$2430.6 million PBS, \$2354.4 million PAES and \$2252.9 million Final Plan estimates) — the overspend is attributed to early achievement of cooperative program deliverables associated with the air vehicle and engine.
- Future Frigates (expenditure of \$508.5 million compared to \$587.0 million PBS, \$506.9 million PAES and \$498.4 million Final Plan estimates) — the underspend is reported as reflecting reprogramming of activities against the Head Contract.
- Future Subs (expenditure of \$630.8 million compared to \$782.5 million PBS, \$782.2 million PAES and \$768.3 million Final Plan estimates) — the underspend is predominantly attributed to not entering the next contracted work scope as initially forecast with Naval Group, and Lockheed Martin Australia not achieving the Commonwealth's expected labour levels. There was also lower than anticipated expenditure against other contractor support.
- Combat Recon. Vehicles (expenditure of \$414.6 million compared to \$566.1 million PBS, \$501.4 million PAES and \$488.7 million Final Plan estimates) — the underspend is reported as reflecting later than expected achievement of milestones due to technical difficulties and delays in the global Boxer program, some of which are a result of COVID-19 impacts on the supply chain and travel restrictions.
- Offshore Patrol Vessel (expenditure of \$204.6 million compared to \$285.1 million PBS, \$249.2 million PAES and \$248.9 million Final Plan estimates) — the underspend is reported as reflecting schedule delays as a result of COVID-19 in achieving contractual milestones and underspend on Project Office costs and government furnished equipment.
- Repl Replenishment Ships (expenditure of \$150.4 million compared to \$231.3 million PBS, \$254.5 million PAES and \$252.1 million Final Plan estimates) — the underspend is reported as reflecting the transfer of additional works from Spain to Australia and contract change proposal delays for final sparing deliveries.
- Battlefield Command System (expenditure of \$67.5 million compared to \$216.5 million PBS, \$118.5 million PAES and \$116.6 million Final Plan estimates) — the underspend is reported as reflecting the finalisation of a number of contract change proposals which updated the payment and delivery schedules for Battle Management System (BMS) and Tactical Communications Network (TCH) prime contracts and the inability to achieve the exit criteria for the Release 1.1 Software Release Review milestone.

Figure 3: In-year (2020–21) projects' forecast expenditure performance compared to actual expenditure (\$m)



Sources: ANAO analysis of the 2020–21 PDSSs and Defence Portfolio Budget Statements.

Schedule performance analysis

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

Schedule slippage and acquisition type by approval date

2.22 The ANAO compares project slippage against the classification of projects as Military Off-The-Shelf (MOTS), Australianised MOTS, or developmental, as these classifications are a general indicator of the difficulty associated with the procurement process.¹⁰² Prima facie, the more developmental in nature a project is, the greater the schedule risk and therefore the greater the need for more robust planning by Defence.^{103,104}

2.23 In 2020–21 the acquisition type, or classification, is no longer reported in the PDSS Header for the selected Major Projects. Project complexity is instead indicated by the Acquisition Categorisation (ACAT) level. Projects are graded into one of four (ACAT) acquisition categories¹⁰⁵:

- ACAT I — major capital equipment acquisitions that are normally the Australian Defence Force's (ADF) 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 — 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 — 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 — 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.

100 See Table 3, on p.13, of this report.

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

102 Refer to paragraph 34, on p.14, for a discussion of definitions for these different acquisition types.

103 The *Defence Procurement Review 2003*, also known as the Kinnaird Review, observed that off-the-shelf equipment can usually be delivered faster than equipment requiring development, and proposed that off-the-shelf alternatives must be one of the options put to government when seeking approval to procure a capability. See M Kinnaird, *Defence Procurement Review 2003*, Department of Defence, Canberra, 2003.

104 The 2015 *First Principles Review* identified technical risk as the major cause of post Second Pass Approval schedule slippage, and observed that schedule slippage causes cost escalation. See D Peever, *First Principles Review: Creating One Defence*, Department of Defence, Canberra, 2015, p.34 and p.92. Defence's implementation of the First Principles Review was examined in Auditor-General Report No.34 2017–18 *Defence's Implementation of the First Principles Review*.

105 These Defence definitions were included in Auditor-General Report No.19 2020–21 *2019–20 Major Projects Report*, at p.104.

2.24 This year, the ANAO has continued its longitudinal analysis based on acquisition type (MOTS, Australianised MOTS and developmental) to provide a transition to analysis based on ACAT levels.

ANAO analysis based on project acquisition type and acquisition category level

2.25 Table 10, below, provides information on the acquisition type and ACAT level of all 56 Major Projects included in the MPR since its inception, and the year of approval (generally Second Pass) for each Major Project.

2.26 In relation to the acquisition type for the 56 Major Projects, Table 10 indicates that:

- 14 projects (25 per cent) were developmental;
- 26 projects (46 per cent) were Australianised MOTS; and
- 16 projects (29 per cent) were MOTS.

2.27 In relation to the acquisition category for the 56 Major Projects, Table 10 indicates that:

- 14 projects (25 per cent) were ACAT I;
- 29 projects (52 per cent) were ACAT II;
- 12 projects (21 per cent) were ACAT III; and
- 1 project (2 per cent) was ACAT IV.

Table 10: Project year of approval, acquisition type and acquisition category

Project	Year of Approval	Acquisition type	Acquisition Category (ACAT)
HF Modernisation	1996	Developmental	ACAT II
Hornet Upgrade	1998	Australianised MOTS	ACAT II
Bushmaster Vehicles	1998	Australianised MOTS	ACAT III
ARH Tiger Helicopters	1999	Australianised MOTS	ACAT II
FFG Upgrade	1999	Developmental	ACAT II
Collins R&S	2000	Australianised MOTS	ACAT III
Wedgetail	2000	Developmental	ACAT I
Hw Torpedo	2001	MOTS	ACAT III
Collins RCS	2002	Australianised MOTS	ACAT IV
Armadales	2002	Australianised MOTS	ACAT III
Hornet Refurb	2003	MOTS	ACAT II
Air to Air Refuel	2003	Developmental	ACAT II
ANZAC ASMD 2A	2003	Australianised MOTS	ACAT II
SM-2 Missile	2004	Australianised MOTS	ACAT III
MRH90 Helicopters	2004	Australianised MOTS	ACAT I
ANZAC ASMD 2B	2005	Developmental	ACAT I
Stand Off Weapon	2005	Australianised MOTS	ACAT II
C-17 Heavy Airlift	2006	MOTS	ACAT III

Project	Year of Approval	Acquisition type	Acquisition Category (ACAT)
Super Hornet	2007	MOTS	ACAT II
AWD Ships	2007	Australianised MOTS	ACAT I
LHD Ships	2007	Australianised MOTS	ACAT I
Overlander Light	2007	Australianised MOTS	ACAT II
Next Gen Satellite	2007	MOTS	ACAT II
UHF SATCOM	2009	MOTS	ACAT II
155mm Howitzer	2009	MOTS	ACAT III
Joint Strike Fighter	2009	Developmental	ACAT I
Battle Comm. Sys.	2009	Australianised MOTS	ACAT II
Additional Chinook	2010	MOTS	ACAT III
C-RAM	2010	MOTS	ACAT III
MH-60R Seahawk	2011	MOTS	ACAT II
LHD Landing Craft	2011	Australianised MOTS	ACAT III
Battle Comm. Sys. (Land) 2A	2011	MOTS	ACAT III
Light Tactical Fixed Wing	2012	MOTS	ACAT II
Growler	2013	Australianised MOTS	ACAT II
Maritime Comms	2013	Australianised MOTS	ACAT II
Overlander Medium/Heavy	2013	Australianised MOTS	ACAT I
BMS	2013	Australianised MOTS	ACAT II
P-8A Poseidon	2014	MOTS	ACAT II
HATS	2014	Australianised MOTS	ACAT II
CMATS	2014	Developmental	ACAT I
Battle Comm. Sys. (Land) 2B	2015	Developmental	ACAT I
Collins Comms and EW	2015	MOTS	ACAT II
Additional MRTT	2015	Australianised MOTS	ACAT II
Hawkei	2015	Developmental	ACAT I
Repl Replenishment Ships	2016	Australianised MOTS	ACAT II
Pacific Patrol Boat Repl	2016	MOTS	ACAT II
Night Fighting Equipment Repl	2016	MOTS	ACAT III
ANZAC Air Search Radar Repl	2017	Developmental	ACAT II
Battlefield Command System	2017	Developmental	ACAT I
Offshore Patrol Vessel	2017	Australianised MOTS	ACAT II
JORN Upgrade	2017	Developmental	ACAT II
Combat Recon. Vehicles	2018	Australianised MOTS	ACAT I
Future Frigates	2018	Australianised MOTS	ACAT I

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Project	Year of Approval	Acquisition type	Acquisition Category (ACAT)
MQ-4C Triton	2018	Developmental	ACAT I
Future Subs	2019	Developmental	ACAT I
SRGB Air Defence	2019	Australianised MOTS	ACAT I

2.28 Table 10 (above) and Figure 4 (p.54) indicate that developmental projects became less common after 2005. Based on the findings of the Defence Procurement Review 2003 (Kinnaird Review)¹⁰⁶, in 2005 Defence began to increase the proportion of MOTS acquisitions, which are generally lower risk projects and therefore more likely to meet schedule timelines.¹⁰⁷ Table 10 and Figure 4 also indicate a continuing trend, where developmental projects have become more common since 2014. Of the 16 Major Projects which have received government approval since 2014:

- 7 projects (44 per cent) were developmental;
- 6 projects (38 per cent) were Australianised MOTS; and
- 3 projects (19 per cent) were MOTS.

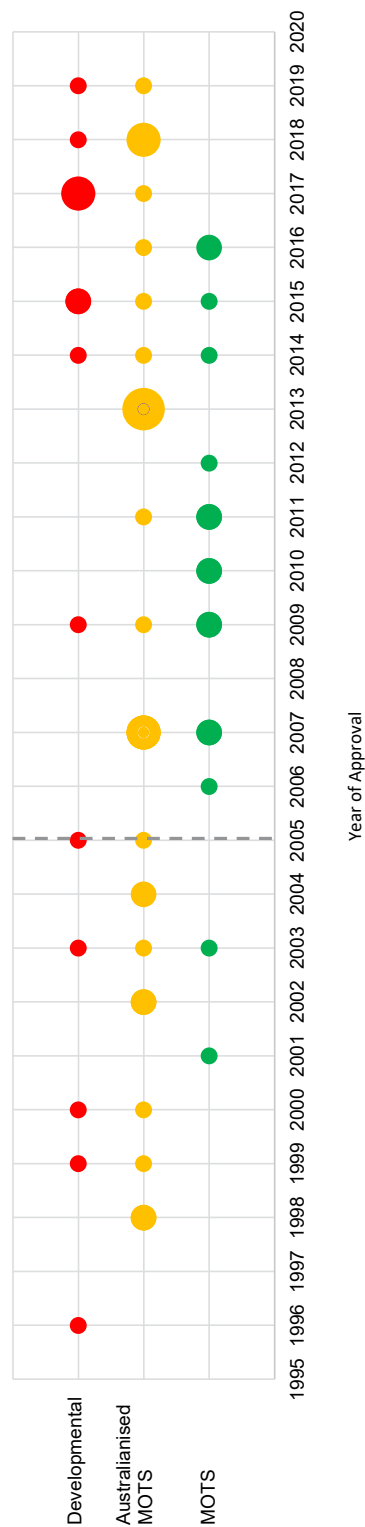
2.29 Figure 5 (p.55) illustrates the proportion of ACAT I to IV projects over time. In common with Figure 4, Figure 5 indicates a continuing trend towards the approval of more complex projects at the ACAT I and II levels. Of the 16 Major Projects which have received government approval since 2014:

- 6 projects (38 per cent) were ACAT I;
- 9 projects (56 per cent) were ACAT II;
- 1 project (6 per cent) was ACAT III; and
- no projects were ACAT IV.

¹⁰⁶ Discussed in footnote 103.

¹⁰⁷ Auditor-General Report No.19 2019–20 *2018–19 Major Projects Report*, paragraph 2.27.

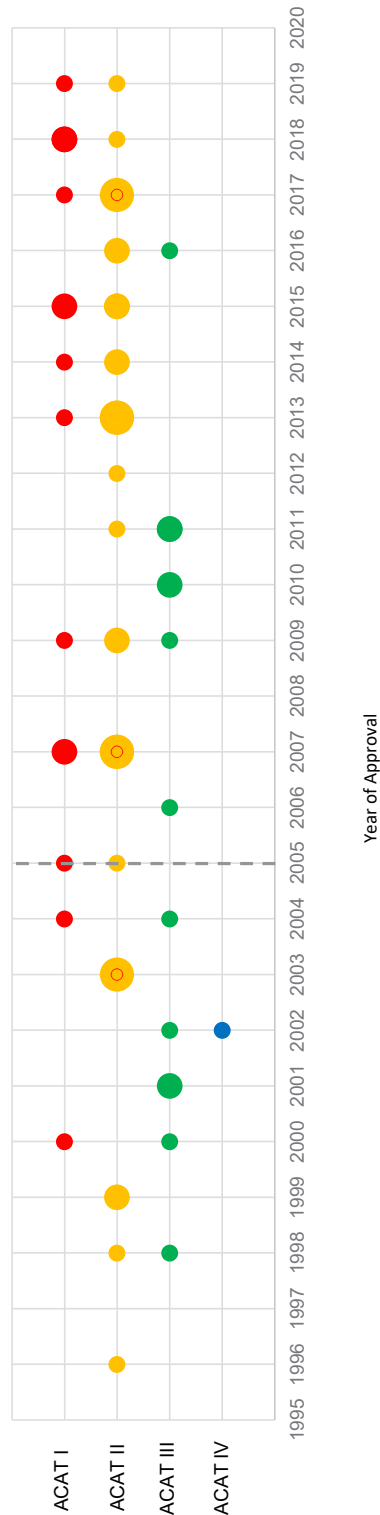
Figure 4: Acquisition type and year of approval



Note 1: Projects to the left of the dotted line were approved prior to implementation of the Kinnaird reforms in 2005. Projects to the right were approved following the reforms being implemented.

Key: ● – One project approved ● – Two projects approved ● – Three projects approved ● – Four projects approved

Figure 5: Categorisation (ACAT) type and year of approval



Note 1: Projects to the left of the dotted line were approved prior to implementation of the Kinnaird reforms in 2005. Projects to the right were approved following the reforms being implemented.

Key: ● – One project approved ● – Two projects approved ● – Three projects approved

Schedule slippage by acquisition type and acquisition category

2.30 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. Figure 6, on p.58, illustrates the total schedule slippage¹⁰⁸ since Second Pass Approval for 19 of the selected Major Projects.¹⁰⁹ It also depicts the acquisition type and places projects in order of government approval.

2.31 Figures 7a and 7b, on pp.59–60, illustrate the total schedule slippage for the 33 projects that have exited the MPR.¹¹⁰ Twenty post-Kinnaird projects (Figure 7a) and 13 pre-Kinnaird projects (Figure 7b) have exited the MPR. Total slippage of the 20 post-Kinnaird projects is 37.0 years. Total slippage of the 13 pre-Kinnaird projects is 79.6 years. One of the 20 post-Kinnaird projects was a developmental acquisition and four of the 13 pre-Kinnaird acquisitions were developmental.

2.32 In relation to the 20 exited post-Kinnaird MPR projects (see Figure 9a, on p.62):

- two were ACAT I with an average slippage of 37 months;
- eleven were ACAT II with an average slippage of 15 months; and
- seven were ACAT III with an average slippage of 12 months.

2.33 Of the 13 exited pre-Kinnaird MPR projects (see Figure 9b, p.63):

- one was ACAT I with slippage of 77 months¹¹¹;
- six were ACAT II with an average slippage of 89 months;
- five were ACAT III with an average slippage of 47 months; and
- one was ACAT IV with slippage of 107 months.¹¹²

2.34 Figures 7a and 7b indicate that the inclusion of MOTS acquisitions contributed, *prima facie*, to a reduction in schedule slippage in the Major Projects portfolio. For projects that have exited the MPR, MOTS projects reported an average of 13 months of slippage per project, Australianised MOTS projects reported an average of 38 months, and developmental projects reported an average of 96 months. Decisions on whether to undertake developmental projects should be considered on a risk basis.¹¹³ In this context, the consideration of risk should be holistic and weigh up the level of capability to be acquired while having regard to Defence's past experience in managing the delivery of developmental projects.

2.35 Figures 6, 7a and 7b also illustrate that older projects have experienced the most slippage. These projects tended to be more developmental (complex) in nature and typically experienced schedule slippage in the past and have often continued to do so. This demonstrates an ongoing trend of slippage in historically late projects, which is more pronounced in older projects. This trend is also visible, but less prominent, in newer projects.

108 Slippage refers to a delay in the current forecast date compared to the original government approved date of Final Operational Capability (FOC).

109 Future Frigates and Future Subs are excluded from this analysis as they did not have FOC dates approved by government at 30 June 2021.

110 Hornet Refurb and BMS are excluded as they did not have FOC dates approved by government.

111 Wedgetail project.

112 Collins RCS project.

113 Of the two projects added to the MPR in 2020–21, one is developmental (JORN Upgrade).

2.36 Figure 8, on p.61, indicates that for current projects graded at the ACAT I level, there was an average of 43 months slippage. Projects at the ACAT II level experienced an average of 21 months slippage. For projects that had exited the MPR (see Figures 9a and 9b, on p.62–63):

- ACAT I projects reported an average of 57 months slippage;
- ACAT II projects reported an average of 42 months slippage;
- ACAT III projects reported an average of 28 months slippage; and
- the ACAT IV project reported 107 months slippage.¹¹⁴

2.37 Three developmental projects, Hawkei, JORN Upgrade, and ANZAC Air Search Radar Repl, are yet to experience slippage to their FOC dates. However, these projects have experienced slippage to design reviews, test programs, or material release milestones.

2.38 Hawkei has experienced 24 months slippage to the Production Reliability Acceptance Test, leading to 17 months slippage to Initial Materiel Release (IMR) — which was declared in May 2020 with four caveats, which have now been resolved.¹¹⁵ Hawkei experienced an additional six-month delay pending resolution of a vehicle safety incident and a further five month delay due to vehicle integration issues.

2.39 JORN Upgrade experienced persistent lag in execution of the systems engineering program, leading to 17 months of slippage to the System Definition Review and at least two years of slippage to the Preliminary Design Review. FOC is expected to be affected; the amount of slippage to this milestone is not yet known, but the delay is anticipated to be several years. Key drivers for the delays are predominantly attributed to the underestimation of JORN systems engineering complexity and required design effort.

2.40 ANZAC Air Search Radar Repl experienced a total of 18 months of slippage to the original definition of IMR due to delays in receiving Identification Friend or Foe certification, which was impacted by COVID-19 travel restrictions. Early project milestones have also been delayed by manufacturing delays, delays in the contractor obtaining Environmental Qualification for equipment, limited numbers of test facilities and longer than anticipated test durations.

2.41 In contrast, a recent MOTS project, Pacific Patrol Boat Repl, has adhered more closely to the design and materiel release schedule with only minor variances. This indicates that although developmental projects currently in the MPR are not reporting significantly more slippage to FOC than MOTS projects, developmental projects still carry a higher level of technical risk.

2.42 Four¹¹⁶ of the eight current ACAT I projects and six¹¹⁷ of the 11 current ACAT II projects have experienced slippage to their FOC dates. There are no ACAT III or IV projects in the 2020–21 MPR.

2.43 The average slippage for ACAT I projects in this year's MPR is 42 months, and the average for ACAT II projects is 21 months. This indicates that ACAT I projects currently in the MPR are reporting more slippage to FOC than ACAT II projects and carry a higher level of technical risk.

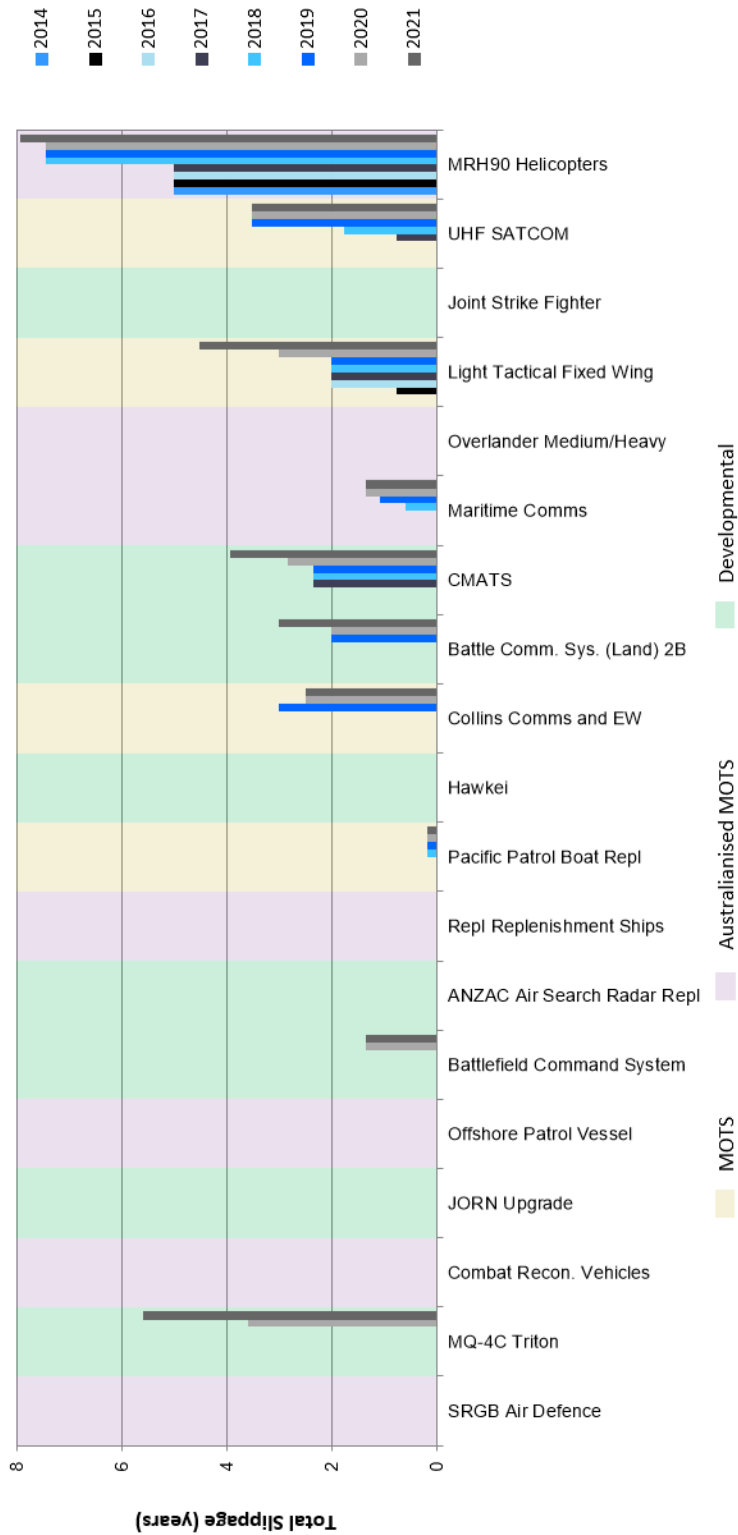
114 Collins RCS project.

115 See the Hawkei PDSS in **Part 3** of this report.

116 MRH90 Helicopters, CMATS, Battlefield Command System, and Battle Comm. Sys. (Land) 2B.

117 MQ-4C Triton, Light Tactical Fixed Wing, Collins Comms and EW, Pacific Patrol Boat Repl, Maritime Comms, and UHF SATCOM.

Figure 6: Current Major Projects — total slippage post Second Pass approval and acquisition type by approval date (years)

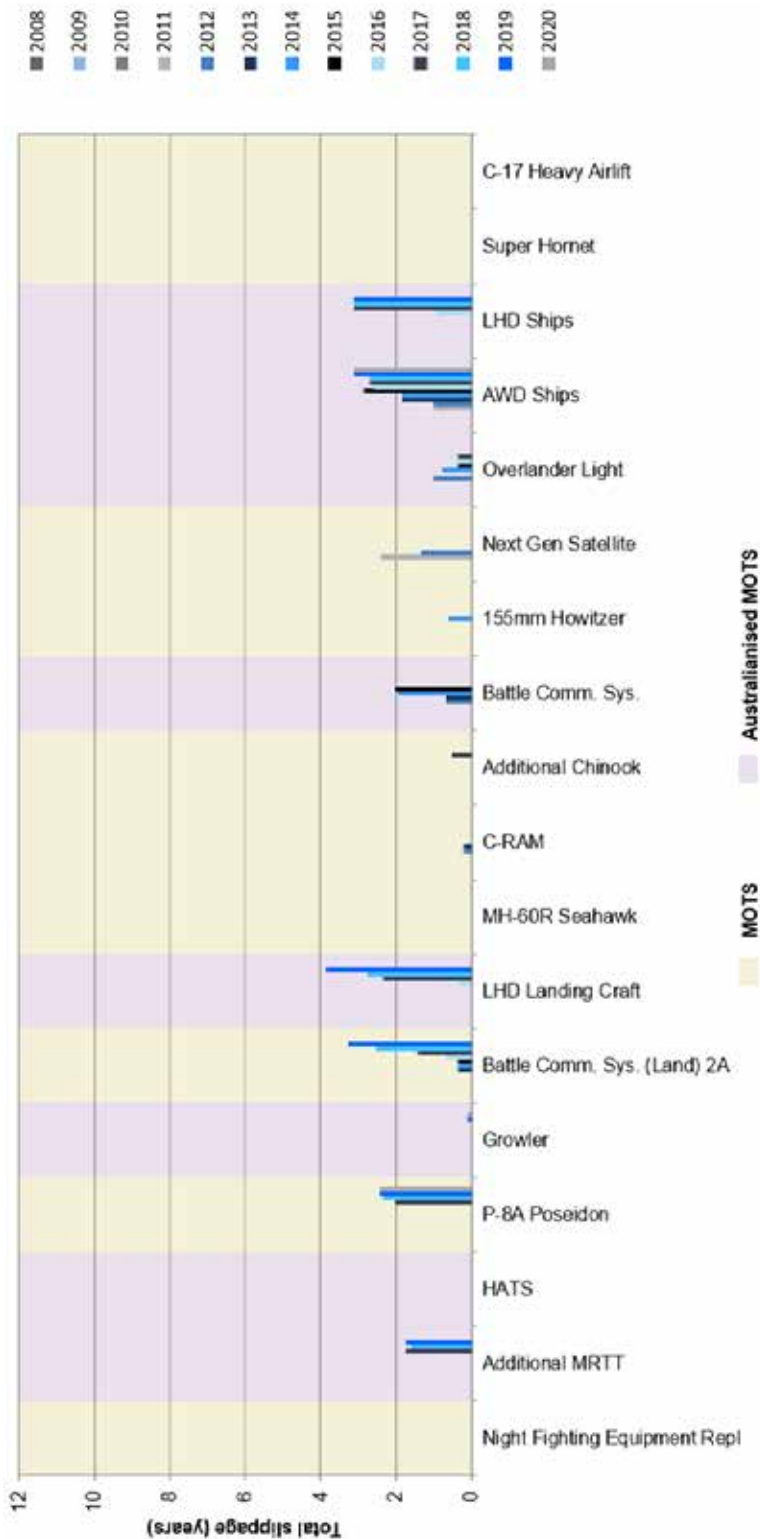


Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates. The Future Frigates and Future Subs projects did not have government approved FOC dates at 30 June 2021.

Note 2: The JORN Upgrade project FOC forecast is disclosed in the PDSS as 'TBA'.

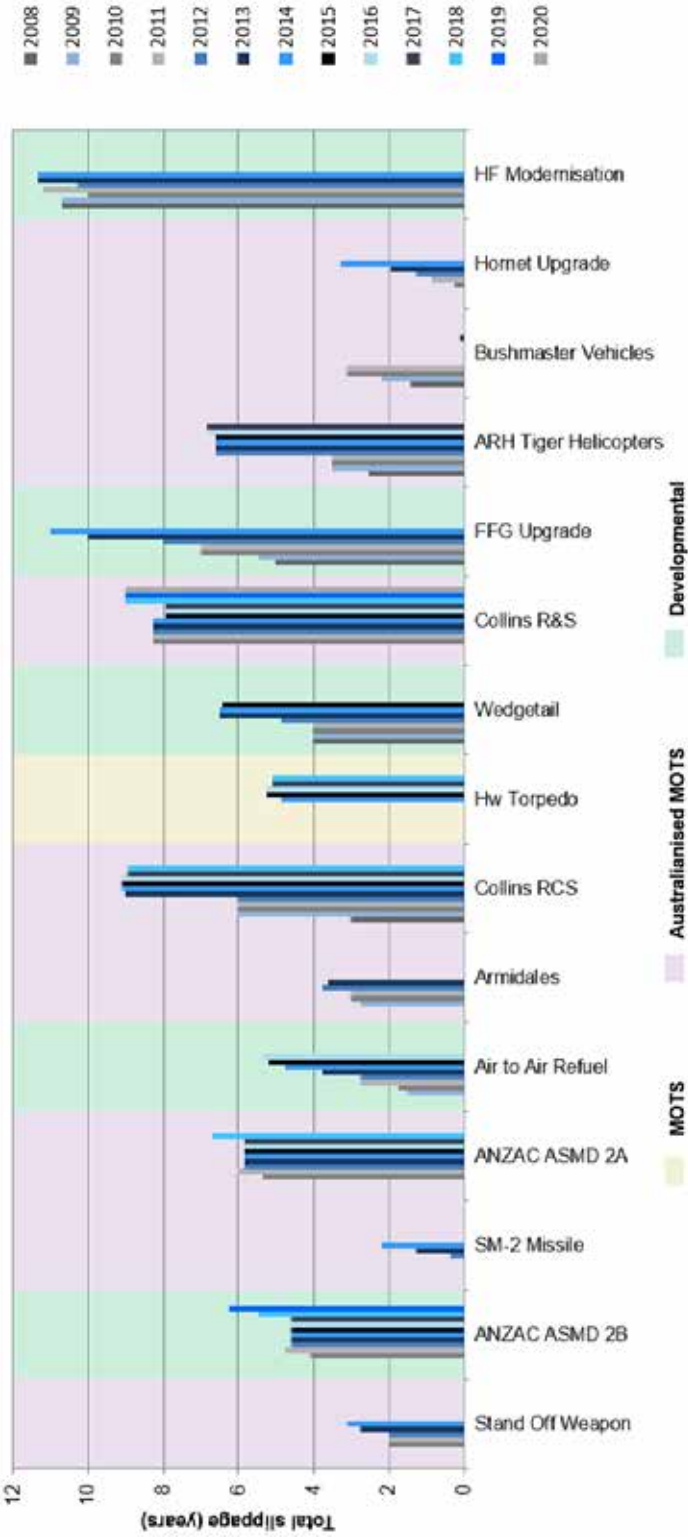
Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Figure 7a: Exited Major Projects (approved post-2005) — total slippage post Second Pass approval and acquisition type by approval date (years)



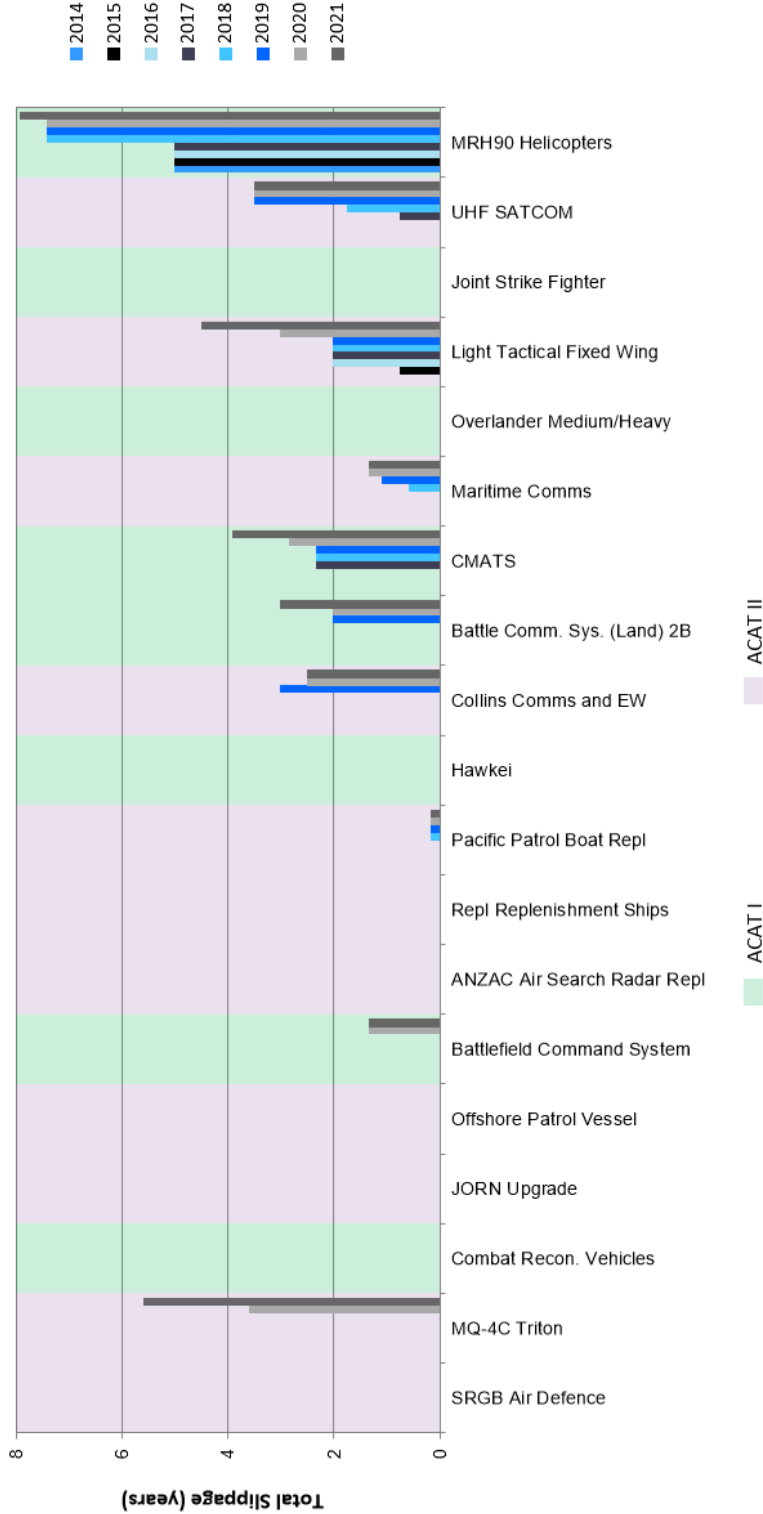
Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates. The Hornet Refurb and BMS projects did not have FOC dates.
Note 2: The slippage shown for Next Gen Satellite relates to the final capability milestones at the time. By the time it reached FOC, a new final capability milestone had been introduced which reduced this slippage.
Note 3: These projects were approved after the Kinnaid reforms were implemented.
Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Figure 7b: Exited Major Projects (approved pre-2005) — total slippage post Second Pass approval and acquisition type by approval date (years)



Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates. The Hornet Refurb and BMS projects did not have FOC dates.
Note 2: These projects were approved prior to the Kinnaird reforms being implemented.
Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Figure 8: Current Major Projects — total slippage post Second Pass approval and ACAT rating by approval date (years)

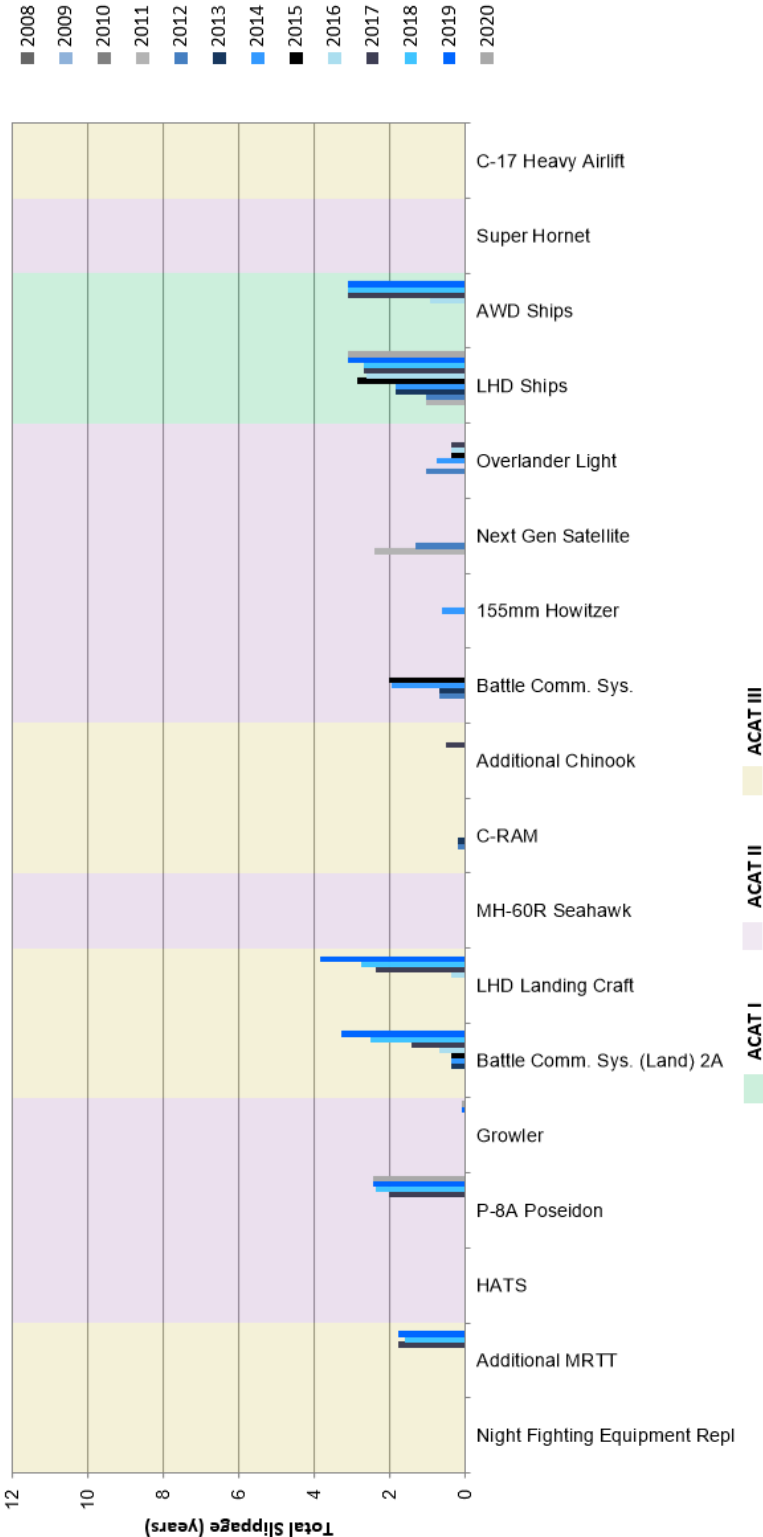


Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates. The Future Frigates and Future Subs projects did not have government approved FOC dates at 30 June 2021.

Note 2: The JORN Upgrade project FOC forecast is disclosed in the PDSS as 'TBA'.

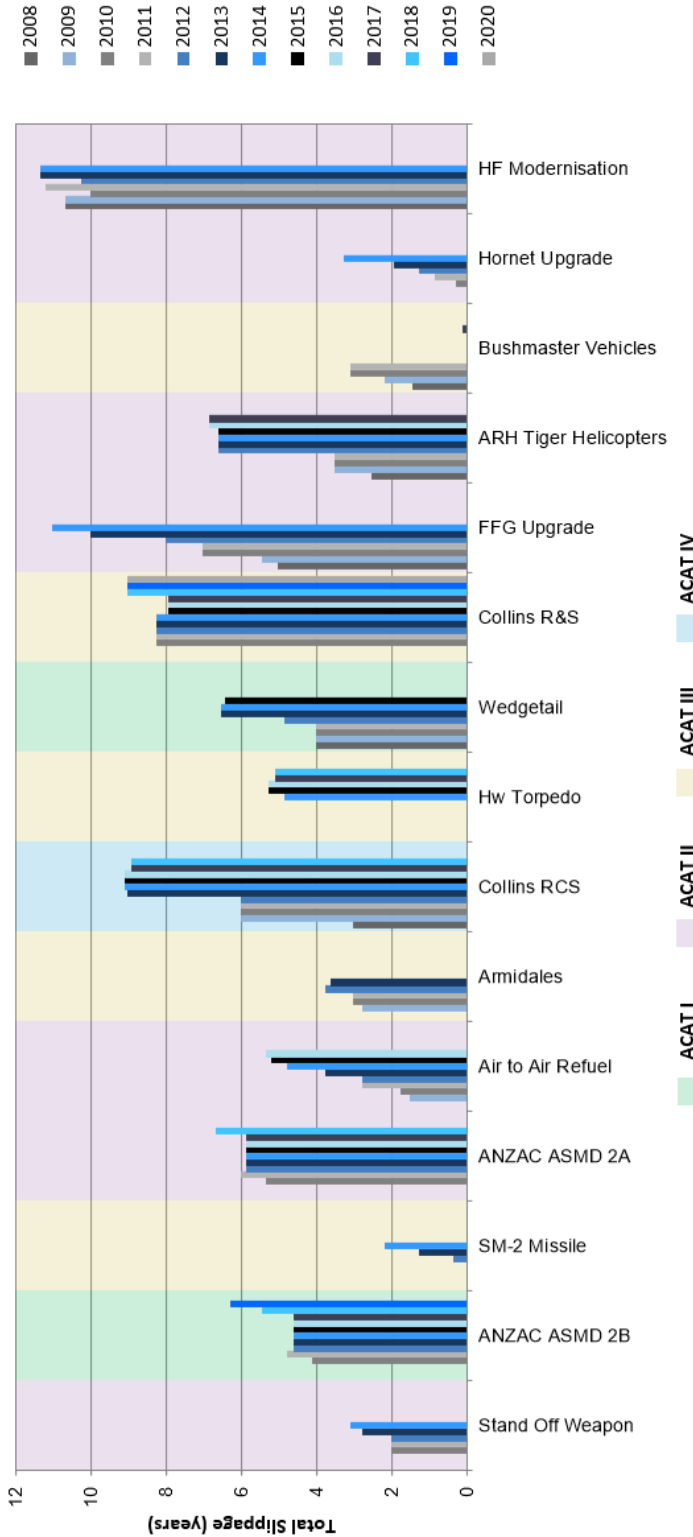
Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Figure 9a: Exited Major Projects (approved post-2005) — total slippage post Second Pass approval and ACAT rating by approval date (years)



Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates. The Hornet Refurb and BMS projects did not have FOC dates.
Note 2: The slippage shown for Next Gen Satellite related to the final capability milestones at the time. By the time it reached FOC, a new final capability milestone had been introduced which reduced this slippage.
Note 3: These projects were approved following implementation of the Kinnaid reforms in 2005.
Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Figure 9b: Exited Major Projects (approved pre-2005) — total slippage post Second Pass approval and ACAT rating by approval date (years)



Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates. The Hornet Refurb and BMS projects did not have FOC dates.
Note 2: These projects were approved prior to the Kinnaird reforms being implemented.
Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Schedule performance

2.44 The figures and tables that follow illustrate, for the selected Major Projects:

- the original and 30 June 2021 forecasts for achieving FOC;
- in-year schedule changes to achieving FOC; and
- total schedule slippage across the Major Projects.

Original and 30 June 2021 Final Operational Capability forecasts

2.45 Figure 10, on p.65, presents information on the selected Major Projects' original and 30 June 2021 forecasts for achieving FOC. Total schedule slippage for the 21 Major Projects as at 30 June 2021 was 405 months compared to the initial prediction when approved by government.¹¹⁸ This represents a 23 per cent increase on the approved schedule.

2.46 Of the 21 projects in the 2020–21 report, ten have experienced schedule slippage (not including JORN Upgrade, which discloses its FOC forecast as 'TBA' and expects this milestone to slip by a currently unknown magnitude, primarily due to the underestimation of JORN systems engineering complexity and required design effort) and two did not have FOC dates approved by government at 30 June 2021.

2.47 Total schedule slippage across the Major Projects was 405 months in 2020–21. This is 102 months lower than the figure of 507 months reported in the 2019–20 MPR. The difference is mainly due to the exit of projects with significant slippage — including AWD ships, P-8A Poseidon, Growler and Collins R&S — which reduced the total accumulated slippage by 175 months. This was offset by in-year slippage for MRH90 Helicopters (associated with remediation of technical difficulties and reliability issues), MQ-4C Triton (associated with changes in the planned aircraft delivery schedule), Light Tactical Fixed Wing (with Defence revalidating the business case for the delivery of this project's remaining scope), CMATS (associated with the replanning of deliverables), and Battle Comm. Sys. (Land) 2B (as a result of COVID-19 impacts). These five projects, combined, added 73 months to schedule slippage in 2020–21.

2.48 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 upgrade activities can also result in schedule delay (for example, Maritime Comms).¹¹⁹

2.49 A closer examination of the reasons for schedule slippage demonstrates the importance of initial assessments of project complexity. Experience indicates that a key factor is whether a project is MOTS, Australianised MOTS or developmental.¹²⁰ One project, MRH90 Helicopters¹²¹, was originally misclassified as MOTS. The project was reclassified by Defence to Australianised MOTS (i.e. more developmental) subsequent to Second Pass approval, and a Defence Independent

118 Slippage refers to a delay in the current forecast date compared to the original government approved date of FOC. These figures exclude delays to a project's schedule that do not result in slippage past the original government approved date, and schedule reductions over the life of the project.

119 See the Maritime Comms PDSS in **Part 3** of this report.

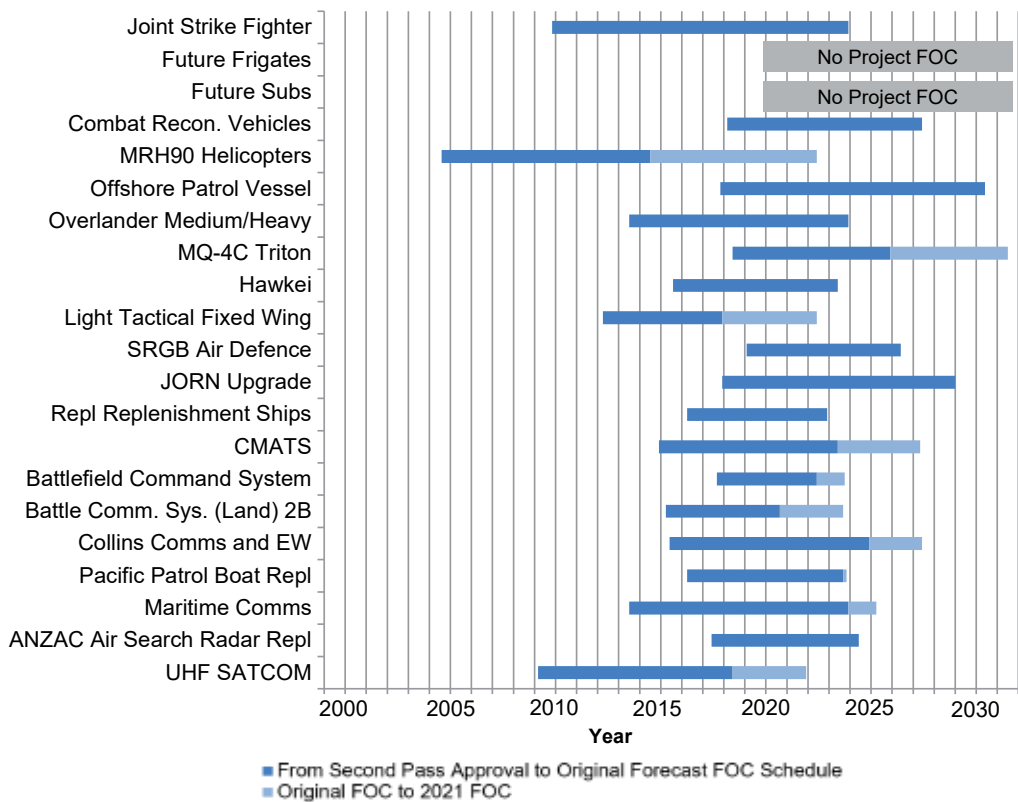
120 Auditor-General Report No.6 2013–14 *Capability Development Reform*, paragraphs 9.1 to 9.4, pp.198–199.

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

Assurance Review of this project in December 2020 noted that ‘[MRH-90] was a developmental platform’. This project has continued to experience schedule slippage, with an additional six months slippage in 2020–21. Another project, UHF SATCOM, is classified as MOTS but includes a significant software development component. Delays in software development have led to 42 months of slippage to the FOC milestone, however there were no additional delays in 2020–21.

2.50 Figure 10, below, indicates that no projects are currently forecasting an FOC date earlier than originally approved. However, a number of projects have experienced both schedule recovery and delay that has offset that recovery. Projects fitting this pattern are Joint Strike Fighter, Overlander Medium/Heavy, Repl Replenishment Ships, and Collins Comms and EW. In the case of Joint Strike Fighter, Overlander Medium/Heavy, and Repl Replenishment Ships, their schedule recovery and schedule delay is equal such that all three projects are currently forecasting the achievement of FOC as originally approved by government. In total, these four projects have contributed 28 months of schedule recovery to the selected Major Projects.

Figure 10: Projects’ original and 30 June 2021 Final Operational Capability forecasts



Note 1: Future Frigates and Future Subs did not have government approved FOC dates at 30 June 2021. The JORN Upgrade and CMATS FOC forecasts are disclosed in their PDSSs as ‘TBA’.

Source: ANAO analysis of the 2020–21 PDSSs.

In-year schedule performance

2.51 In 2020–21, there was schedule slippage of 73 months in the forecast achievement of FOC across 19 of the Major Projects¹²², as shown in Figure 11, on p.67. In-year project performance, measured by slippage over 12 months, may not reflect the project trend.

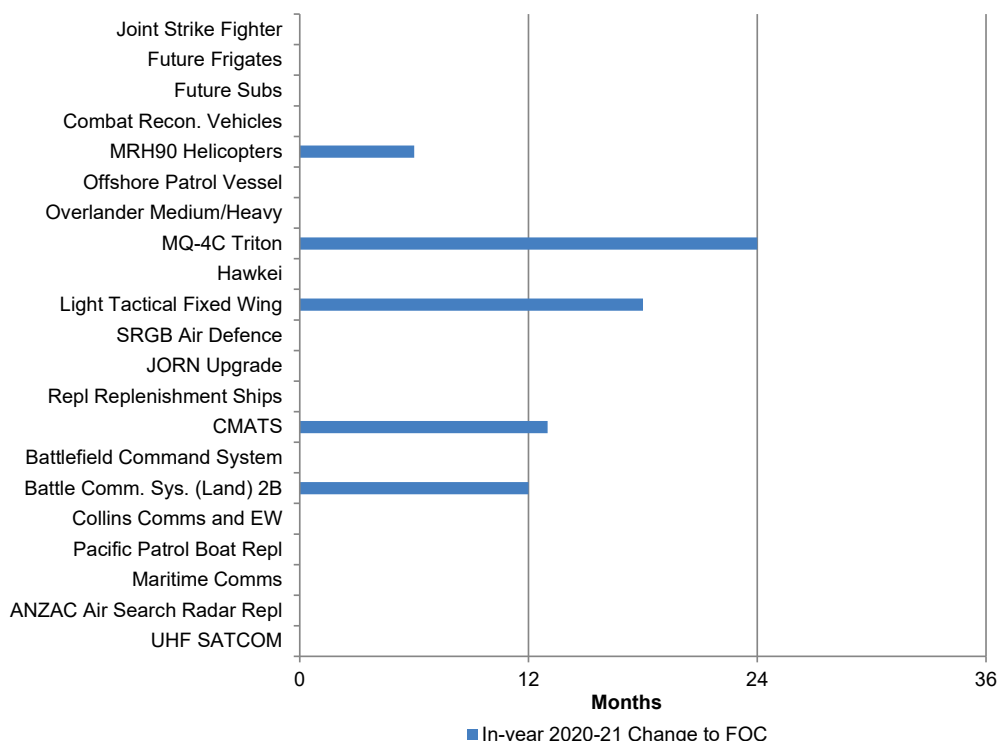
2.52 In-year schedule slippage occurred for the following five projects¹²³:

- MRH90 Helicopters — the variance reflects ongoing delays in the delivery of capabilities resulting from technical deficiencies and issues resulting from replacement or re-design.
- MQ-4C Triton — the variance reflects the alignment of the project's FOC schedule with the aircraft production schedule.
- Light Tactical Fixed Wing — FOC has been delayed while Defence re-evaluates the business case for delivery of this project's remaining capability.
- CMATS — FOC is disclosed in the PDSS as 'TBA' while Thales replans deliverables and the flow on impacts are assessed. The PDSS reported 13 months slippage.
- Battle Comm. Sys. (Land) 2B — FOC has been delayed due to an extension to the project schedule as a result of COVID-19 delays.

122 Future Frigates and Future Subs are excluded from this analysis as they did not have FOC milestones approved by government at 30 June 2021. The JORN Upgrade and CMATS projects FOC forecast is disclosed in the PDSS as 'TBA'. CMATS has disclosed 13 months slippage.

123 In the *Statement by the Secretary of Defence* in **Part 3** of this report, the Secretary also makes reference to additional information on delays, including to Future Frigates and MRH90 Helicopters, and achieved milestone dates for Future Subs, Offshore Patrol Vessel, Repl Replenishment Ships, Maritime Comms, ANZAC Air Search Radar Repl, and UHF SATCOM.

Figure 11: In-year (2020–21) schedule changes to achieving Final Operational Capability



Note: Defence's PDSSs indicate that 14 of the 19 Major Projects did not record changes to their FOC dates this year. Future Frigates and Future Subs did not have FOC dates approved by government at 30 June 2021. The JORN Upgrade and CMATS projects' FOC forecasts are disclosed in the PDSS as 'TBA'. The delays for the JORN Upgrade project are anticipated to be several years and CMATS has disclosed 13 months slippage in 2020–21.

Source: ANAO analysis of the 2020–21 PDSSs.

2.53 Project delays may indicate unanticipated problems with project progress or optimism in previous forecasting, regardless of whether the delay makes the project later than originally approved by government. All delays should be monitored to ensure that a project remains on track and any issues can be managed.

Schedule performance by year of entry to Major Projects Report

2.54 Table 11, on p.68, shows the accumulated schedule slippage of the Major Projects included in the 2020–21 MPR.¹²⁴ The table shows that over a third of the total schedule slippage across the selected Major Projects (33.8 years or 405 months) comprises slippage from the two oldest projects, approved prior to 2010.

¹²⁴ Tables 3 and 4, on pp.12 and 13 respectively, report on the slippage for each project that has been in the MPR since 2007–08.

Table 11: Project slippage as at 30 June 2021

Project	Second Pass Approval date	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/21 FOC date	No. of months slippage between Original FOC and 30/6/21 FOC date
MRH90 Helicopters	August 2004	119	214	95
UHF SATCOM	March 2009	111	153	42
Joint Strike Fighter	November 2009	169	169	0
Light Tactical Fixed Wing	April 2012	68	122	54
Maritime Comms	July 2013	125	141	16
Overlander Medium/Heavy	July 2013	125	125	0
CMATS	December 2014	102	149	47
Battle Comm. Sys. (Land) 2B	April 2015	65	101	36
Collins Comms and EW	June 2015	114	144	30
Hawkei	August 2015	94	94	0
Repl Replenishment Ships	April 2016	80	80	0
Pacific Patrol Boat Repl	April 2016	89	91	2
ANZAC Air Search Radar Repl	June 2017	84	84	0
Battlefield Command System	September 2017	57	73	16
Offshore Patrol Vessel	November 2017	151	151	0
Combat Recon. Vehicles	March 2018	111	111	0
MQ-4C Triton	June 2018	90	157	67
SRGB Air Defence	February 2019	88	88	0
Total - all projects with slippage		1754	2159	405

Note 1: Future Frigates and Future Subs did not have FOC dates approved by government at 30 June 2021. The JORN Upgrade and CMATS projects FOC forecast is disclosed in the PDSS as 'TBA'. The delays for the JORN Upgrade project are anticipated to be several years. CMATS has disclosed 13 months delay in 2020–21.

Source: ANAO analysis of the 2020–21 PDSSs.

Capability performance analysis

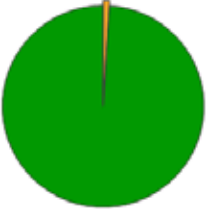
2.56 Defence defines capability as the power to achieve a desired operational effect in a nominated environment, within a specified time, and to sustain that effect for a designated period.¹²⁵ An operational effect is achieved by combining the nine Fundamental Inputs to Capability — organisation, command and management, personnel, collective training, major systems, facilities and training areas, supplies, support, and industry — and undertaking designated operations.¹²⁶

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

2.58 The Defence PDSSs report that 13 projects in this year's MPR will deliver all their key capability requirements without elevated levels of risk to the achievement of requirements.¹²⁷ Defence's assessment indicates that some elements of the capability required may be 'under threat', but the risk is assessed as 'manageable'. The six project offices experiencing challenges with expected capability delivery (2019–20: five) were Joint Strike Fighter, MRH90 Helicopters, Overlander Medium/Heavy, Light Tactical Fixed Wing¹²⁸, Battlefield Command System, and Battle Comms. Sys. Land (2B). Two of these projects, Light Tactical Fixed Wing and Battlefield Command System, report that they are unable to deliver all the required capability by FOC.

2.59 Table 12, below, summarises the issues reported by Defence in its PDSSs as impacting the achievement of the expected capabilities.

Table 12: Issues impacting expected material capability delivery performance in 2020–21

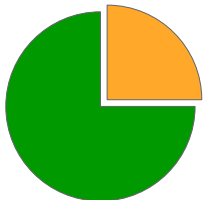

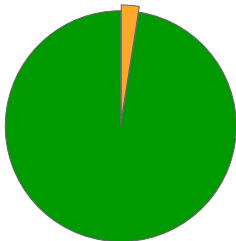
Project	Amber %	Red %	Explanation in PDSS
Joint Strike Fighter 	1	0	AIR 6000 Phase 2A/B has options to deliver Maritime Strike capabilities in a timeframe closely following that of the United States Navy. Phase 2A/B will also continue to invest in F-35A development toward advanced Maritime Strike options for consideration under AIR 3023 in the context of a Joint Maritime Strike strategy.

¹²⁵ Department of Defence, *Defence Capability Manual*, Defence, Canberra, 2020, p. A-2.

¹²⁶ *ibid*, p.12.

¹²⁷ Future Frigates and Future Subs did not have government approved materiel capability delivery at 30 June 2021 and are therefore excluded from this analysis. The *Statement by the Secretary of Defence* includes information on delivery of the Future Subs project post 30 June 2021.

¹²⁸ This project was previously referred to as Battlefield Airlifter.

Project	Amber %	Red %	Explanation in PDSS
MRH90 Helicopters 	25	0	MRH Project Office continues to work with industry to contract, redesign and deliver outstanding role equipment including the Taipan Gun Mount, Common Mission Management System, Aero-Medical Evacuation – Mature (AME-M) capability.
Overlander Medium/Heavy 	11	0	IOC was achieved with caveats due to delay in achievement of air certification. Achieving air certification by FOC remains a medium risk post mitigation. Schedule management remains a key focus and is being closely managed by CASG and the Capability Manager.
Battle Comm. Sys. (Land) 2B 	3	0	The Project is managing schedule risks associated with the Terrestrial Range Extension system scope of work as expressed in the Materiel Acquisition Agreement and supporting suite of Capability Definition Documentation.

Project	Amber %	Red %	Explanation in PDSS
Light Tactical Fixed Wing (previously Battlefield Airlifter)	0	3	A simulator with less mission functionality will be procured and \$35m is set aside for risk management of future platform obsolescence (avionics).
Battlefield Command System	0	9	Based on direction from the Army program sponsor, the project does not expect to deliver the WINBMS capability within the M1A1. Further, also based on direction from the Army program sponsor, the project does not expect to deliver the Hawkei GSV node: this is offset by the direction from the Army Program Sponsor to increase the delivered quantities of Hawkei C2V and MNV nodes. This approach is expected to be confirmed following government consideration.

Note 1: Amber indicates that the capability is under threat but considered manageable for that portion of the pie chart.

Note 2: Red indicates that the capability is unlikely to be met for that portion in the pie chart.

Source: Defence Project Data Summary Sheets (PDSS).

Capability reporting

2.60 Since the 2009–10 MPR, capability reporting¹²⁹ has been based on Defence's prediction of the final capability that would be achieved on the basis of deliverables and/or activities completed. This assessment of capability performance (Expected Capability) is measured against the Materiel Release Milestones (MRMs) and Completion Criteria specified in each project's Materiel Acquisition Agreement (MAA). This is distinct from an assessment of whether milestones will be achieved on schedule. As the ANAO has previously noted, this data involves making certain assumptions in forecasting achievements and is therefore subjective in approach.¹³⁰

2.61 For example, the Light Tactical Fixed Wing project reported a 100 per cent Green capability prediction at its inclusion in the MPR in 2013–14. However, the 2013–14 PDSS also reported major risks relating to capability deficiencies arising from the United States Government divesting from the program, with Australia no longer able to rely on United States Air Force processes. These

¹²⁹ As per the 2020–21 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 2020–21 MPR Guidelines also note that the MPR may report on associated sustainment activities (where applicable).

¹³⁰ Auditor-General Report No.17 2010–11 *2009–10 Major Projects Report*, p.35.

risks have continued to affect the project, with a mature training system and a number of baseline capability requirements not expected to be delivered until after FOC. These capability issues were reported in Section 4.1 of the PDSS (Materiel Capability Delivery Performance pie chart) for the first time in 2018–19, indicating that the earlier level of confidence in the project's ability to achieve the required capability may have been overly optimistic. In 2020 the Australian Government approved an operational capability 'pivot' for this project, from 'Battlefield Airlifter' to 'Light Tactical Fixed Wing'. This involved re-scoping and re-scheduling activities, resulting in an updated Materiel Acquisition Agreement (MAA). The revised FOC is anticipated to be achieved in 2021–22. Notwithstanding the 'pivot' relating to this project, which represents a substantive change in capability delivery, the Materiel Capability Delivery Performance pie chart in this year's PDSS includes a slim red wedge representing a three per cent reduction in capability delivery.

2.62 Defence does not have a standard methodology for the assessment of capability delivery performance. A combination of methods is used, including an assessment based on the proportion of overall cost for each milestone, or the percentage the milestone represents with respect to the overall capability. Defence's approach to assessment does not include weighting of the elements of capability, which affects the effectiveness of its reporting.

2.63 Over time, the JCPAA has sought the use of a more robust measure of capability performance.¹³¹ In October 2017, the JCPAA recommended that 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.'¹³²

2.64 Defence made a submission to the JCPAA in March 2018 regarding the JCPAA recommendation, which advised that:

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

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

- A simple percentage of schedule milestones *achieved* to measure progress to date. This is a quantitative assessment that relies on the maintenance of a robust project baseline, which is not dissimilar to the approach proposed by ANAO previously;
- CASG working with Force Design to identify how to measure capability, that considers all elements of Fundamental Inputs to Capability, and that is suitable for unclassified publication; and
- Defence is working towards a new whole of organisational reporting system (the Enterprise Resource Planning (ERP) System) which is expected to roll-out in Financial Year

131 Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 442: Inquiry into the 2012–13 Defence Materiel Organisation Major Projects Report*, (2014), pp.37–39; and Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, *Report 458: Defence Major Projects Report (2014–15)*, (2016), pp.48–49.

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

2020–21. CASG will endeavour to incorporate the work conducted with Force Design on measuring capability.¹³³

2.65 In September 2018, the JCPAA noted that ‘Materiel Capability Delivery Performance charts continue to be ambiguous in displaying actual current capability levels.’¹³⁴

2.66 Defence advised the ANAO in November 2018 that partial progress had been made on its schedule baseline validation activity discussed in paragraph 2.63. The ANAO notes that a measurement of schedule milestones will not necessarily reflect a measurement of capability delivered.

2.67 The Deputy Secretary CASG advised the JCPAA in a public hearing on 27 May 2020 that:

I acknowledge the issues of the National Audit Office and would like to work with them, as we indicated in our submission, by perhaps reviewing the report and the way in which we articulate the information.¹³⁵

2.68 As at November 2021, Defence was yet to update the method of capability forecasting in the MPR.

Transfers of project scope

2.69 As part of Second Pass Approval, government directs Defence projects to deliver certain defined capabilities within the scope of the project. During a project, Defence may change the scope to be delivered, which can be approved through a revised government approval. A project’s scope may be expanded or reduced and may include a budget increase or decrease for the project to deliver its revised requirements.

2.70 The 2020–21 MPR Guidelines require information on all scope transfers that have occurred across the current Major Projects to be reported in Section 1.3 of the PDSS. These transfers are described in Table 13, below.

2.71 A variety of transfers were also reported by Defence in Section 2.1 of some PDSSs, either as ‘Real Variation – Transfer’ or ‘Real Variation – Scope’. Explanatory notes relating to Section 2.1 indicated that project deliverables, and associated funding, had been transferred into or out of the relevant project.¹³⁶ These transfers are also described in Table 13.

Table 13: Examples of transfers of scope occurring in the Major Projects as at 30 June 2021

Project	Year of transfer	Description
Joint Strike Fighter ¹	2018	Project scope worth \$1.5bn was transferred to future (unapproved) phases of the AIR6000 program, with no corresponding transfer of funds out of the project budget.

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

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

135 Commonwealth, Public Hearing, Joint Committee of Public Accounts and Audit, 27 May 2020, Mr T Fraser, Deputy Secretary, Capability Acquisition and Sustainment Group, Department of Defence, p. 3.

136 This approach is not strictly consistent with the intent of MPR Guidelines, which focus on the reporting of transferred scope out of a project without a commensurate transfer of budget. The ANAO will work with Defence to improve clarity of reporting in relation to transfers of scope in the next MPR.

Project	Year of transfer	Description
Future Subs	2020	Project scope worth \$10.3m was transferred to the CIOG [Chief Information Officer Group] component of SEA1000 Phase 1B for the Defence Secret Environment – International and equity provided to Australian Naval Infrastructure for the Submarine Construction Yard.
	2021	Project scope worth \$6.4m was transferred to the CIOG component of SEA1000 Phase 1B for the Defence Secret Environment – International.
MRH90 Helicopters	2018	Transfer to DE&IG [Defence Estate and Infrastructure Group] for Facilities Infrastructure (\$20.0m), temporary amenities at 6 Aviation Regiment (\$0.2m) and for facility remediation at 5 Aviation Regiment (\$0.05m).
	2020	Project scope was expanded by \$31.5m for Full Flight Mission Simulator.
Light Tactical Fixed Wing	2019	Project scope worth \$1.0m was transferred to Defence Science and Technology Group for the provision of ongoing contractor technical support for the Structural Substantiation Program.
JORN Upgrade	2020	Project scope worth \$2.5m was transferred in from Estate and Infrastructure Group (E&IG) to support AIR2025 Phase 6, which included replacing a facility at the Radar 3 Transmit site which is best delivered by the JORN Prime Contractor, as it involves specialist fit-out and coordinated delivery within JORN operational constraints.

Note 1: The transfer for Joint Strike Fighter was reported in Auditor-General Report No.19 2019–20 *2018–19 Major Projects Report*, paragraphs 1.38–1.39.

Source: 2020–21 Defence PDSSs.

Part 2. Defence Major Projects Report

Secretary's Foreword

I am pleased to provide the 2020-21 Major Projects Report, in conjunction with the Australian National Audit Office, on 21 Defence major capability acquisition projects, delivered by the Capability Acquisition and Sustainment Group.

The 14th annual Major Projects Report provides transparency on the progress of Defence's most complex acquisition projects. The Major Projects Report is a valuable tool to inform the Parliament and Australian public on Defence capability and related expenditure.

As at 30 June 2021, Defence was managing 161 major and 13 minor acquisition projects in support of the Australian Defence Force with a total acquisition value of \$121.6 billion.

The 21 projects within the 2020-21 Major Projects Report have a combined total approved budget of \$58 billion and total in year budget of \$6.2 billion. Of note are the following project achievements during 2020-21 which support delivery of important capability for the Australian Defence Force and wider Indo-Pacific region:

- Pacific Patrol Boat Replacement program – in 2020-21, five vessels were delivered to our regional neighbours, Palau, Kiribati, Tonga, Papua New Guinea and Solomon Islands. Defence has now delivered 11 vessels.
- Joint Strike Fighter – Initial Operational Capability was declared in December 2020 and the Joint Strike Fighter can now be operationally deployed.
- Replacement Replenishment Ships – the first of two new Supply class replenishment ships, HMAS *Supply* was commissioned into the Royal Australian Navy and achieved Initial Operational Readiness in April 2021.

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



Greg Moriarty
Secretary
Department of Defence
02 December 2021

Overview

As at 30 June 2021, Capability Acquisition and Sustainment Group (CASG) was managing 161 major and 13 minor acquisition projects at various phases in the Capability Life Cycle, worth a total acquisition cost of \$121.6 billion. The 2020-21 acquisition budget of \$9.3 billion was achieved, with acquisition spend up \$1.3 billion from the prior year.

During this period 25 major and minor acquisition projects were closed. The 25 closed projects had a final spend over their life of \$6.1 billion against a budget of \$7.2 billion. About half the budget savings was in the Super Hornet acquisition project.

The Major Projects Report (MPR) outlines 21 projects, delivered by CASG, with a total acquisition cost of \$58 billion. This accounts for 48 per cent of CASG projects by total budget.

Scope of the ANAO review

The purpose of the MPR is to provide transparency and accountability of Defence acquisitions for the benefit of Parliament and other stakeholders. The Australian National Audit Office conducts a priority assurance review of the information provided in the Project Data Summary Sheets (PDSS) at Part 3 of the report to provide confidence to the Parliament and other stakeholders that the information being provided by Defence is accurate and transparent.

The PDSS provided at Part 3 of this report disclose key project activity relating to cost, scope, schedule, risks and issues, and lessons learned up to 30 June 2021. Significant events that have occurred subsequent to 30 June 2021 are disclosed in the *Statement by the Secretary of Defence* and are detailed in Part 3 of the 2021-22 MPR.

Key Achievements and Annual Performance

Overall, the performance of the Department's major capital equipment program in the 2020-21 financial year has been strong.

The 2020-21 reporting period was again dominated by the COVID-19 pandemic that resulted in global disruptions to workforce, travel and supply chains. Defence and Defence Industry continued to display exceptional levels of resilience and adaptability and were able to maintain capability delivery at a high operating tempo. The achievements of CASG in safely continuing to deliver capability to the Australian Defence Force (ADF) demonstrates the high calibre of the professionals in the organisation and the robust processes and controls that enable them.

Defence and industry have largely maintained the scope and pace of the capability projects and programs. Key achievements this year include:

- The commissioning of a further five Guardian Class patrol boats, with 11 now delivered to Pacific nations.
- The F-35A Joint Strike Fighter project reached Initial Operating Capability (IOC) and can now be operationally deployed.
- Hawkei Protected Light Land Mobility System achieved IOC.
- HMAS *Supply* was commissioned into Navy's service.
- Prototyping for the Hunter class frigate commenced on schedule.
- Defence further embedded support for Australian industry to maximise opportunities for involvement in Defence projects, especially small and medium sized enterprises.

In respect of the acquisition projects managed by CASG in 2020-21:

- Achieved the acquisition budget of \$9.3 billion

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- 12 achieved IOC, five on time or ahead of schedule
- six achieved FOC, three on time or ahead of schedule delivery in accordance with second pass approval.

As at 30 June 2021 of the 161 Government approved major projects, two had issues with capability, schedule, or cost which were significant enough to be managed as Projects of Concern. A further 14 projects were identified as Projects of Interest, with risk associated with capability, schedule or cost that warrant further attention from internal Defence line management and senior executives.

The performance of the 21 MPR projects over the 2020-21 period has been largely consistent with the overall performance of the 161 major equipment projects.

- one Project of Concern and nine Projects of Interest
- five projects report in year schedule slippage of between six and 24 months. Eight projects report on track to meet FOC by original forecast date.
- 10 projects reports a budget variation within 10 per cent of the actual in year budget. The remaining 11 projects reported variances of between 12 and 42 per cent.

Entry and exit from MPR

Of the 21 projects included in this report, 19 projects have carried over from last year's report. Six projects have been removed because they achieved Final Operational Capability (FOC) or were considered low risk in achieving final deliverables:

- SEA 4000 Phase 3 – Air Warfare Destroyer Build
- AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
- AIR 5349 Phase 3 – EA-18G Growler Airborne Electronic Attack Capability
- AIR 9000 Phase 8 - Future Naval Aviation Combat System Helicopter
- LAND 53 Phase 1BR – Night Fighting Equipment Replacement
- SEA 1439 Phase 3 – Collins Class Submarine Reliability and Sustainability

Two projects are new inclusions to the MPR:

- LAND 19 Phase 7B – Short Range Ground Based Air Defence
- AIR 2025 Phase 6 – Jindalee Operational Radar Network

Appendix 1 lists the projects that have been removed from the report since its inception including the reason for their removal and expenditure to date as at 30 June 2021.

The project additions and removals are in accordance with MPR Guidelines endorsed by the JCPAA in November 2020 and are published in Part 4 of this report.

Defence Strategic Environment

Significant Defence Events

In this reporting period there have been some significant events for Defence. These represent exciting opportunities for Defence and include:

The establishment of the AUKUS trilateral security partnership between Australia, the United Kingdom and the United States. On 16 September 2021, the Prime Ministers of Australia and the United Kingdom and the President of the United States of America, announced an enhanced trilateral security partnership between the three countries. AUKUS is a framework to enable deeper practical cooperation in developing leading-edge military capabilities and technologies. It will deepen cooperation between our three nations with a focus on improving joint capabilities and

interoperability initially focusing on cyber capabilities, artificial intelligence, quantum technologies, and additional undersea capabilities. AUKUS complements our network of international partnerships and will help ensure that Australia remains a responsible and highly capable security partner in the Indo-Pacific region for decades to come.

Nuclear-Powered Submarines. Australia in collaboration with AUKUS partners, will determine the optimal pathway for the delivery of at least eight nuclear-powered submarines. These submarines will offer enhanced capability compared to conventional submarines. Nuclear-powered submarines have superior characteristics of stealth, speed, manoeuvrability, survivability and endurance when compared to conventional submarines. These abilities will allow for operation in contested areas with a lower risk of detection, and deter actions against Australia's interest. Following the announcement of this intent, Defence has established a multi-agency Nuclear-Powered Submarine Taskforce, which will intensively examine the full suite of requirements in partnership with the United Kingdom and the United States to deliver these submarines.

Cancellation of Attack-Class Submarine program. Following the decision to pursue a nuclear-powered submarine program, the Australian Government decided not to proceed with the Attack Class Submarine Program for the acquisition of 12 conventionally powered submarines. This decision was driven by the deterioration of Australia's strategic environment and is not related to the performance of the Attack Class Submarine Program. Defence acknowledges the impact of this decision and is committed to preserving the contribution the Attack Class project has made to strengthening Australia's defence and shipbuilding industry. This announcement was made outside of the MPR reporting period and is not reflected in the Project Data Summary Sheet for SEA1000 Phase 1B in Part 3 of this report.

The establishment of a Sovereign Guided Weapons Enterprise. On 31 March 2021, the Government announced the acceleration of the creation of a \$1 billion Sovereign Guided Weapons Enterprise. Australia currently relies on key overseas strategic partners, including the United States, for access to a number of guided weapons. The domestic manufacture and supply of weapons will benefit and enhance ADF operational capacity and ensure the availability of stocks. This decision builds on existing capabilities, including the Nulka decoy missile and the Government Owned Contractor Operated explosive factories at Benalla in Victoria and Mulwala in New South Wales.

Support to Industry through COVID-19. As part of the Whole-of-Government response and initiatives, Ministerial leadership and close consultation, Defence has been directly supporting industry through COVID-19 with:

- The implementation of Government initiatives to support defence industry during the pandemic through the Accelerated Payment scheme. Since the start of the pandemic in March 2020 to 30 June 2021, the total value of invoices paid early (from contracted payments) was \$31.7 billion. Defence also prioritised existing activities, bringing forward approximately \$1 billion of economic stimulus investment initiatives.
- Active engagement with defence industry on steps to put in place recovery and COVID mitigation plans as well as support for movement of essential workers across State, Territory and international borders.
- Defence industry was able to rapidly shift from core business and respond with exceptional performance during the busy periods of the pandemic.
 - An Australian manufacturer who, with the help of ADF personnel helped increase production of surgical facemasks. Defence's support filled a short-term gap while the supplier recruited and trained supplementary staff.
 - A family-owned business who joined forces with the Department of Defence to rapidly produce face shields, designed by Defence Science and Technology Group, for frontline healthcare workers.

- A medical provider who developed the surge capacity to create mass treatment and infection control facilities. As a result world-leading, lifesaving wearable medical technology was able to be produced in Australia.

Acquisition environment - generational change and capability modernisation

Defence has embarked on a generational capability modernisation period, with significant investment made into the future frigate program, land vehicle modernisation, and bringing the fifth generation Joint Strike Fighter into service. For these projects to be successful, they need to be delivered in partnership with Australian Industry and maximise Australian industry capabilities wherever possible.

Earlier acquisition models, conceived in the wake of the Kinnaird Review, took a risk averse approach which encouraged the procurement of Off-the-Shelf capabilities, predominantly acquired under Foreign Military Sales. By its nature, this type of acquisition carries less risk and can be delivered faster through existing production lines.

However, the strategic environment changes recognised in the Defence Strategic Update and the associated Force Structure Plan, have heralded a shift from Off-the-Shelf equipment to the most complex developmental projects to meet the more demanding capability requirements. Through 2020-21, CASG (working with Defence Industry) achieved approximately \$17 billion worth of activity, a growth rate of over 15% over 2019-20.

Defence also has a significant focus on consideration of Australian Industry Capability (AIC), to meet Government's commitment to build a sovereign, resilient and internationally competitive defence industrial base. Industry in this context has both an economic prosperity lens (through the desire to maximise AIC outcome), but also a critical ADF warfighting outcome lens (through the Strategic Industrial Capability Priorities), where the sovereign support and supply chain will be essential to the delivery of ADF capability.

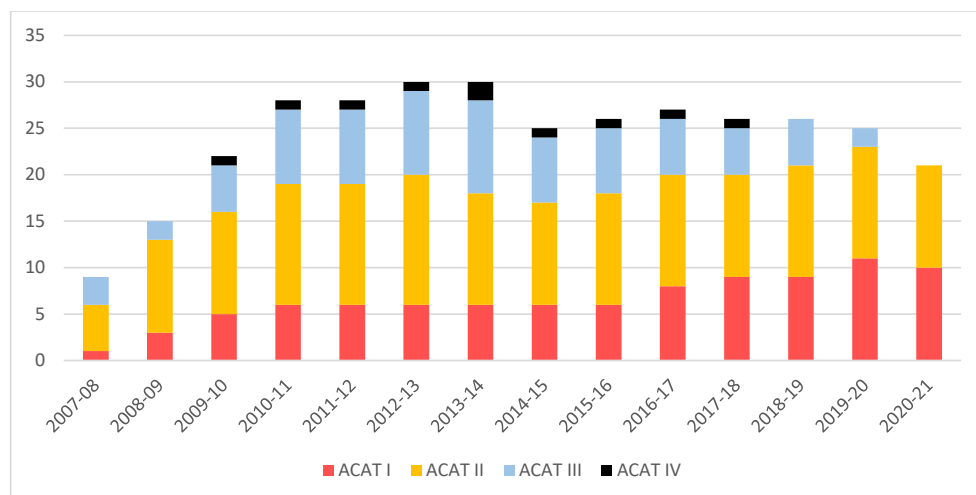
Over the last decade the number of highest complexity (ACAT 1) projects has increased from 11 to 21. Some of these projects carry extreme risk associated with the level of structural and technical complexity and integration (Appendix 2 refers).

Of the 21 projects in the 2020-21 MPR, 10 are the highest complexity ACAT I and 11 are ACAT II. Whilst two are cooperative programs¹³⁷ with the United States Government, none are Foreign Military Sales (FMS) as the prime contract¹³⁸. In comparison the 28 projects in the 2010-11 MPR comprised only six ACAT I and 13 ACAT II, with the remaining being ACAT III and ACAT IV projects. Five of these projects were Foreign Military Sales.

¹³⁷ See AIR6000 Phase 2A/2B and AIR7000 Phase 1B PDSSs for details of major contracts.

¹³⁸ SEA5000 Phase 1, AIR6000 2A/2B, SEA1439 Phase 5B2, AIR8000 Phase 2, LAND19 Phase 7B and SEA1442 Phase 4 list an FMS contract their respective PDSS, and although listed as one of the major contracts it is not the predominant contact and therefore not considered an FMS case.

Table 1 – ACAT complexity of MPR projects by year



The *Lead the Way: Defence Transformation Strategy* was released in November 2020. It provides the vision and an enduring framework for enterprise-wide transformation in support of Defence’s delivery of its strategy and force structure priorities.

The Transformation Strategy is being implemented over two years (January 2021 to December 2022) and consists of 12 key initiatives.

A number of the initiatives will either directly or indirectly enhance Defence’s capacity to manage, develop, deliver and sustain capability.

These initiatives include:

- 3.1. Drive improved capability delivery.
- 3.2. Strengthen Defence’s approach to Australian industry capability, including innovation, export and harnessing opportunities from Australian science and technology.
- 3.3. Adopt a strategic approach to Defence enterprise resilience and supply chain assurance.
- 3.4. Improve Defence’s Strategic Workforce Planning, Learning and Management.
- 3.5. Institute an improved Enterprise Performance Measurement and Reporting framework.

Defence Review of Project Performance

Cost

The Defence Chief Finance Officer provides overall financial assurance on the actual cost and budget data of individual projects included in this report. Project budgets approved by Government take into account the estimated impact of inflation over the life of a project which is known as ‘out-turning’.

All financial data related to Defence’s capital projects and capital programs provided with the 2020-21 Defence Portfolio Budget Statements, Portfolio Additional Estimates Statements, and Annual Report, are presented on an accrual basis. Defence transitioned from cash reporting to accrual

reporting on 1 July 2020. Accrual recognition is considered a better financial measure of contract performance as measurement is linked to contract delivery rather than when payments are made. This transition is expected to support more accurate information on point-in-time budget positions; recording that is more aligned to the contracts and vendor arrangements and less focussed on year-end payments; and easier planning and forecasting for when work occurs rather than when invoices are paid.

The total in-year budget (2020-21) for all the projects listed in the 2020-21 MPR is \$6.2 billion and total approved acquisition cost is \$58 billion. Table 1 lists the 21 projects by total Government approval from highest to lowest total approved budget.

Table 2 2020-21 MPR projects by Total Approved Budget

Project Number	Project Name	Project Name Abbreviation	ACAT	2020-21 In-Year Budget \$m	Total Approved Project Budget \$m
AIR06000PH2A/B	New Air Combat Capability	Joint Strike Fighter	I	2,252.9	15,630.7
SEA05000PH1	Future Frigates	Future Frigates	I	498.4	6,046.9
SEA01000PH1B	Future Submarines Design Acquisition	Future Subs	I	768.3	5,818.2
LND00400PH2	Combat Reconnaissance Vehicles	Combat Recon. Vehicles	I	488.7	5,655.4
AIR09000PH2	Multi-Role Helicopter	MRH90 Helicopters	I	97.3	3,770.0
SEA01180PH1	Offshore Patrol Vessel	Offshore Patrol Vessel	II	252.1	3,669.6
LND00121PH3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	I	216.4	3,397.8
AIR07000PH1B	MQ-4C Triton Remotely Piloted Aircraft System	MQ-4C Triton	II	191.8	1,953.4
LND00121PH4	Protected Mobility Vehicle – Light (PMV-L)	Hawkei	I	425.7	1,952.9
AIR08000PH2	Light Tactical Fixed Wing	Light Tactical Fixed Wing	II	40.7	1,426.1
LND00019PH7B	Short Range Ground Based Air Defence	SRGB Air Defence 1	II	167.5	1,201.0
AIR02025PH6	Jindalee Operational Radar Network	JORN Upgrade 1	II	48.7	1,128.5
SEA01654PH3	Maritime Operational Support Capability	Repl Replenishment Ships	II	208.1	1,082.6
AIR05431PH3	Civil Military Air Management System	CMATS	I	135.5	974.5
LND0200PH2-A	Battlefield Command System	Battlefield Command System	I	116.6	962.3
JNT02072PH2B	Battlespace Communications System Phase 2B	Battle Comm. Sys. (Land) 2B	I	88.3	942.2
SEA01439PH5B2	Collins Class Communications and Electronic Warfare Improvement Program	Collins Comms and EW	II	57.3	608.7
SEA03036PH1	Pacific Patrol Boat Replacement	Pacific Patrol Boat Repl	II	82.2	501.4
SEA01442PH4	Maritime Communications Modernisation	Maritime Comms	II	34.4	434.1
SEA01448PH4B	ANZAC Air Search Radar Replacement	ANZAC Air Search Radar Repl	II	39.9	429.1
JNT02008PH5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	II	7.7	421.3
Total				6,209.5	58,006.6

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Understanding Budget Variation

Real budget variations occur as a result of Government endorsed changes to scope, real cost changes and scope transfers between projects.

Foreign exchange rate variations do not represent real cost variations as they are managed through funding adjustments on a 'no-win/no-loss' basis to offset realised foreign exchange losses or gains. Similarly, in-year variations between Budget, Additional Estimates and Final do not necessarily in themselves represent real cost variations. Defence considers that the Final Budget Forecasts represent the baseline against which in-year project financial performance should be measured.

Subsequent Government approvals leading to real project budget variation includes activities such as:

- Follow-on Second Pass approvals for additional phases of capability
- Tranched or rolling approval processes that have been agreed by Government
- Where projects have merged or transferred cost or scope to realise more efficient project management practices.

In some instances, Real Cost Increases (RCI) require a Government approved budget variation due to unplanned cost and/or scope variation. Historically there has been minimal requirement to apply RCIs to the project budget. There have been no RCIs in this reporting year.

In-Year cost

The 21 projects in the 2020-21 MPR had a combined in year budget of \$6.2 billion. Overall budget variation was \$98m or 1.6%.

The initial Portfolio Budget Statement forecast was \$6.9 billion and mid-year Portfolio Additional Estimates Statement forecast was \$6.4 billion. Table 5b in Appendix 5 lists the forecast expenditure against actual expenditure per project.

In 2020-21 most projects reported spending less than their annual budget allocation. Whilst this is largely consistent with last year's report, the percentage of projects that have reported budget variations greater than 10% of the Final Plan has grown from 32% in 2019-20 to 52% in 2020-21. There are a number of drivers of budget variation including shifting schedule delivery milestones and reprogramming of schedules, less than forecast costs to contracted workforce and other Project office costs, and lower than forecast Foreign Military Sales and United States Government and Cooperative Agreement costs. Additionally, during the pandemic a number of projects brought forward activities to support industry in the early stages of the COVID-19 pandemic.

Across year financial movements occur for a number of reasons including to support movement of delivery schedules, reprogramming of Foreign Military Sales, and foreign exchange variations. An in year variation, or across year financial movement occurs within the total approved project budget.

Causes of budget variation in 2020-21 include:

- LAND 200 Tranche 2 Battlefield Command System. In year expenditure of \$67.5 million against a Final Plan expenditure forecast of \$116.6 million primarily due to finalising contract change proposals and the delay in meeting a software release review milestone.
- SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Improvement Program. In year expenditure of \$39m against a Final Plan expenditure forecast of \$57.3

million due to milestone delays as a result of COVID-19 travel restrictions and lower than forecast Foreign Military Sales and ASC (major contractor) payments.

- SEA 1654 Phase 3 Maritime Operational Support Capability (Replacement Replenishment Ships). In year expenditure of \$150.5 million against a Final Plan expenditure forecast of \$205.1 million primarily due to the transfer of additional works from Spain to Australia and delays to a contract change proposal relating to final sparing deliveries.

Other common reasons for budget variations in 2020-21 include Foreign Exchange adjustment, reprogramming of Foreign Military Sales and restrictions relating to COVID-19 including travel and supply chain.

Appendix 5 further details total budget and in year budget status for each of the MPR projects.

Schedule

CASG projects have continued to deliver successful capability outcomes, noting schedule remains the primary improvement focus and is being driven through the Smart Buyer process and early phases of the Capability Life Cycle.

This year, eight projects report no variation to schedule. The majority of projects continue to report zero or minimal variation to Final Operational Capability (FOC) compared to the originally forecast FOC date. There are however four projects that are reporting more than 50% variation to achieve their originally forecast FOC date. Of the 19 projects carried over from the last report, five projects extended their FOC forecast date within 2020-21. The average FOC variance of the 17 projects¹³⁹ forecasting a FOC date at 30 June 2021 is 21 months. Table 5c at Appendix 5 provides the detailed breakdown for the 21 projects.

Defence and industry pursue an aggressive schedule to delivery capability with urgency. Where schedule slippage has occurred, project managers are working with Defence, Industry and the Capability Manager Representatives to manage the impacts without compromising capability.

Schedule variation occurs for a number of reasons including late delivery, increase in scope, a force majeure event¹⁴⁰ or a deliberate management decision. It also occurs because Defence set ambitious schedule targets to ensure it can provide the ADF with leading edge capability.

Causes of Schedule Variation 2020-21

Four projects recorded an in year schedule variation of between six and 24 months. There are a number of causes for these variations including the impacts of the COVID-19 pandemic affecting supply chains, domestic and international travel restrictions and shutdowns. Through COVID-19, Defence and Industry have innovated and found new ways to work. Many projects have been able to continue without detriment. Some schedules have been impacted by six to 12 months. Other factors include delays to interdependent projects, and technical, reliability and integration issues.

The four projects that reported schedule variation to forecast FOC declaration during the year:

- MRH90 Helicopters – ongoing capability delays have resulted in a revision of FOC. There has been significant work by both Industry and the Commonwealth to define and implement a

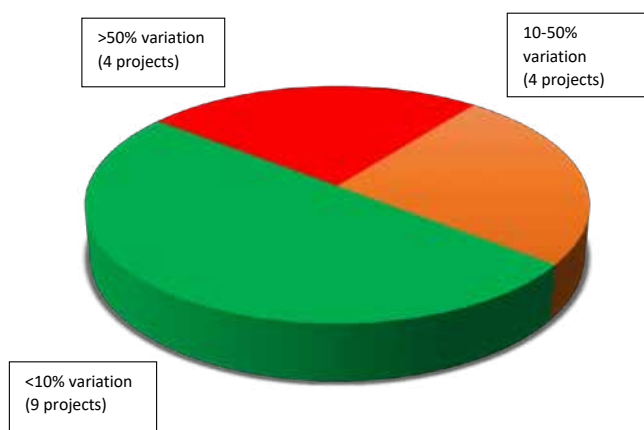
¹³⁹ SEA1000 Phase 1B Future Submarine Design Acquisition and SEA5000 Phase 1 Future Frigates are in design phase and do not have delivery milestones established. AIR5431 Phase 3 Civil Military Air Management System and AIR2025 Phase 6 Jindalee Operational Radar Network are undertaking schedule reviews that will identify a revised FOC date

¹⁴⁰ A force majeure is an event or circumstance which is beyond the control of either party and without fault or negligence, was unable to be prevented. Examples include the closure of the Ferrol shipyard in Spain due to country wide COVID-19 lockdowns.

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.

- MQ-4C Triton – In 2020 the United States Navy announced a two year production funding pause for its Triton program (United States Fiscal years 2021 and 2022). Defence placed Triton project activity on hold whilst analysing the impacts to the Australian program and the broader Maritime Patrol and Response capability. Government considered these impacts within the Tranche 3 proposal in May 2020 and approved the acquisition of a third Triton aircraft. Government agreed revised milestone dates however schedule risk remains.
- Light Tactical Fixed Wing – The Capability Manager conducted a capability revalidation activity for the projects which redefined the expected project outcomes. Government approved the revised scope and subsequent schedule in December 2020.
- Battlespace Communication Systems – The FOC date was extended to accommodate a Contract Change Proposal relating to COVID-19 Delay.

Figure 1 – Schedule variation percentage



Schedule variations are reported based on the achievement of FOC. In most instances the programs are providing effective capability to the ADF prior to FOC.

Schedule variation in early milestones such as IOC and IMR do not necessarily result in a variation to the originally forecast FOC date. Five projects in the 2020-21 MPR with a forecast or actual variation to IMR and IOC are not forecasting a shift of FOC. This is because schedule development will often accommodate overlap in design and production, long production lead times and the ability to redeploy assets or surge a workforce as one phase is completed and another commences.

Materiel Scope and Capability

It is important to understand the difference between materiel scope and capability. A capability in Defence terms is the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. Materiel scope is the delivery of the materiel element of capability. Other fundamental inputs to capability such as workforce, facilities or supporting IT infrastructure are outside the materiel scope.

Calculating 'expected scope delivery' in a percentage term does not distinguish the relative impact some scope may have on overall capability, either up or down. Likewise, measuring the materiel

scope delivery of a project against the final intended capability effect, without considering other fundamental inputs to capability, does not present a true picture of the forecast capability.¹⁴¹

The 'traffic light' assessment of each element is indicative of¹⁴²:

- Green – a high level of confidence that the materiel scope outcome will be met
- Amber – the materiel scope outcome being under risk but still considered manageable and able to be met
- Red – at this stage the materiel scope outcome is unlikely to be fully met.

Of the 21 projects in this MPR:

- 13 projects had 100 per cent of the measure green
- four have measures which are at risk
- two are reporting an element that is unlikely to be fully met
- two projects currently in the design phase are not included¹⁴³.

Table 3 – Details of Projects Reporting Amber or Red Measures

Project	Pie Chart Traffic Light	Narrative for Amber / Red Rating
AIR 6000 Phase 2A/2B - New Air Combat Capability	Amber (1%)	The project has options to deliver Maritime Strike capabilities in a timeframe closely following that of the United States Navy. The project will also continue to invest in F-35A development toward advanced Maritime Strike options for consideration under the Enhanced Maritime Strike for the Air Combat Capability project in the context of a Joint Maritime Strike strategy.
JNT 2072 Phase 2B - Battlespace Communications Systems	Amber (2.5%)	The project is managing schedule risks associated with the Terrestrial Range Extension System scope of work as expressed in the Materiel Acquisition Agreement and supporting suite of Capability Definition Documentation
LAND 121 Phase 3B - Overlander Vehicles	Amber (11%)	IOC was achieved with caveats due to delay in achievement of air certification. Achieving air certification by FOC remains a medium risk after mitigation. Schedule management remains a key focus and is being closely managed by CASG and the Capability Manager
AIR 9000 Phase 2/4/6 - Multi-Role Helicopter	Amber (25%)	MRH Project Office continues to work with industry to contract, redesign and deliver outstanding role equipment including the Taipan Gun Mount, Common Mission Management System, Aero-Medical Evacuation capability.
LAND 200 Tranche 2 - Battlefield Command System	Red (9%)	The project does not expect to deliver the Weapons Integrated Battle Management System under the current contract for the M1A1 tank. Additionally the project does not expect to deliver the equipment for the Hawkei General Service Vehicle (Utility variant), however this will be offset by an increase in the quantities delivered for the Hawkei Command and Control Vehicle and the Manoeuvre Vehicle.

¹⁴¹ Joint Committee of Public Accounts and Audit Reports 458 and 468 recommended Defence review the procedure for development of expected capability estimates for future MPRs. The term 'capability' can be considered as the capability effect available to the ADF and in reporting terms, the project scope being delivered when combined with the required fundamental inputs to capability.

¹⁴² 2020-21 Major Projects Report Guidelines endorsed by the Joint Committee of Public Accounts and Audit November 2020 refers to capability rather than materiel scope which incorrectly attributes an MPR project outcome to the final capability.

¹⁴³ SEA1000 Phase 1B Future Submarine Design Acquisition and SEA5000 Future Frigates are in design phase and do not have materiel scope established.

AIR 8000 Phase 2 - Light Tactical Fixed Wing	Red (3%)	Following a technical and value for money evaluation it was decided to retain the existing Aircraft Self Protection capability rather than upgrade it. A simulator with less mission functionality will be procured. \$35m is set aside for risk management of future platform obsolescence (avionics).
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Acquisition Governance

Project Performance Reporting

Capital acquisition performance reporting developed and evolved over the last 15 years. Since First Principles Review, CASG is fully incorporated within the Enterprise level reporting framework consisting of the Portfolio Budget Statements, Portfolio Additional Estimates Statements and the Defence Annual Report.

CASG is developing a report on acquisition and sustainment activities that will focus on the Top 30 Projects and Products within the Portfolio Budget Statements. The intention is to sequence this report with the other Defence public reports listed above, and including the MPR and ANAO Performance Audits.

Whilst these reform activities have been occurring, Defence continues to rely upon existing systems such as statutory reporting, annual budget processes, enterprise committee accountabilities, and Capability Life Cycle processes to ensure the timely and accurate reporting to decision makers and relevant Ministers.

Capturing Government approval

Agreements

Within CASG, Materiel Acquisition Agreements (MAAs) are project delivery agreements for monitoring and reporting on the current Government-approved scope, schedule and cost. The MAA is the foundational governance artefact in the Defence Enterprise Project Performance Reporting Framework.

As the Defence Transformation Strategy, Data Strategy and the Enterprise Resource Planning project is implemented, Defence will continue to contemporise the MAA templates as required. Future requirements and systems may evolve agreements (such as for electronic management) but Defence will continue to capture project detail for reporting.

The removal of the requirement for Project Directives occurred to strengthen the focus on the primary artefacts related to project approvals, being the Ministerial/Cabinet submission and associated approval. Defence staff have access to their Government approval of the project, as appropriate. Annual Materiel Acquisition Agreement reviews and Independent Assurance Reviews assure dates with Government approvals.

Projects of Interest

Projects (and products) showing heightened risks in the areas of cost, scope, schedule, capability, commercial strategy and/or other issues are monitored through a variety of sources. Consultation with senior stakeholders occurs before determining a Project of Interest. Once listed, reporting requirements are increased with a more detailed summary of issues, along with proposed remediation strategies to get the project/product back on track.

The Projects of Interest 'list' is used for internal departmental and Ministerial reporting and management purposes. The broad goal is to provide senior management oversight, returning projects to satisfactory performance, and preventing further deterioration of delivery parameters.

Projects of Concern

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

The process allows Defence, Defence Industry and Ministers to work together to establish remediation actions with the primary objective being to return the project to the usual management framework.

As at 30 June 2021, MRH90 Helicopters is the only project in this year's Major Projects Report that is a Project of Concern.

Table 4 – Projects of Concern at 30 June 2021

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

Defence's consideration of Projects of Concern

Projects of Concern is an enduring framework that remains a valuable tool to escalate projects for more senior management of complex issues within Defence and with Industry.

Defence's senior committees have considered the effectiveness of the commercial mechanisms and the opportunity brought to achieve a successful outcome on elevation to a Project of Concern.

Defence has a project assurance framework underpinned by Independent Assurance Reviews. The review Board Members are chosen for their experience and knowledge and ability to share lessons learned from past projects.

Smart Buyer and Independent Assurance Reviews

Defence's Smart Buyer program supports projects and products in their early planning phases through consideration of key strategy drivers, which in turn supports the development of robust project execution strategies. Within CASG, these strategies are subsequently tested in the Independent Assurance Reviews (IARs) that follow.

Whilst the primary role of Smart Buyer is to set-up projects for success, the methodology is flexible and has been adapted to address a variety of situations, including where support is required to establish programs, or where services or sustainment activities are contemplated. The Smart Buyer program is an example of the One Defence approach to capability acquisition with the program formally undertaking CASG, Chief Information Officer Group and complex Estate and Infrastructure workshops.

Independent Assurance Reviews consider the health and outlook of projects across the Capability Life Cycle. Depending on the risks or issues identified during the course of the review, which in all cases will consider the key aspects of certainty of scope, credibility of schedule and adequacy of funding, a formal Board meeting may be held to better understand the positions of the various parties. The Board Chairperson makes recommendations or proposes actions for senior management consideration regarding the ongoing conduct of the project or product under review, including whether it should be considered a candidate for elevation to Project of Interest or Project of Concern status.

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Both the Smart Buyer and Independent Assurance Review programs draw on a common pool of experienced external reviewers. Recent additions to the pool have expanded both numbers and skillsets available, enabling the programs to better meet rising demand across Defence.

While there was a temporary decline in the delivery of both the IAR and Smart Buyer programs immediately following the outbreak of the COVID-19 pandemic, demand for both programs now exceeds pre-pandemic levels.

In 2020-21, there have been 143 IARs conducted covering 181 project phases or sustainment activities. Review Board members have extremely varied professional backgrounds but typically have extensive senior management experience gained in either the Australian Public Service, ADF, Industry or Academia, and have a very sound understanding of Defence, CASG and Government processes.

Lessons

The *Lead the Way: The Defence Transformation Strategy*, released in November 2020, identified the need for new Enterprise Lessons Framework to ensure Defence is actively seeking every opportunity to learn and adapt as part of a continuous improvement culture. Defence's new approach will strengthen the relationship between lessons and decision making at the enterprise-level, investigate the adoption of modern tools and systems to support data collection and analysis and explore the introduction of a monitoring and evaluation framework to support lesson implementation. This initiative is due for delivery by late 2022 and will build on and strengthen the existing good practice lessons approaches operating within Defence.

CASG has implemented a lessons program supported by policy and a framework that ensures observations, insights and lessons can be captured within the Defence Lessons Repository. Systemic themes arising from CASG observations, insights and/or lessons are analysed and fed back into policy and or training as part of CASG's commitment to Defence's continuous improvement culture.

CASG supports the broader Defence Lessons Program and is represented at Defence Lessons Working Groups and Defence Lessons Steering Groups which aims to share information and continuously improve.

As Defence moves to deliver its Enterprise Lessons Framework by late 2022, the organisation is evolving and learning the language of lessons and the application of associated processes. This will lead to improved lessons capture and the quality of the information found at Appendix 4 (the lessons learnt) of which the majority currently better qualify as observations rather than lessons. Notwithstanding, CASG is working to ensure the content at Appendix 4 is capture in the Defence Lessons Repository and where possible undertake analysis to extract lessons to share, and where appropriate, shape policy and/or training to ensure lessons are learned.

Business Systems

Risk Reform

The CASG Risk Reform Program is nearing completion¹⁴⁴. The program modernises risk management within the Group by delivering a Risk Management System that:

- standardises application of the ISO31000:2018 risk management process
- clearly defines the level and depth of risk planning for specific project applications
- introduces a common risk language
- standardises the format for risk planning

¹⁴⁴ Joint Committee of Public Accounts and Audit Report 473 recommended Defence plans and reports a methodology that shows how acquisition projects can transition from the use of spreadsheets risk registers.

- provides a selection of appropriate methods, techniques and approaches, and
- incorporates an information management system that enables enhanced risk-based decision making.

The system includes the definition of process requirements that enable appropriate visibility, traceability and auditability of risk records. The selection of an updated information management system (Predict!) for risk management is also framed by wider project management and governance information requirements in line with the Defence ICT strategy, as well as work undertaken by Defence's Enterprise Resource Planning (ERP) project.

Comprising the system is an array of standardised policy, tools and supporting resources, including:

- CASG Risk Management Strategy
- CASG Risk Management Framework
- CAS Risk Management Manual
- Project and Product Risk Management Practical Guide
- Standardised project, product and business risk matrices
- Risk Terminology Common Language
- Consistent risk management templates
- Training and ongoing support

Training for risk practitioners and decision makers includes familiarisation and Predict! user training, and from early November 2021 will include online "Risk Management in CASG" eLearning that expands upon the Commonwealth-wide Risk Management training provided by Comcover.

Risk-based discussions are supported by the Project Performance Review process, which informs senior managers of project performance. Current risk information is presented as part of this monthly review process based on data extracted from Predict!. This facilitates senior management risk based decision making, and where necessary, enables appropriate and proportionate intervention measures to be implemented to maintain approved project cost, schedule and scope outcomes.

Predict! was approved as the single risk management tool for CASG programs, projects, products and business risks in May 2020. Between October 2020 and October 2021, 90 projects and 47 products have transitioned from spreadsheets, other risk systems and earlier versions of the Predict! system to the latest version of Predict!. Some projects and products that are soon to close will not be transitioned, however the remaining projects and products will be transitioned by end of February 2022.

On completion of the Risk Reform Program in February 2022 CASG will transition to a continuous improvement model to maintain its risk system as a modern, standardised and well governed risk management system that supports risk based decision making.

Monthly Reporting Module

Defence introduced the Monthly Reporting Module in July 2020 and saw the retirement of the previous Monthly Reporting System. The Monthly Reporting Module replaced the functionality of the Monthly Reporting System for performance metrics against scope, cost and schedule. Further, the Monthly Reporting Module developed a Materiel Acquisition Agreement module that allow central control over the Materiel Acquisition Agreement baseline in the Monthly Reporting Module to maintain consistent baselines.

For the 2020-21 MPR, issues were identified with the consistency and accuracy of data in the Monthly Reporting Module leading to the use of alternate data sources to generate the PDSS information for some projects.

CASG has worked to resolve the consistency and accuracy in Monthly Reporting Module issues. The change to accrual accounting problem was resolved in October 2020. Human error issues have been addressed via increased communications, education and guidance material, augmented by a central quality review team which has seen a significant drop in errors. Defence continues to work to align end of month budgeting tools and processes to ensure accurate financial data.

Reporting on project personnel numbers

Defence's acquisition budget does not include staffing costs. These are funded through the annual Departmental operating budgets. Defence's project expenditure accurately captures project spend, which includes supplier and contractor costs. Staff costs are reported as part of Defence's operating results. At present Defence does not have systems that allows it to capture time spent by staff on specific projects. Defence is currently assessing the viability of implementing such system(s). This assessment will include a cost versus benefit analysis to support an informed decision on implementing such a system in the future.

Capability Life Cycle improvements

Defence is delivering capability with urgency to meet the rapidly changing strategic environment, as detailed in the 2020 Force Structure Plan. Appendix 3 refers.

Caveats or deficiencies are used where a milestone (Initial Operational Capability, Final Operational Capability, Initial Materiel Release, Final Materiel Release) has been achieved in principle, with outstanding actions to be rectified or mitigated.

Declaring milestones with caveats is a useful method to assess the project's performance in terms of ability to meet capability requirements while transparently acknowledging there may be an element of scope or performance that is outstanding.

Appendix 1 – List of Projects Removed from the Major Projects Report Since Inception

Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to Date \$m	Remaining Budget \$m	FMR Achieved / Forecast MMM-YY	FOC Achieved / Forecast MMM-YY	Reason for Exit
AIR 5376 Phase 3.2	F/A 18 Hornet Upgrade Structural Refurbishment (Hornet Refurb)	2008-09	2010-11	319.1	319.1	0	N/A	N/A	JCPAA Approval[1]
AIR 8000 Phase 3	C-17 Heavy Airlift	2008-09	2011-12	1,423.40	1,423.40	0	Dec-11	Dec-11	FOC achieved
AIR 5349 Phase 1/2	Bridging Air Combat Capability	2008-09	2012-13	3,661.40	3,045.90	615.5	Dec-12	Dec-12	FOC achieved
SEA 1444 Phase 1	Armada Class Patrol Boat	2007-08	2012-13	537.2	530.3	6.9	Nov-07	Oct-12	FOC achieved
LAND 19 Phase 7A	Counter-Rocket Artillery and Mortar	2011-12	2012-13	265.7	186.1	79.6	Jan-13	Jan-13	FOC achieved
AIR 5376 Phase 2	F/A 18 Hornet Upgrade	2007-08	2013-14	1,882.50	1,663.80	218.7	Sept 12	Oct-14	FMR achieved
AIR 5418 Phase 1	Follow On Stand Off Weapon	2009-10	2013-14	319	287.1	31.9	Sept 13	Jan-14	FOC achieved
JP 2008 Phase 4	Next Generation SATCOM Capability	2009-10	2013-14	869.5	569.1	300.4	Jun-14	Jul-15	FMR achieved
JP 2043 Phase 3A	High Frequency Modernisation	2007-08	2013-14	580.2	498.1	82.1	Nov-17	Nov-17	JCPAA Approval[2]
LAND 17 Phase 1A	Artillery Replacement	2010-11	2013-14	158.5	158.5	0	Sept 13	Oct-14	FMR achieved

Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to Date \$m	Remaining Budget \$m	FMR Achieved / Forecast MMM-YY	FOC Achieved / Forecast MMM-YY	Reason for Exit
SEA 1390 Phase 2.1	Guided Missile Frigate Upgrade Implementation	2007-08	2013-14	1,453.80	1,374.70	79	Mar 16	Mar-16	JCPAA Approval[3]
SEA 1390 Phase 4B	SM-1 Missile Replacement	2010-11	2013-14	416.1	356.5	59.7	Feb 15	Jun-15	JCPAA Approval[4]
AIR 5077 Phase 3	Wedgetail	2007-08	2014-15	3,885.30	3,559.60	285.7	Feb 15	May-15	FOC achieved
LAND 75 Phase 3.4	Battlefield Command Support System	2010-11	2014-15	315.7	271.9	43.8	Mar-15	Apr-15	JCPAA Approval
AIR5402	Air to Air Refuel	2008-09	2015-16	1,818.70	1,764.30	54.4	May-16	Jul-16	FOC achieved
AIR 87	Armed Reconnaissance Helicopter	2007-08	2016-17	1,867.80	1,867.80	0	Mar-14	Apr-16	FOC achieved with Carveats
AIR 9000 Ph5C	Additional Medium Lift Helicopter	2010-11	2016-17	637.8	448.2	189.6	Jul-17	Jul-17	FOC achieved
LAND 116	Bushmaster Protected Mobility Vehicle	2007-08	2016-17	1,250.60	1,036.10	214.5	Oct-17	Jan-17	FOC achieved
LAND 121 Ph3A	Overlander Vehicles (Light)	2009-10 (Ph 3) 2012-13 (Ph 3A)	2016-17	1,017.60	900.5	117.1	Oct-16	Oct-16	FOC achieved
LAND 75 Phase 4B	Battlefield Command System	2015-16	2017-18	316.4	280.8	35.6	Dec-17	Dec-17	FOC achieved
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	2009-10	2017-18	428.7	337.5	91.2	Oct-18	Dec-18	JCPAA Approval

Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to Date \$m	Remaining Budget \$m	FMIR Achieved / Forecast MMM-YY	FOC Achieved / Forecast MMM-YY	Reason for Exit
SEA 1439 Phase 4A	Collins Replacement Combat System	2007-08	2017-18	438.8	438.8	0	Oct-18	Dec-18	JCPAA Approval
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence (2A)	2009-10	2017-18	386.7	379.6	7.1	Jul-18	Aug-18	JCPAA Approval
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	2015-16	2018-19	889.4	657.7	231.7	Oct-19	Dec-19	JCPAA Approval
JP 2048 Phase 3	Amphibious Watercraft Replacement	2013-14	2018-19	236.8	183.3	53.5	Dec-16	Nov-19	JCPAA Approval
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	2008-09	2018-19	3,092.20	2,861.90	230.3	Oct-19	Nov-19	JCPAA Approval
JP 2072 Phase 2A	Battlespace Communications Systems Phase 2A	2012-13	2018-19	438.2	376.2	62	Jan-19	Dec-19	JCPAA Approval
JP 9000 Phase 7	Helicopter Aircrew Training System	2015-16	2018-19	481.6	385.8	95.8	Apr-19	Dec-20	JCPAA Approval
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence (2B)	2009-10	2018-19	678.6	645.5	33.1	Nov-18	Jun-19	FOC achieved
SEA 4000 Phase 3	Air Warfare Destroyer Build	2008-09	2019-20	9,094.3	8,146.8	947.4	Jun 20	Jun 21	JCPAA Approval
AIR 7000 Phase 2B	Maritime Patrol and response Aircraft System	2014-15	2019-20	5,633.5	4,199.6	1,433.8	Jun 22	Jun 22	JCPAA Approval
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	2013-14	2019-20	3,426.9	2,670.9	755.9	Aug 22	Aug 22	JCPAA Approval

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Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to Date \$m	Remaining Budget \$m	FMR Achieved / Forecast MMM-YY	FOC Achieved / Forecast MMM-YY	Reason for Exit
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	2011-12	2019-20	3,147.6	2,445.1	702.5	Dec 23	Dec 23	JCPAA Approval
LAND 53 Phase 1BR	Night Fighting Equipment Replacement	2018-19	2019-20	556.4	387.9	168.5	Mar 23	Sep 23	JCPAA Approval
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	2009-10	2019-20	443.7	401.9	41.8	Dec 22	Jun 23	JCPAA Approval

Notes:

1. Approval granted after project scope and budget were approved for transition to the in-service sustainment support system in 2010-11
- 2.3.4. 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
- 5.6.7. Approval granted in 2018 based on a risk assessment performed by CASG and endorsed by the Capability Manager, which concluded the overall risk rating for remaining work was low.

Appendix 2: Acquisition complexity categories

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

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

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

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

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

- Acquisition cost - the approved budget for the project.
- Project management complexity - the complexity of project management necessary for its execution.
- Schedule complexity - the inherent complexity brought about by delivery pressures on the project.
- Technical difficulty - the complexities associated with technical undertakings such as design and development, assembly, integration, test and acceptance.
- Operation and support - the complexity associated with preparing the organisation and environment in which the system will be operated, supported and sustained.
- Commercial experience - the readiness and capability of industry to develop, produce and support the required capability, and the complexity of the commercial arrangements being managed.

Appendix 3: Capability Life Cycle

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

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

Figure A2: Capability Life Cycle Model



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

Appendix 4: Lessons learned

The 2020-21 Guidelines state that “for each project which has been removed, the lessons learned at both the project level and the whole-of-organisation level should be included as a separate section in the *following* Defence MPR”.

Table A4. Lessons learned

Categories of systemic lessons	Project lesson	Project learned from
Contract Management	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.	JP 2048 Phase 4A/4B - Amphibious Ships (LHD)
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	JP 2048 Phase 4A/4B - Amphibious Ships (LHD)
First of Type Equipment	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.	JP 2048 Phase 4A/4B - Amphibious Ships (LHD)
First of Type Equipment	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.	SEA 1448 Phase 2B – ANZAC Anti-Ship Missile Defence
Governance	Adequate communication between, and engagement of, critical stakeholders to ensure that a common understanding of Project status is maintained.	SEA 1448 Phase 2B – ANZAC Anti-Ship Missile Defence
Governance	Project budgets must be managed to avoid adverse impacts of program level changes to budget management practices.	SEA 1448 Phase 2B – ANZAC Anti-Ship Missile Defence
Governance	Seaworthiness policy changed the role of Regulators in the reviewing of the TI-338. Need to engage early with Policy and Procedure Owner to establish what ‘assurance’ is required and authorised	SEA 1448 Phase 2B – ANZAC Anti-Ship Missile Defence
Resourcing	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.	JP 2072 Phase 2A – Battlespace Communications System

Resourcing	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	AIR 5349 Phase 3 – EA-18G Growler Airborne Electronic Attack Capability
Resourcing	Workforce planning considerations need to capture project drawdown and closure resourcing requirements. If the project workforce is reduced too early, or if key roles are not maintained there is risk to project performance and good governance.	AIR 5349 Phase 3 – EA-18G Growler Airborne Electronic Attack Capability
Requirements Management	Ensure that all capability requirements are clearly defined, approved and appropriately funded before detailed acquisition planning commences.	SEA 1439 Phase 3 – Collins Class Submarine Reliability and Sustainability
Schedule Management	Ensure that maintenance period schedule dependencies are identified and appropriate risk management strategies developed.	SEA 1439 Phase 3 – Collins Class Submarine Reliability and Sustainability
Contract Management	Consider the impact associated with long term sole source cost plus contracts.	SEA 1439 Phase 3 – Collins Class Submarine Reliability and Sustainability
Schedule Management Contract Management	Understand the competing priorities within a program (ISS Performance Term Contract) and how they will impact on individual project performance.	SEA 1439 Phase 3 – Collins Class Submarine Reliability and Sustainability
Governance	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.	SEA 1439 Phase 3 – Collins Class Submarine Reliability and Sustainability
Governance	The AWD Reform has been successful and the key reason is due to implementing an experienced Management Team into the Shipbuilding Program who have previously built and designed the ship. First of Class ship build programs should have this support when building the first ship, allowing the local Australian workforce to be better prepared and trained to build the remaining ships.	SEA 4000 Phase 3 – Air Warfare Destroyer

Contract Management	The Hobart Class Combat System operation and performance has been proven on <i>HMAS Hobart</i> and <i>NUSHIP Brisbane</i> through acceptance tests at sea. The first-time success of this complex integration is due to thorough design and architecture early in project, along with the extensive use of on-shore test facilities closely replicating the ship environment. Close cooperation and regular dialogue with United States Navy colleagues were also important to ensure integration with the AEGIS weapon system.	SEA 4000 Phase 3 – Air Warfare Destroyer
Contract Management	The interpretation of the requirements of fitness for purpose of drawings is different between contracting parties. A review of all product types prior to contract and interrogation of the delivery schedule to confirm sufficient time for reviews and incorporation of comments is necessary.	SEA 4000 Phase 3 – Air Warfare Destroyer
Resourcing First of Type Equipment	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.	SEA 4000 Phase 3 – Air Warfare Destroyer
Schedule Management	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.	SEA 4000 Phase 3 – Air Warfare Destroyer
Resourcing	The need to develop appropriate and sector wide tools and infrastructure, namely the Maritime Information Environment IT network, to facilitate Government policies in continuous naval shipbuilding.	SEA 4000 Phase 3 – Air Warfare Destroyer
Contract Management	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.	AIR 9000 Phase 8 – Future Naval Aviation Combat System
Resourcing	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.	AIR 9000 Phase 8 – Future Naval Aviation Combat System

Off-The-Shelf Equipment	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.	AIR 9000 Phase 8 – Future Naval Aviation Combat System
Schedule Management	Linking ship integration to the project has assured continued support and oversight of that aspect from subject matter experts. As this projects final milestones are linked to future ship integration and the delivery of capability on that vessel it has been invaluable to have a Project Team member embedded within the parent Ship Project. By actively participating in the development of the ship's Aviation configuration our project has been able to minimise disruptions to the ship build cycle and Project schedule slippages.	AIR 9000 Phase 8 – Future Naval Aviation Combat System
Contract Management	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.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Requirements 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.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Contract Management	Precision of description about what is included under the PSFD MoU.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Requirements Management	Greater focus in regards to Australian Industry involvement within MoU.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Contract Management	Scope of the MoU, does not contemplate other USN organisations (NAVSUP, SPAWAR). Consider how support from other US agencies can be assured.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
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 direct contract arrangements within Australia, with reachback to US CONUS OEM as required if IP, export and data support can be assured.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System

Requirements Management	Airworthiness Certification of USN product may not meet Australian WHS requirements. Consider what SFARP approach needs to be taken when introducing into service.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Contract Management	Export controls need to be closely monitored to ensure the articles receive appropriate Congressional approval in time for shipment, particularly for classified items.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Requirements 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.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Contract 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.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Requirements Management	SATCOM connectivity and who pays for each segment is rarely clear. Ensure ownership of each data segment is well understood.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
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.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Resourcing	Consider co-location or moving of Acquisition Project staff to the Sustainment organisation as part of standing up the Sustainment Management Unit (SMU). This will ensure a better flow of knowledge transfer and ownership of the history of a particular requirement. Co-location of the Project Office with the SMU in January 2019 has already yielded benefits in terms of information transfer and cooperation in capability delivery.	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System
Requirements Management	Ensure the transition plan is approved well in advance of the first aircraft delivery (12 months or more).	AIR 7000 Phase 2B – Maritime Patrol and Response Aircraft System

Appendix 5: Data Tables

Table 5A Project Budget Status

Project Number	Government Approved Budget at Second Pass	Subsequent Government Approvals	Price Indexation	Foreign Exchange Variation	Real Cost / Scope Variation	Transfers	Budgetary Adjustments	Budget Cost Savings	Current Budget	Government Approved Budget at Second Pass	Subsequent Government Approvals	Price / Exchange	RCI	Other
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	%	%	%	%	%
AIR06000PH2A/B	2,751.60	10,515.40	351	2,023.90	-2.90	-8.40	0.00	0.00	15,630.60	17.60%	67.27%	15.19%	-0.02%	-0.05%
SEA05000PH1	6,184.00	0	0	-140.40	0.00	3.30	0.00	0.00	6,046.90	102.27%	0.00%	-2.32%	0.00%	0.05%
SEA01000PH1B	989.40	4,963.10	0	-117.80	0.00	-16.60	0.10	0.00	5,818.20	17.01%	85.30%	-2.02%	0.00%	-0.28%
LND00400PH2	5,762.70	0	0	-107.30	0.00	0.00	0.00	0.00	5,655.40	101.90%	0.00%	-1.90%	0.00%	0.00%
AIR09000PH2	957.2	2,565.60	679.8	-137.40	31.50	-239.30	-87.40	0.00	3,770.00	25.39%	68.05%	14.39%	0.84%	-8.67%
SEA01180PH1	3,639.10	0	0	30.50	0.00	0.00	0.00	0.00	3,669.60	99.17%	0.00%	0.83%	0.00%	0.00%
LND00121PH3B	2,549.20	735.5	0	143.10	0.00	-30.00	0.00	0.00	3,397.80	75.03%	21.65%	4.21%	0.00%	-0.88%
AIR07000PH1B	2,067.90	0	0.2	-114.70	0.00	0.00	0.00	0.00	1,953.40	105.86%	0.00%	-5.86%	0.00%	0.00%
LND00121PH4	1,945.00	0	0.4	7.60	0.00	0.00	0.00	0.00	1,953.00	99.59%	0.00%	0.41%	0.00%	0.00%
AIR08000PH2	1,156.50	0	0	270.50	0.00	-1.00	0.00	0.00	1,426.00	81.10%	0.00%	18.97%	0.00%	-0.07%
LND00019PH7B	1,274.30	0	0	-73.40	0.00	0.00	0.00	0.00	1,200.90	106.11%	0.00%	-6.11%	0.00%	0.00%
AIR02025PH6	1,117.90	0	0	0.00	8.20	2.40	0.00	0.00	1,128.50	99.06%	0.00%	0.00%	0.73%	0.21%
SEA01654PH3	1,004.60	0	0	-3.40	0.00	81.40	0.00	0.00	1,082.60	92.80%	0.00%	-0.31%	0.00%	7.52%
AIR05431PH3	731.4	0	0	2.40	247.50	0.00	-6.80	0.00	974.50	75.05%	0.00%	0.25%	25.40%	-0.70%
LND0200PH2-A	930	0	0	32.30	0.00	0.00	0.00	0.00	962.30	96.64%	0.00%	3.36%	0.00%	0.00%
JNT02072PH2B	915.7	0	0	26.50	0.00	0.00	0.00	0.00	942.20	97.19%	0.00%	2.81%	0.00%	0.00%
SEA01439PH5B2	599.1	0	0.4	6.70	0.00	0.00	2.50	0.00	608.70	98.42%	0.00%	1.17%	0.00%	0.41%
SEA03036PH1	504.5	0	0	-3.10	0.00	0.00	0.00	0.00	501.40	100.62%	0.00%	-0.62%	0.00%	0.00%
SEA01442PH4	385.6	0	0	48.40	0.00	0.00	0.00	0.00	434.00	88.85%	0.00%	11.15%	0.00%	0.00%
SEA01448PH4B	427.8	0	0	1.30	0.00	0.00	0.00	0.00	429.10	99.70%	0.00%	0.30%	0.00%	0.00%
JNT02008PH5A	461	0	18	-39.70	-18.00	0.00	0.00	0.00	421.30	109.42%	0.00%	-5.15%	-4.27%	0.00%
Total \$m / Average %	36,354.60	18,779.50	1,049.90	1,856.10	266.30	-208.10	-91.70	0.00	58,006.60	62.67%	32.37%	5.01%	0.46%	-0.52%

Table 5B Project In Year 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)
AIR06000PH2A/B	New Air Combat Capability	2,430.6	2,354.4	2,252.9	2,565.9	135.3	313.03	13.9%
SEA01000PH1B	Future Submarines Design Acquisition	782.5	782.2	768.3	630.7	-151.8	-137.60	-17.9%
SEA05000PH1	Future Frigates	587.0	506.9	498.4	508.5	-78.5	10.12	2.0%
LND00400PH2	Combat Reconnaissance Vehicles	566.2	501.4	488.7	414.6	-151.5	-74.10	-15.2%
LND00121PH4	Protected Mobility Vehicle – Light (PMV-L)	440.1	434.0	425.7	411.6	-28.5	-14.08	-3.3%
SEA01180PH1	Offshore Patrol Vessel	285.1	254.5	252.1	204.6	-80.5	-47.56	-18.9%
LND00121PH3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	226.1	218.5	216.4	216.1	-10.0	-0.27	-0.1%
SEA01654PH3	Maritime Operational Support Capability	231.3	214.4	208.1	150.5	-80.9	-57.66	-27.7%
AIR07000PH1B	MQ-4C Triton Remotely Piloted Aircraft System	239.2	199.7	191.8	206.1	-33.2	14.27	7.4%
LND00019PH7B	Short Range Ground Based Air Defence	174.4	171.5	167.5	172.3	-2.2	4.74	2.8%
AIR05431PH3	Civil Military Air Management System	93.7	136.3	135.5	121.6	27.9	-13.91	-10.3%
LND02000PH2-A	Battlefield Command System	216.5	118.5	116.6	67.5	-149.0	-49.07	-42.1%
AIR09000PH2	Multi-Role Helicopter	122.5	98.5	97.3	103.9	-18.6	6.60	6.8%
JNT02072PH2B	Battlespace Communications System Phase 2B	95.9	90.2	88.3	77.0	-18.9	-11.31	-12.8%
SEA03036PH1	Pacific Patrol Boat Replacement	85.3	82.7	82.2	71.3	-14.1	-10.96	-13.3%
SEA01439PH5B2	Collins Class Communications and Electronic Warfare Improvement Program	64.5	58.1	57.3	39.0	-25.6	-18.34	-32.0%
AIR02025PH6	Jindalee Operational Radar Network	53.5	48.7	48.7	45.8	-7.6	-2.88	-5.9%
AIR08000PH2	Battlefield Airlift – Caribou Replacement	66.9	41.7	40.7	35.6	-31.3	-5.03	-12.4%
SEA01448PH4B	ANZAC Air Search Radar Replacement	43.0	40.1	39.9	36.5	-6.6	-3.49	-8.7%
SEA01442PH4	Maritime Communications Modernisation	39.8	35.3	34.4	34.9	-4.9	0.49	1.4%
JNT02008PH5A	Indian Ocean Region UHF SATCOM	9.0	8.1	7.8	6.4	-2.5	-1.32	-17.0%
Total		6,853.0	6,395.7	6,218.6	6,120.2	-732.8	-98.3	-1.6%

Table 5C Project Schedule Status

Project Number	Project	2nd Pass	Originally Estimated IOC	Forecast IOC at 30 Jun 20	Forecast IOC at 20 Jun 21	IOC variation (months)	Variation Percentage	Originally estimated FOC	Forecast FOC at 30 Jun 20	Forecast FOC at 20 Jun 21	FOC variation (months)	Variation Percentage
AIR06000PH2A/B	New Air Combat Capability	Apr-14	Dec-20	Dec-20	Dec-20	0	0.00%	Dec-23	Dec-23	Dec-23	0	0.00%
LND00400PH2	Combat Reconnaissance Vehicles	Mar-18	Jun-22	Jun-22	Jun-22	0	0.00%	Jun-27	Jun-27	Jun-27	0	0.00%
AIR09000PH2	Multi-Role Helicopter	Apr-06	Apr-11	Dec-14	Dec-14	45	73.38%	Jul-14	Dec-21	Jun-22	96	95.98%
SEA01180PH1	Offshore Patrol Vessel	Nov-17	Dec-22	Dec-22	Dec-22	0	0.00%	Jun-30	Jun-30	Jun-30	0	0.00%
LND00121PH3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Jul-13	Dec-19	Dec-19	Dec-19	0	0.00%	Dec-23	Dec-23	Dec-23	0	0.00%
AIR07000PH1B	MQ-4C Triton Remotely Piloted Aircraft System	Nov-20	Jul-24	Jul-26	Apr-26	21	47.76%	Dec-25	Jun-29	Jul-31	66	109.81%
LND00121PH4	Protected Mobility Vehicle – Light (PMV-L)	Aug-15	Dec-19	Dec-20	May-21	17	32.66%	Jun-23	Jun-23	Jun-23	0	0.00%
AIR08000PH2	Battlefield Airlift – Caribou Replacement	Apr-12	Dec-16	Dec-16	Dec-16	0	0.00%	Dec-17	TBA	Jun-22	54	79.37%
LND00019PH7B	Short Range Ground Based Air Defence	Feb-19	Jun-23	-	Jun-23	0	0.00%	Jun-26	-	Jun-26	0	0.00%
AIR02025PH6	Jindalee Operational Radar Network	Dec-17	Apr-24	-	TBA	-	-	Jan-29	-	TBA	-	-
SEA01654PH3	Maritime Operational Support Capability	Apr-16	Mar-21	Jul-21	Aug-21	5	8.52%	Dec-22	Dec-22	Dec-22	0	0.00%
AIR05431PH3	Civil Military Air Management System	Dec-14	Jun-20	Jun-23	TBA	48	-	Jun-23	Apr-26	TBA	46	-
LND0200PH2-A	Battlefield Command System	Sep-17	Sep-21	Apr-23	Apr-23	19	39.49%	Jun-22	Sep-22	Oct-23	16	28.09%
JNT02072PH2B	Battlespace Communications System Phase 2B	Apr-15	Sep-17	Mar-18	Mar-18	6	20.48%	Sep-20	Sep-22	Sep-23	36	55.30%
SEA01439PH5B2	Collins Class Communications and Electronic Warfare Improvement Program	Mar-17	Jun-21	Aug-21	Dec-22	18	35.29%	Dec-24	Jun-27	Jun-27	30	32.20%
SEA03036PH1	Pacific Patrol Boat Replacement	Apr-16	Oct-18	Nov-18	Nov-18	1	3.40%	Sep-23	Jun-24	Nov-23	2	2.25%
SEA01448PH4B	ANZAC Air Search Radar Replacement	Jun-17	Jun-20	Jul-21	Jul-21	13	36.04%	Jun-24	Jun-24	Jun-24	0	0.00%
SEA01442PH4	Maritime Communications Modernisation	Jul-13	Dec-18	Dec-21	Dec-21	37	55.38%	Dec-23	Apr-25	Apr-25	16	12.80%
JNT02008PH5A	Indian Ocean Region UHF SATCOM	Mar-10	Jul-12	Jul-12	Jul-12	0	0.00%	Jul-18	Dec-21	Dec-21	42	41.03%
SEA 1000 Phase 1B	Future Submarine Program	Feb-19	IOC & FOC Dates have not yet agreed									
SEA 5000 Phase 1	Future Frigate - Design and Construction	Jun-18	IOC & FOC Dates have not yet agreed									
Average Variations		-	-	-	-	13	20.73%				21	24.04%
Median						6	8.52%				9	2.25%
Standard Deviation						16	24%				29	37.11%

Appendix 6: Glossary

Glossary

Acquisition Categories	See Appendix 2.
Additional Estimates	Where amounts appropriated at Budget time are required to change, the Parliament may make adjustments to portfolios through the Additional estimates process.
Australianised Military-off-the-shelf	An adapted military-off-the-shelf product where modifications are made to meet particular ADF operational requirements.
Capability	<p>The power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period.</p> <p>Capability is generated by the Fundamental Inputs to Capability.</p>
Capability Manager	A Capability Manager (CM) has the responsibility to raise, train and sustain capabilities. In relation to the delivery of new capability or enhancements to extant capabilities through the Defence Integrated Investment Plan, CMs are responsible for delivering the agreed capability to Government, through the coordination of the fundamental inputs to capability. Principal CMs are Chief of Navy, Chief of Army, Chief of Air Force, and Chief of Joint Capabilities.
Capital equipment	Substantial end items of equipment such as ships, aircraft, armoured vehicles, weapons, communications systems, electronics systems or other armaments that are additional to, or replacements for, items in the Defence inventory.
Contract change proposal	This is a formal written proposal by the Commonwealth or the contractor, prepared in accordance with the terms and conditions of the contract, to change the contract after the effective date. After agreement by the parties, the contract is amended in accordance with the processes established in the contract
Corporate governance	The process by which agencies are directed and controlled, and encompasses; authority, accountability, stewardship, leadership, direction and control.
Developmental	A product that is not available off-the-shelf and has to be developed specifically to meet the ADF's particular operational requirements.
Final Operational Capability (FOC)	The capability state relating to the in-service realisation of the final subset of a capability system that can be employed operationally.
Fixed price contract	A fixed price contract is unalterable in all respects for the duration of the contract, except where the parties agree to a contract amendment which alters that contract price.

Foreign Military Sales	The US Department of Defense's Foreign Military Sales program facilitates sales of US arms, Defense services, and military training to foreign governments.
Forward Estimates	The level of proposed expenditure for future years (based on relevant demographic, economic and other future forecasting assumptions). The Government requires forward estimates for the following three financial years to be published in each annual Federal Budget paper.
Function and performance specification	A specification that expresses an operational requirement in function and performance terms. This document forms part of the capability documentation.
Initial Materiel Release (IMR)	A milestone that marks the completion and initial release of Acquisition Project supplies required to support the achievement of Initial Operational Capability (IOC)
Initial Operational Capability (IOC)	The capability state relating to the in-service realisation of the first subset of a capability system that can be employed operationally
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.
Out Turned costs / out-turning	Defence establishes cost estimates using out-turned costs (i.e. inclusive of agreed or estimated contract price indexation) to ensure that estimates include allowances for future inflationary cost increases and foreign exchange
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable elements within the ADF.

Portfolio Budget Statement	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence budget appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.
Prime system integrator	The entity that has prime responsibility for delivering the mission and support systems.
<i>Public Governance, Performance and Accountability Act 2013</i>	<i>The Public Governance, Performance and Accountability Act 2013</i> came into effect on 1 July 2014 and superseded the <i>Financial Management and Accountability Act 1997</i> . It is a Commonwealth Act about the governance, performance and accountability of, and the use and management of public resources by, the Commonwealth, Commonwealth entities and Commonwealth companies, and for related purposes.
Test concept document	The basis for the development of the Test and Evaluation Master Plan for a project, and is the highest level document that considers test and evaluation requirements within the capability systems' life-cycle. This document forms part of the Capability Definition Document.
Variable price contracts	Variable price contracts provide for the contractor to be paid a fixed fee for performance of the contract, subject to certain variations detailed in the contract. Variable price contracts may allow for variations in exchange rates, labour and/or material costs.

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



Auditor-General for Australia



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

INDEPENDENT ASSURANCE REPORT

DEPARTMENT OF DEFENCE PROJECT DATA SUMMARY SHEETS

To the President of the Senate

To the Speaker of the House of Representatives

Conclusion

Based on the procedures I have performed and the evidence I have obtained, nothing has come to my attention that causes me to believe that the information in the 21 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 *2020–21 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.

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

I have undertaken a limited assurance review of the PDSSs, reporting on the status of the projects selected by the Joint Committee of Public Accounts and Audit, and the *Statement by the Secretary of Defence*, for the year-ended 30 June 2021. The following forecast information was excluded from the scope of this engagement:

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

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

Basis for Conclusion

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

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

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

The Secretary of Defence is responsible for the preparation and presentation of the PDSSs for the 21 selected projects, and the *Statement by the Secretary of Defence*, in accordance with the Guidelines. This responsibility includes the design, implementation and maintenance of internal control that the Secretary determines is necessary to enable the preparation of PDSSs that are free from material misstatement, whether due to fraud or error. The Guidelines provide that the PDSSs and supporting evidence, provided to the ANAO for review, are complete and accurate.

Independence and Quality Control

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

Responsibilities of the Auditor-General

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

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

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



Grant Hehir
Auditor-General
Canberra
6 December 2021

Statement by the Secretary of Defence

The attached Project Data Summary Sheets (PDSS) for the 21 major projects included in this report have been prepared in accordance with the Guidelines developed by Defence in consultation with the Australian National Audit Office and endorsed by the Joint Committee of Public Accounts and Audit.

Project Status as at 30 June 2021

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 2021.

Significant Events Occurring Post 30 June 2021

In stating this opinion that the PDSSs comply in all material respects with the Guidelines, I acknowledge the following material events have occurred post 30 June 2021:

AIR6000 Phase 2A/2B – Joint Strike Fighter

Australian F-35A aircraft A35-041 was accepted on 1 July 2021. The aircraft was ferried with A35-038, -039 and -040, which were accepted in June 2021, to Eielson Air Force Base in Alaska to participate in the United States - led Exercise Red Flag 2021.

SEA5000 Phase 1 – Future Frigates

In July 2021, the Government announced a delay of up to 18 months to the commencement of construction for the first Hunter class frigate due to design maturity issues experienced in the United Kingdom's Type 26 Program that are having flow on effects to the Hunter class. Delaying commencement of construction by up to 18 months will provide more time to address design maturity, conduct enhanced prototyping activities and agree appropriate commercial terms for build of the first three ships. This initial schedule delay will be recovered over the life of the program.

The key element of System Definition Review (specifically the Mission System) that will support the functional baseline being struck completed on 1 December 2021. The element of the review dealing with the Support System has been rescheduled from October 2021 to mid-2022. This will not impact on the program entering the construction phase.

SEA1000 Phase 1B – Future Submarines

On 16 September 2021, the Australian Government announced an enhanced security partnership between the United Kingdom, the United States and Australia – AUKUS. Given the changing strategic environment in the Indo-Pacific, the first program to be delivered under the AUKUS arrangement would be nuclear-powered submarines for Australia. The announcement included the Government's decision to not proceed with the Attack class submarine program. As a result, activities are now focussed on supporting closure of the Program. This decision does not reflect on the progress made by the two prime contractors – Naval Group and Lockheed Martin

Statement by the Secretary of Defence

Australia – in delivering against the contract, with work, supported by the Department, progressing up until 16 September 2021.

AIR9000 Phase 2/4/6 – Multi-Role Helicopter

The MRH90 transmission repair and overhaul facility project reached the Operational Readiness milestones on 5 August 2021 and Leonardo Australia have included the first transmissions to undergo repair / overhaul.

The project was notified on 30 August 2021 of delays to role equipment projects. The cause of these delays are being remediated but will have a flow on effect to the declaration of Final Materiel Release, which is now at risk of being delayed until at least quarter two of 2022. Consequently, declaration of Final Operational Capability will also be further delayed.

SEA1180 Phase 1 – Offshore Patrol Vessel

Construction of the fifth Arafura class offshore patrol vessel (*Illawarra*) commenced at Henderson in Western Australia on 1 November 2021. The first Arafura class offshore patrol vessel (*Arafura*) will be launched at Osborne in South Australia on 16 December 2021.

SEA1654 Phase 3 – Supply Class Replenishment Ships

The second Supply class replenishment ship completed fit-out at HMAS *Stirling* in Western Australia and was accepted by the Department from the prime contractor, Navantia, in August 2021. She was commissioned into Navy service as HMAS *Stalwart* on 13 November 2021. On 26 October 2021, her sister ship, HMAS *Supply*, achieved Initial Operational Capability.

JP2072 Phase 2B – Battlespace Communications System

Three medium SATCOM terminals were delivered on 28 July 2021. Release 3 Mission System Field Test was completed on 17 August 2021. The final three terminals arrived at Wacol from the United States (Boeing Defence Australia Testing and Integration Facility) on 23 August 2021.

SEA1442 Phase 4 – Maritime Comms

In September 2021, the third ANZAC ship system (HMAS *Warramunga*) was accepted and the milestones Mission System Acceptance and Initial Materiel Release were achieved.

SEA1448 Phase 4B – ANZAC Air Search Radar Replacement

Initial Operational Capability was achieved on 1 July 2021.

JP2008 Phase 5A – UHF SATCOM

JP2008 Phase 5A achieved Final Materiel Release for the Network Control System milestone in August 2021 and this was formally recognised by the Capability Manager on 17 September 2021. Subsequently, the project declared interim operational capability in October 2021.

Statement by the Secretary of Defence

Update on Projects that exited the MPR in 2019-20:

SEA4000 Phase 3 – Hobart Class Air Warfare Destroyers

Final Operational Capability for the Hobart class destroyers was achieved on 25 June 2021 following successful Combat System Ship Qualification Trials by HMAS *Sydney* in United States waters earlier in the year.

AIR7000 Phase 2 – P-8A Poseidon

AIR7000 Phase 2 continues to plan for the next set of capability updates to the P-8A aircraft, Mission Support Elements and Training Systems ahead of the project's next major milestone in mid-2022. Delivery of other project elements including remaining spares and the UNIPAC III Search and Rescue kit continued.

AIR5349 Phase 3 – Growler

AIR5349 Phase 3 is on schedule to achieve Final Materiel Release mid-2022 within the approved budget. Materiel Release 5 milestone is scheduled to be achieved at the end of quarter three in 2021. Materiel Release milestones 4, 6 and 8 have been rescheduled to May 2022, preceding Final Materiel Release.

SEA1439 Phase 3 – Collins Class Submarine Reliability and Sustainability

The installation of planned engineering enhancements to HMA Ships *Collins*, *Sheenan* and *Rankin* has been completed. Installation in HMA Ships *Farncomb* and *Dechaineux* has commenced and is expected to be completed by January 2022 and June 2022 respectively. Final Operational Capability remains on track for achievement in 2023.

LAND53 Phase 1BR – Night Fighting Equipment Replacement

The project has completed Materiel Releases 1-5, which replaced the Ninox and legacy night fighting equipment nationally. Tranche 2, Gate 2 approval was received in October 2020, and contracts for Fused Night Vision Systems were signed with Missions Systems Australia Pty Ltd (now L3 Harris Integrated Mission Systems Australia Pty Ltd) in December 2020. MAA 2.4 was signed 31 August and includes new Materiel Releases (6-9 inclusive) to ensure Tranche 2 equipment is delivered before September 2023.

JP9000 Phase 7 – Helicopter Aircrew Training System

Chief of Navy declared Final Operational Capability for JP9000 Phase 7 in February 2021.

AIR9000 Phase 8 – MH-60R Seahawk

Since exiting the Major Projects Report in the past 12 months, AIR9000 Phase 8 has completed further ship modification works in the ANZAC Class FFH fleet. Project milestones continue to be met, including the delivery of associated weapons systems and the final MH-60R training device.

Statement by the Secretary of Defence

JP2048 Phase 4A/4B – Amphibious Ships

Final Operational Capability was declared on 4 November 2019 with notable deficiencies that are being rectified. The table below provides further detail on the deficiencies.

Description of Deficiency	Status
Propulsion Pod Induced Vibration The propulsion pods exhibited some deficiencies.	Rectification work occurred by upgrading the propulsion pods during the 2020-21 docking schedule. Sea trials with upgraded pods in progress.
PCRf Bed Configuration - Insufficient	The remediation is assigned to Project JP2048 Phase 6.
Excessive Noise in Accommodation Compartments	The remediation is assigned to Project JP2048 Phase 6.
Integrated Logistic Support	Immediate remediation complete. Agreement reached with Designer (Navantia Australia Pty Ltd) on the scope of the Engineering Change Proposals (ECP).
Magazine Capacity	Deficiencies were partially remediated to HMAS <i>Adelaide</i> during 2021 docking. Scheduled works to HMAS <i>Canberra</i> were deferred due to COVID-19 travel restrictions and competing priorities during 2020-21.
Sewage Treatment Plants (STP) The system experienced some deficiencies.	Defence planned to remediate one STP during HMAS <i>Adelaide</i> 's docking schedule in 2021. Once the proposed solution has been installed and assessed as effective, Defence will undertake remediation of the remaining three STPs on an opportunity basis. However, the remediation effort was impacted by COVID-19 travel restrictions. Defence is currently undergoing discussions with prime contractors to revise the remediation schedule.

Statement by the Secretary of Defence

COVID-19 Impact Statement

The impact on Defence contracts as a result of the COVID-19 pandemic has continued to be felt in the 2020-21 reporting year. Schedule delays to projects can be largely attributed to the effects of supply disruption, national and international travel restrictions and city and state mandated lockdowns. Project Teams that were heavily impacted by the pandemic have worked to develop and administer COVID-19 Recovery Deeds where needed.

A handwritten signature in black ink, appearing to read 'G. Moriarty'.

Greg Moriarty
Secretary
Department of Defence
02 December 2021

Project Data Summary Sheets

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Project Data Summary Sheets

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2020–21 Major Projects Report

Project Data Summary Sheet¹⁴⁵

Project Number	AIR6000 Phase 2A/2B
Project Name	NEW AIR COMBAT CAPABILITY
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Nov 06
Government 2nd Pass Approval	Nov 09 (Stage 1) Apr 14 (Stage 2)
Budget at 2 nd Pass Approval	\$13,264.1m
Total Approved Budget (Current)	\$15,630.7m
2020-21 Budget	\$2,252.9m
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The AIR6000 Phase 2A/2B project **is introducing** the F-35A Joint Strike Fighter (JSF) capability that will meet Australia's air combat needs out to 2030 and beyond. Phase 2A/2B of the project is approved to acquire seventy-two Conventional Take Off and Landing (CTOL) F-35A JSF aircraft to establish three operational squadrons, a training squadron and necessary supporting/enabling elements to replace the F/A-18A/B Hornet capability.

Lockheed Martin is contracted to the United States (US) Government for the development and production of the F-35A JSF. The aircraft and associated support systems are being procured through a government to government co-operative agreement with the US and JSF partner nations, comprised of the United Kingdom, Canada, Italy, Denmark, Norway, Netherlands and Turkey. However, in July 2019 the US Government made a unilateral decision to suspend Turkey from the F-35 Program. **Turkey is no longer a member of the F-35 partnership.** Outside of the partnership, Japan, Israel, the Republic of Korea, Belgium, Poland and Singapore are procuring the F-35 JSF via US Foreign Military Sales (FMS).

1.2 Current Status

Cost Performance

In-year

30 June 2021 – The year-end cost variance of 13.9% or \$312.5m has been driven primarily by air vehicle and engine work performed prior to end of year but not yet invoiced. There was no change to materiel delivery but the introduction of accrual accounting meant the expenditure was recognised earlier than planned. Overall during the financial year, core contracted arrangements were performed in accordance with contracted requirements and project expectations, reported at Budget Estimates 2021-22.

Project Financial Assurance Statement

In consideration of risks disclosed at Section 5.1, as at 30 June 2021, Project AIR6000 Phase 2A/2B has reviewed the approved scope and budget for those elements required to be delivered by the project. In 2019, the project obtained Government approval to move a final scope element between AIR6000 program phases, resolving the Project AIR6000 Phase 2A/2B affordability issue advised to Government in 2017. The approved changes have not increased funding for AIR6000 Phase 2A/2B or other associated program phases. Defence considers there is sufficient budget, including contingency, remaining for the project to deliver the revised scope. The project will continue to address cost risks in annual updates to Government.

Contingency Statement

The project has not applied contingency in the financial year.

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

Schedule Performance

Initial Operating Capability (IOC) **was achieved on 28 December 2020, despite** COVID-19 impacts. **However,** the COVID-19 pandemic has increased the uncertainty and complexity of delivery of the F-35 Program. At this time, AIR6000 Phase 2A/2B has identified a number of activities that have been affected by the global situation. COVID-19 is a rapidly evolving environment and the effects on AIR6000 Phase 2A/2B have been **largely** mitigated to date, which include restrictions on international travel, supply chain and workforce.

The first two aircraft to be permanently based in Australia arrived in Williamtown on 10 December 2018, as planned in the schedule established at 2014 approval. In the **2020-21** financial year Australia accepted **14** aircraft bringing the total Australian fleet to **40**.

Pilot and maintainer training were initially conducted in the US; both have now commenced in Australia.

The Australia Canada United Kingdom Reprogramming Lab (ACURL) Phase 1 system installation and testing was completed in December 2019, with operational evaluation completed in January 2020. The ACURL facility was commissioned 24 February 2020 and formal reprogramming operations have commenced. ACURL Phase 2 activities have continued in parallel with planning for the building extension and next generation reprogramming tools underway.

Facilities construction at **RAAF Base Tindal is complete with ICT and security accreditation finalised, and 75SQN personnel taking up occupation. Facilities construction at RAAF Base Williamtown is complete, including the Retail Warehouse, and was occupied by 81WG in April 2021. The full length runway extension became operational in August 2020.** Sustainment of the global F-35 fleet is provided through the Global Support Solution (GSS), which is still maturing as the global fleet grows. The 2014 US Government assignment of regional Airframe and Engine Maintenance, Repair, Overhaul and Upgrade responsibilities to Australia has assisted in the planning of Australian sustainment. In November 2016, the US Government assigned the regional maintenance and repair of 64 Tier 1 components to four Australian companies and in February 2019, 343 Tier 2 components to seven Australian companies. **A Tier 3 F-35 Joint Program Office (JPO) component Request For Information is anticipated to be released in 2021/22.** Sovereign sustainment requirements have been defined and JSF Branch is working closely with the F-35 JPO and industry on the planning and execution of these requirements.

Material Capability Delivery Performance

The F-35A JSF Air Vehicle **met** Initial Operating Capability (IOC) by the scheduled date of December 2020. Williamtown **and Tindal** facilities are complete. The Verification and Validation (V&V) Program has progressed well, **mitigating risks to** Final Operating Capability (FOC), **but has also been impacted by COVID-19.**

Most of the capability requirements of FOC are delivered by the extant integrated F-35 Air System and new developments are on track for incorporation in production Lots 13-15. AIR6000 Phase 2A/2B will continue to contribute to JSF Program developments to enable Australia to consider capability options and upgrades. AIR6000 Phase 2A/2B has options to deliver Maritime Strike capabilities in a timeframe closely following that of the United States Navy. AIR6000 Phase 2A/2B will also continue to invest in F-35A development toward advanced Maritime Strike options open for consideration under AIR3023 in the context of a Joint Maritime Strike strategy.

On 15 January 2020, the United States Government Under Secretary of Defense for Acquisition and Sustainment, Ms Ellen Lord, announced that the F-35 Autonomic Logistics Information System (ALIS) will be replaced with a system called the F-35 Operational Data Integrated Network (ODIN). The United States F-35 JPO has confirmed that ODIN will deliver improved operational outcomes through the use of cloud-based technology, a government-managed integrated data environment, and user-centred applications. All partner nations will transition to the new integrated information system in a migration led by the F-35 Joint Program Office. The F-35 is a fifth generation platform that is designed to evolve. Improvements and upgrades to the logistics information system were already planned and Australia's extant budget includes funding for such upgrades.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context**Background**

Project AIR6000 was established in 1999 to replace the air combat capabilities provided by the F/A-18A/B and F-111 fleets. In 2002, Government identified the Lockheed Martin F-35A JSF as the preferred option and joined the System Development and Demonstration (SDD) phase of the JSF Program as one of nine partner nations. At this time the project discontinued the competitive evaluation under AIR6000. 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 AIR6000 Phase 1B to conduct detailed definition and analysis activities to support Government Second Pass Approval for AIR6000 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.
- AIR6000 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.
- AIR6000 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 achieve FOC in 2023 comprising of three operational squadrons of fifth generation F-35A JSF to replace the F/A-18A/B Hornet aircraft.
- In 2017, Defence advised Government of emerging issues associated with AIR6000 Phase 2A/2B affordability. In 2018 and 2019, Government agreed to Defence proposals to defer elements of project scope to later, unapproved, AIR6000 program phases. The majority of these scope items were no longer needed, as FOC requirements will be met without major upgrades. Beyond Line of Sight Communications (BLOS) was only desirable and will now be delivered as a cost effective common capability rather than Australian unique. In conjunction with the retirement of cost risks within the project, this has remediated the cost issues identified to Government in 2017. These adjustments have also aligned Australian delivery schedules with the global JSF development program. While the approved changes have reduced the capability being delivered by Phase 2A/2B it has not increased or reduced funding, or the capability being delivered, in the broader AIR6000 program. As the changes have minimal impact on overall delivery schedule of the project, AIR6000 Phase 2A/2B plans for FOC in 2023 remain unchanged.

Project Data Summary Sheets

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2020–21 Major Projects Report

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 MoU Partners (with the US to acquire approximately 75 per cent of the total) with the potential for significant additional aircraft procurements by Foreign Military Sales (FMS) customers.

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

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

- The US Government has contracted with Lockheed Martin and Pratt & Whitney on Australia's behalf in accordance with US contracting laws, regulations and procedures.
- The F-35 Joint Program Office acquisition strategy is to commence with eleven annual Low Rate Initial Production (LRIP) contracts transitioning from a Fixed Price Incentive Fee to a Firm-Fixed Price at the appropriate time.
- Each contract requires a separate Partner Procurement Request (PPR) from each partner nation defining their requirements for that buy. PPRs are submitted two years ahead of contract and four years ahead of delivery.
- F-35A JSF Aircraft to be delivered under AIR6000 Phase 2A/2B are acquired under annual contracts. Lots 12 to 14 production procurements leverage off a Block Buy initiative, with Australia's commitment remaining on an annual basis. The Australian F-35A JSF capability will be supported via an 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 F-35 Joint Program Office as well as prime contractors Lockheed Martin and Pratt & Whitney, and their sub-contractors to achieve long term industry outcomes for Australia.

The New Air Combat Capability – Industry Support Program (NACC-ISP) was launched on 10 August 2011. **In total**, \$21.9 million (GST exclusive) **was** available to Australian businesses and research organisations to support development of new or improved capabilities that may enhance their ability to win work in production, sustainment and follow-on development phases of the F-35 Program. This program will have **fully obligated** all funds by end **2021**. To date, over 50 Australian companies have, some with NACC-ISP support, directly shared in excess of **\$2.7 billion** in global F-35 contracts.

The Joint Strike Fighter – Industry Support Program (JSF-ISP) **was launched on 9 December 2020** with initial funding of **\$4m** from Phase 2A/2B. JSF-ISP will assist with further industry opportunities, including component repair capacity workloads. The Cooperative Partnership will continue to progressively enhance the capability of the entire F-35A Air System over its life of type under the auspices of the Follow-on Modernisation program.

Major Risks and Issues

The F-35 Joint Program is large and complex with varying challenges. Delivery of Air Force's capability requirements may be affected by technical deficiencies, delay in delivery schedule, funding or programming issues, or delays in delivery of an effective training system. As a partner nation, Australia is also reliant on the international Cooperative Program through the Joint Program Office to develop and sustain the F-35 system and to develop the Global Support Solution. Australia's standing in the Cooperative Program may be compromised by security or cyber breaches. The project is also managing risks regarding industry, including realisation of economic benefits and the management of the workforce.

The primary issue that the project is addressing is the impact from COVID-19 to schedule and potentially to cost. It is affecting the supply chains and production efforts of the F-35 prime contractors Lockheed Martin and Pratt & Whitney, resulting in delays to delivery of aircraft and support elements. Travel restrictions are limiting the ability of US-based staff to install specialist equipment in Australia and for Australian and US staff to conduct verification and validation activities. The project is mitigating these with alternative plans, where possible, and otherwise monitoring the changes through regular communication. **Another minor issue is the need for Air Force Maintainers to practice fitting Alternate Mission Equipment and loading dummy rounds using Air Vehicles instead of a training aid. Delivery of the Weapons Loading Trainer and Gun Module upgrades will resolve this issue in Q4 2021.**

Other Current Related Projects/Phases

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

AIR6000 Phase 5 - Air Combat Capability Air-to-Air Weapons: This project was approved by Government in March 2016 and will acquire reserve stocks of air-to-air Within-Visual-Range (WVR) and Beyond-Visual-Range (BVR) missiles for the Air Combat Capability including the F-35A Joint Strike Fighter.

AIR6000 Phase 3 - Air Combat Capability Air-to-Surface Weapons: This project was approved by Government in May 2018 and will acquire the reserve stocks of air to ground weapons, new countermeasures and ammunition for the F-35 Joint Strike Fighter.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

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

Date	Description	\$m	Notes
	Project Budget		
Nov 09	Original Approved (Government Second Pass Approval – Stage 1)	2,751.6	

May 12	Real Cost Decrease	(204.4)	1
Sep 12	Real Cost Increase	201.5	1
Jun 14	Government Second Pass Approval – Stage 2	10,515.4	2
	Total at Second Pass Approval	13,264.1	
Apr 18	Real Variation – Transfer	(8.4)	3
Jul 10	Price Indexation	351.0	4
Jun 21	Exchange Variation	2,024.0	
Jun 21	Total Budget	15,630.7	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - US Government - LRIP 10 Production	(875.8)	5
	Contract Expenditure - US Government - LRIP 11 – Production	(878.9)	5
	Contract Expenditure - US Government (Block Buy Contract Production)	(1,997.3)	5, 6
	Contract Expenditure - US Government - PSFD MoU (FY14/15 – 22/23)	(359.9)	
	Contract Expenditure - US Government (Block Buy Contract Propulsion)	(338.7)	5, 6
	Contract Expenditure - US Government - LRIP 10 Propulsion	(139.1)	5
	Contract Expenditure - US Government - LRIP 11 – Propulsion		
	Contract Expenditure - US Government - Reprogramming Laboratory	(143.6)	5
	Contract Expenditure - US Government - LRIP 8 - Production and Non-Annualised Sustainment	(114.2)	5
	Contract Expenditure - US Government - LRIP 10 Non-Annualised Sustainment Contract	(87.7)	5
	Contract Expenditure - US Government - FMS Case AT-D-YAF, AT-P-AMN (Weapons)	(115.7)	5
	Contract Expenditure - US Government - FMS Case AT-D-YAF, AT-P-AMN (Weapons)	(146.3)	5
	Contract Expenditure - US Government-LRIP11 - Non-Annualised Sustainment	(74.6)	5
	Contract Expenditure - US Government-LOT 12-14 IDIQ Contract	(3.6)	5
	Other Contract Payments / Internal Expenses	(1200.2)	7
		(6,475.6)	
FY to Jun 21	Contract Expenditure - US Government (Block Buy Contract Production)	(1,018.9)	5,6
	Contract Expenditure - US Government (Block Buy Contract Propulsion)	(289.0)	6
	Contract Expenditure - US Government PSFD MoU (FY14/15 - 22/23)	(121.1)	5
	Contract Expenditure - US Government - FMS Cases AT-D-YAF, AT-P-AMN (Weapons)	(13.5)	5
	Contract Expenditure - US Government - LRIP 11 Non-Annualised Sustainment	(52.2)	5
	Contract Expenditure - US Government - LRIP 11 - Production	(-1.9)	5
	Contract Expenditure - US Government - LRIP 10 Non-Annualised Sustainment	(78.9)	5
	Contract Expenditure - US Government - LRIP 11 - Propulsion	(4.2)	5
	Contract Expenditure - US Government – LOT 15 Production	(21.7)	
	Contract Expenditure - US Government - LRIP 10 Production	(1.6)	5
	Contract Expenditure - US Government - LOT 12-14 Indefinite Delivery Indefinite Quality (IDIQ)	(59.5)	5
	Contract Expenditure - US Government - Reprogramming Laboratory	(6.9)	5
	Contract Expenditure - US Government - LRIP 10 Propulsion	(0.2)	5
	Contract Expenditure - US Government - LRIP 8 - Production and Non-Annualised Sustainment	(10.7)	5
	Other Contract Payments / Internal Expenses	(889.2)	8
		(2,565.9)	
Jun 21	Total Expenditure	(9,041.4)	
Jun 21	Remaining Budget	(6,589.3)	
	Notes		
1	A May 2012 budget adjustment (\$204.4m) was applied to AIR6000 Phase 2A/2B based on an incorrect interpretation of the Government's decision to vary the New Air Combat Capability (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 AIR6000 Phase 2A/2B Stage 2 in April 2014 for an additional 58 CTOL F-35A JSF aircraft.		
3	Transfer to Estate and Infrastructure Group following request for funding scope changes for RAAF Base Tindal Joint Strike Fighter facilities.		
4	Up until July 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.		

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5	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
6	Previously reported as a single Block buy Contract that combined the expenditure of the Production and Propulsion.
7	Other expenditure for the period prior to July 2020 is associated with Mission Systems (\$509.2m) comprising of FMS cases, weapons & aircraft; Support Systems (\$365.4m) which comprises of software capability for the reprogramming lab, facilities, support and test equipment, spares, information communications technology and ALIS; Production Sustainment and the follow on development of a Memorandum of Understanding (\$180.9m) for the 2009-10 financial year through to the end of the 2013-14 financial year; Project Office services (\$58.0m) comprising of Project Office services (travel, contract support services) and contract administration in relation to the Joint Project Office; NACC Operating Expenditure (\$82.8m) comprising of Project Office expenses, initial support & maintenance, US pilot training and NACC ISP Grants Program; Non-standard mission system (\$3.9m) for the Ferry activities.
8	Other expenditure for the period July 2020 to June 2021 is associated with Support Systems (\$698.7m) comprising of software capability for the reprogramming lab, facilities, support and test equipment, spares, information communications technology, training simulators, spares and the ALIS; Mission Systems (\$153.4m) comprising of FMS cases, weapons and aircraft; Project Office services (\$15.3m) comprising of Project Office services (travel, contract support services) and contract administration in relation to the Joint Project Office NACC operating expenditure (\$18.7m) comprising of Project Office expenses, initial support and maintenance, US pilot training and the NACC ISP Grants Program; and non-standard mission system (\$3.1m) for the Ferry activities.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
2,430.6	2,354.4	2,252.9	PBS – PAES: During 2020-21, activities have continued as planned to support achievement of Initial Operational Capability, with some minor disruptions to the aircraft production schedule due to COVID-19. The variation is primarily due to foreign exchange updates. PAES – Final Plan: The acquisition is as now forecast in 2021-22 PBS Rates.
Variance \$m	(76.2)	(101.5)	Total Variance (\$m): (177.7)
Variance %	(3.1)	(4.3)	Total Variance (%): (7.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	30 June 2021 – The variation is primarily due to early achievement of cooperative program deliverables associated with the air vehicle and engine. The project also had a foreign exchange loss of approximately \$70m due to the additional cost of foreign exchange payments as a result of the depreciation of the Australian dollar which has also contributed.
		316.7	Foreign Industry	
			Early Processes	
		(3.7)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
2,252.9	2,565.9	313.0	Total Variance	
		13.9	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
US Government PSFD MoU (FY 14/15 – 22/23)	Dec 06	253.1	768.7	Various	MoU	1, 9, 10
US Government (LRIP 10 Production)	Dec 14	79.2	902.8	Fixed Price Incentive	USG Contract	2, 9, 10
US Government (LRIP 10 Propulsion)	Mar 15	13.4	145.8	Fixed Price Incentive	USG Contract	3, 9, 10
US Government (Reprogramming Laboratory)	Mar 15	119.0	137.6	Fixed Price Incentive	USG Contract	4, 9, 10
US Government (LRIP 8 Production and Non-Annualised Sustainment)	Jun 15	99.9	123.2	Fixed Price Incentive	USG Contract	5, 9, 10
US Government (LRIP)	Dec 15	88.2	917.1	Fixed Price Incentive	USG	6, 9, 10

11 Production)					Contract	
US Government (AT-D-YAF)	Jun 16	111.9	111.6	Reimbursement	FMS	9, 10
US Government (LRIP 10 Non-Annualised Sustainment)	Jun 16	31.8	283.2	Various	USG Contract	9, 10, 13
US Government (AT-P-AMN)	Jul 16	132.3	140.9	Reimbursement	FMS	9, 10
US Government (LRIP 11 Propulsion)	Jul 16	14.2	168.2	Fixed Price Incentive	USG Contract	9, 10, 12
US Government (Block Buy Contract Production)	Feb 17	236.3	4,443.2	Various	USG Contract	7, 9, 10
US Government (Block Buy Contract Propulsion)	Aug 17	39.6	842.9	Various	USG Contract	7, 9, 10
US Government (LRIP 11 Non-Annualised Sustainment)	May 18	57.5	186.0	Various	USG Contract	9, 10, 13
US Government (LOT 12-14 Indefinite Delivery Indefinite Quantity)	Jan 19	52.8	155.9	Various	USG Contract	9, 10, 14
US Government (LOT 15 Production)	Jan 20	125.3	113.5	Fixed Price Incentive	USG Contract	9, 10, 15
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 and again in March 2021 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.					
2	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'.					
3	LRIP 10 Propulsion contract for eight engines for installation on Australia's next tranche of eight F-35A aircraft. This contract is progressively modified with approved work scope and forms the basis of the propulsion contract for the complete system – per Section 1.3 'Uniqueness'. Subsequent to full funding being awarded for this contract further modifications (contract changes) have occurred. These include: (1) Long Lead funding for LOT 12 (15 aircraft), (2) initial sparring for operating units, maintenance depots and the Global Pool and (3) the migration of ALIS propulsion data.					
4	Contract for Reprogramming Laboratory hardware and software tools.					
5	LRIP 8 Production and Non Annualised Sustainment contract for the provision of training devices, support equipment, non-aircraft spares and an aircrew fitting service.					
6	LRIP 11 Production contract for Australia's next tranche of eight F-35A aircraft. This contract includes Long Lead items and is progressively modified, forming the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'. This contract has met Full Funding award with the increase in contract value a result of the staged procurement and provision of funding for the F-35 production line to build the aircraft.					
7	Lots 12-14 Production and Propulsion are procured under separate Block Buy Contracts, Air Vehicle Production via Lockheed Martin and Propulsion via Pratt & Whitney. Both contracts encompass Long Lead items for the procurement of aircraft under Lots 12-14 and Economic Order Quantities for the production contract only. Both production and propulsion are also contracted under Unfinalised Contract Action for Lot 12. These contracts were previously combined and reported as a single Block Buy Contract. Australia will commit to aircraft purchases on an annual basis via these two contracts, subject to annual approvals by Government.					
8	FY17 Air Vehicle Initial Spares & ACURL Spares contract for Australia's Deployable Spares Pack (DSP), Australia's contribution to the F-35 global spares pool and spares for the Reprogramming Lab. The FY 17 Air Vehicle Initial Spares contract had USD\$30,709,575 deobligated, as the eventual Finalised Contract value was lower than the 'not to exceed' value of the Unfinalised Contracting Action.					
9	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates. This includes adjustments for indexation (where applicable).					
10	The scope of these contracts is explained further below.					
11	The project has reviewed the list of major contracts reported in the PDSS to ensure it reflects only the most significant contracts of the project. This has resulted in some contracts previously reported separately now being reported as part of other contract payments/internal expenses and being removed from the list of major contracts.					

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12	LRIP 11 Propulsion contract for eight engines for installation on Australia's tranche of eight F-35A aircraft being procured through the LRIP 11 Production Lot. This contract is progressively modified with approved work scope and forms the basis of the propulsion contract for the complete system – per Section 1.3 'Uniqueness'.			
13	LRIP 10 and 11 Non-Annualised (NA) Sustainment contracts consist of one-time tasks and infrastructure stand up activities. The contracts undergo discrete modifications for each individual good and/or service being procured which in turn dictates the 'type' of contract. The majority of each discrete procurement is acquisition related, examples being initial non-aircraft spares, site activation, depot stand-up, hardware procurement and delivery, training systems, support equipment and ALIS.			
14	FY19-20 Air Vehicle Initial Spares, Lot 12 - 14 Generation III Heavy Helmet Mounted Display Systems (GEN IIIH HMDS) and Lot 13 - 14 Ancillary Mission Equipment (AME) and Pilot Fit Equipment (PFE) have been placed on the Lockheed Martin Indefinite Delivery Indefinite Quantity (IDIQ) contract. The IDIQ contract allows flexibility in both quantities and delivery scheduling and allow the ordering of supplies and goods to be delayed until after requirements materialise. The JPO have stated that placing Spares, AME and PFE requirements on the IDIQ contract allows for more agile procurement for F-35 Enterprise, aligning delivery schedule with aircraft deliveries.			
15	Lot 15 Production contract for Long Lead and Economic Order Quantity (EOQ) funding associated with the procurement of nine F-35A aircraft. The purpose of EOQ funding is to allow for the procurement of extra-long lead components that will reduce the procurement cost of the aircraft by taking advantage of economy of scale orders.			
Contractor	Contracted Quantities as at		Scope	Notes
	Signature	30 Jun 21		
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 10 Production)	8	8	Procurement of Advanced Acquisition items associated with the next eight F-35A aircraft procurement.	
US Government (LRIP 10 Propulsion)	8	8	Procurement of Advanced Acquisition items and spares associated with propulsion systems for the next eight F-35A aircraft procurement. This contract has also been modified to include Long Lead items to support Lot 12 aircraft.	
US Government (Reprogramming Laboratory)	N/A	N/A	Reprogramming Laboratory Hardware and Software tools.	
US Government (LRIP 8 Production and Non-Annualised Sustainment)	N/A	N/A	Training devices, support equipment and non-aircraft spares.	
US Government (LRIP 11 Production)	8	8	Procurement of Advanced Acquisition items associated with the next eight F-35A aircraft procurement.	
US Government (AT-D-YAF)	N/A	N/A	Procurement of Small Diameter Bombs (SDB 1) and associated racks.	
US Government (AT-P-AMN)	N/A	N/A	Procurement of Radio Frequency Countermeasures.	
US Government (Block Buy Contract Production)	N/A	45	Procurement of Long Lead items and Economic Order Quantities for Lots 12-14, with full funding contract awarded in Quarter 4 2019, for procurement of 45 F-35A aircraft.	2
US Government (FY17 Air Vehicle Initial Spares & ACURL Spares)	N/A	N/A	F35 global spares pool, Deployable Spares Pack and spares for the Reprogramming Lab.	
US Government (Block Buy Contract Propulsion)	N/A	45	Procurement of Long Lead items for Lots 12-14, with full funding contract awarded in Quarter 4 2019, for procurement of 45 F135 propulsion systems.	2
US Government (LRIP 11 Propulsion)	8	8	Procurement of propulsion systems required for the eight F-35A aircraft being procured through the LRIP 11 Production Lot.	
US Government (LRIP 10 Non-Annualised Sustainment Contract)	N/A	N/A	Procurement of initial non-aircraft spares, site activation, depot stand-up, hardware procurement and delivery, training systems, support equipment	

			and ALIS.	
US Government (LRIP 11 Non-Annualised Sustainment)	N/A	N/A	Procurement of initial non-aircraft spares, site activation, depot stand-up, hardware procurement and delivery, training systems, support equipment and ALIS.	
US Government (Lot 12-14 Indefinite Delivery Indefinite Quantity)	N/A	N/A	Procurement of Lot 13-14 Ancillary Mission Equipment and Pilot Fit Equipment and HMDS Spares, Lots 12-14 Helmet Mounted Display System (HMDS), and FY 19-20 Air Vehicle Spares.	
US Government (Lot 15 Production)	N/A	N/A	Procurement of Advanced Acquisition items associated with the next nine F-35A aircraft procurement.	
Major equipment accepted and quantities to 30 June 21				
Forty F-35A aircraft have been received by Australia.				
Notes				
1	No equipment delivered as part of this contract.			
2	These contracts were previously reported as Lot 12 Long Lead and EOQ.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	JSF Air System (CTOL Variant)	Mar 03	N/A	Jul 03	4	1
Critical Design	JSF Air System (CTOL Variant)	Apr 04	Feb 06	Feb 06	22	2
Notes						
1	Aircraft weight was the major issue that delayed the closure of the Preliminary Design Review (PDR) by four months.					
2	Additional design effort was required to achieve the weight savings expected after PDR. The CTOL Critical Design Review (CDR) was delayed as a result from April 2004 to February 2006 until the re-design was complete and included the 'roll up' of many lower-tiered reviews.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/F orecast	Variance (Months)	Notes
System Integration	Block 2B Fleet Release (against IMS7 Baseline)	Jun 15	Jun 15	Jul 15	1	1
	Block 3i Initial Release to support LRIP 6 (against IMS7 Baseline)	Mar 14	Nov 14	Sep 14	6	2
	Block 3F Fleet Release (against IMS7 Baseline) – for F-35A (full envelope with weapons)	Aug 17	Oct 17	Aug 17	0	3, 4, 5
Acceptance	Accept and deliver two (LRIP 6) aircraft to US Pilot Training Centre	Mar 14	Nov 14	Nov 14	8	6
	Accept and deliver aircraft 3-14	Dec 16	Jun 19	Jun 19	30	7
	Accept and deliver aircraft 15-72	Dec 23	Sep 23	Nov 23	(1)	8
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 LRIP 6 aircraft configuration. The six month variance was due to delays in earlier software deliveries and compounded by integration into the updated computer architecture delivered in LRIP 6 aircraft.					
3	F-35 aircraft software is developed and released in capability blocks. Block 3F software is the final release under the System Development and Demonstration (SDD) phase of the program and is the requirement for Australian IOC declaration. It is noteworthy; all Block 3F software is developed to support full Australian weapons requirements, where Australia's weapons approval is dependent on US and Australian clearances.					
4	Block 3F software has fleet released August/October 2017 onto late LRIP 9 US and Partner aircraft. Fleet release dates indicate software has finished development, while the release of partner nation specific loads follows with minor adjustments to meet sovereign requirements. The priority for the release of partner specific loads is driven by a nation's aircraft delivery schedules.					
5	Australia accepted its first three Block 3F aircraft March 2018. Acceptance, initially planned February 2018 as contracted Bed Down Plan, was delayed to remediate non-software related production issues. All new aircraft are to be accepted in Block 3F (or later) configuration.					

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6	The March 2014 original delivery date was based on Australian IOC in December 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.
7	The final remaining 12 Stage 1 aircraft were originally scheduled for delivery by December 2016 leading to Australian IOC in 2018. In March 10, the JSF Program experienced a Nunn-McCurdy breach of the critical cost growth statutory threshold. Based on subsequent delays to SDD completion and the US aircraft buy profile, the Australian Government initiated a two year deferral in production and IOC, with Aircraft (14) accepted in June 19. This will achieve a revised Australian IOC by December 20.
8	Variance is due to the expected completion of Aircraft 72 production in October 2023, resulting in Aircraft 72 acceptance and delivery in November 2023.

3.3 Progress toward Materiel Release and Operational Capability Milestones

3.1 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	Dec 23	(0)	1
Final Operational Capability (FOC)	Dec 23	Dec 23	(0)	1
Notes				
1	The Capability Manager declared IOC on schedule acknowledging a number of known acceptable deficiencies with the aircraft and support systems. This is not unusual for capabilities being introduced into service. The capability continues to track toward FOC in 2023. Delivery of aircraft remains largely in line with the capability manager's expectation. Aircraft availability remains a concern, however, the fleet is currently able to generate sufficient flying hours to achieve all essential tasking.			
<p style="text-align: center;">Schedule Status at 30 June 2021</p> <p>The Gantt chart displays the project schedule from April 2014 to October 2023. Key milestones are marked: Approval in April 2014, IMR in October 2020, IOC in December 2020, FMR in October 2023, and FOC in December 2023. The chart compares the original planned schedule (grey bars) with the achieved or forecast schedule (blue line). Vertical bars indicate the duration of each phase: IMR (green), IOC (blue), FMR (orange), and FOC (red).</p>				
Note				
Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.				

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Delivery Capability Performance	
<p>A pie chart representing the percentage breakdown of materiel delivery capability performance. The chart is divided into two segments: a large green segment representing 99% and a small orange segment representing 1%.</p>	<p>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.</p> <p>Amber: AIR6000 Phase 2A/2B has options to deliver Maritime Strike capabilities in a timeframe closely following that of the United States Navy. Phase 2A/2B will also continue to invest in F-35A development toward advanced Maritime Strike options for consideration under AIR3023 in the context of a Joint Maritime Strike strategy.</p> <p>Red: N/A</p>
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from	

the scope of the Auditor-General's Independent Assurance Report.

4.2 Constitution of Materiel Release and Operational Capability Milestones

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

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
The F-35A capability may be impacted by failure to deliver air system elements to meet the capability requirements of Air Force as a result of a technical deficiency or a delay in delivery schedule. F-35A air system elements include aircraft/engine, weapons, Autonomous Logistics Information System (ALIS) system, reprogramming enterprise and the training system.	AIR6000 Phase 2A/2B has established a risk management framework to ensure that any risks to establishing a credible air combat capability are identified and resources can be allocated to mitigate these risks to ensure they do not impact the system which is being delivered. The air system elements are monitored and controlled within the integrated master schedule and the Project Performance Review process. The inclusion of Cooperative Partner Personnel positions within the Joint Program Office will give Australia early insight into emergent potential issues. The Capability Manager is a key informed stakeholder in this process which will ensure the systems being delivered will meet Air Forces evolving capability needs.
The Australian F-35 capability relies on a cohesive Joint Strike Fighter Cooperative Program to develop and sustain the F-35 system. Significant changes to the program organisation may impact Australia's and the F-35 Partners' ability to influence the program.	Defence will maintain cohesive working relationships with enterprise stakeholders, maintain Government to Government engagement in the program, and continue to engage in multilateral and bilateral discussions with F-35 partners. Australia will continue representation at strategic fora and where appropriate take the lead on influencing the F-35 Partners with the F-35 JPO and any future F-35 sustainment organisation.

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The Australian F-35A sustainment solution may be impacted by the Joint Program Offices (JPO) ongoing development and evolution to a mature and effective Global Support Solution (GSS), leading to an impact on Australia's sustainment performance.	The F-35 Lightning II Program has not yet reached Full Rate Production but is simultaneously executing Development, Production and Sustainment lines. The F-35 GSS performance is currently lower than anticipated but is still maturing and developing. AIR6000 Phase 2A/2B and Air Combat Systems Program Office will continue to provide feedback on the GSS performance at F-35 JPO governance fora to make it effective for the Australian F-35 capability.
Australia's standing and reputation in the international F-35 co-operative partnership may be compromised due to security or cyber breaches leading to potential disclosure of sensitive information to potential adversaries.	AIR6000 Phase 2A/2B will continue to train, practice and promote efficient application of security policy, practices and procedures across the physical, information and personnel security domains and ensure that effective and appropriate mitigations are deployed to address any identified issues. Robust security compliance assurance control activities are continually conducted within Defence and our broader industry partners. In addition to the promotion and enforcement of the Defence Industry Security Program, engagement continues with Defence and Government cyber security agencies to develop an Information and Communications Technology Protection Program which would assist our industry partners.
Acquisition and operation of the F-35A capability may be affected by overall funding or programming issues arising from internal cost growth / forecasting inaccuracy, production cost increases, future development of the common reprogramming laboratory and COVID-19 ; leading to an impact on capability and schedule.	AIR6000 Phase 2A/2B will conduct on-going engagement with the F-35 Joint Program Office and major project suppliers to facilitate improved cost data to allow the F-35 project to meet budgeting and programming expectations along with proactive management of cost risk identification and engagement with the Capability Manager to prioritise requirements to deliver project capability within the approved project budget.
The required Australian industry benefit may not be realised, or may be delayed, resulting in a reduced advantage to the Australian economy and causing reputational damage to Defence and Government. Australian industry may not be able to meet Global Support Solution (GSS) performance, cost or schedule requirements. Australian industry assignment MRO&U activation may impact on the performance outcomes of F-35 GSS.	AIR6000 Phase 2A/2B will conduct coordinated activities with Defence Industry Division and maintain the close working relationship with Centre for Defence Industry Capability. The project will continue to use the grants program to provide financial support for industry capacity and capability growth, and AIR6000 Phase 2A/2B advocacy on behalf of Australian Industry with Joint Program Office, United States Prime Contractors and Original Equipment Manufacturers.
Failure to effectively employ and manage the Military, Government employee and supporting Defence Industry workforce may impact the effectiveness and efficiency of the Australian F-35A program.	The JSF Integrated Project Team conducts a comprehensive review of its Workforce Plan quarterly. This plan feeds into the CASG Total Workforce Model to ensure the right balance of APS, permanent Air Force personnel and reserves that will generate a built-in resilience in key operational areas. Resource planning working groups have been set up to address niche or nascent capabilities to ensure sufficient attention is given to addressing workforce fragility. Where appropriate a skilled contractor workforce will be engaged to provide surety of capability delivery. Regular engagement of RAAF personnel management, APS recruitment agencies and industry partners enables the program to be responsive to issues, across the total workforce, and address deficiencies in a timely manner.
The capability requirements for an integrated fifth generation Air Force may be impacted due to delays in delivery of an effective training system. This may include service release of training devices and equipment, workforce provisioning and contractual arrangements resulting in possible delays to capability outcome declarations.	The JSF Training System is evolving and work continues with the key stakeholders on understanding the capabilities and aligning expectations. Additional personnel have been engaged to deliver the Australian Training System and the associated support contracts. Influential representation by Defence at critical and essential F-35 JPO meetings and Periodic Technical Interchange Meetings with Lockheed Martin will burn-down the risk through persistent and consistent education.
Emergent Risks (risk not previously identified but has emerged during 2020-2021)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
COVID-19 is affecting the supply chains and production efforts of the F-35 prime contractors Lockheed Martin and Pratt & Whitney, resulting in delays to delivery of aircraft and support elements. Travel restrictions are limiting the ability of US-based staff to install specialist equipment in Australia and for Australian and US staff to conduct verification and validation activities.	The project is mitigating these delays with alternative plans where possible and otherwise monitoring the changes through regular communication.
The upgrade of the Weapons Loading Trainer to the 3.2 and 3.2.1 configurations was affected by delays in contracting,	Until the Weapons Loading Trainer upgrade is fully delivered, Air Force maintainers are required to practice

resulting in the delivery schedule being late to need.	loading of Alternate Mission Equipment/dummy weapons to external Air Vehicle wing mounting points and to undertake load and maintenance training on an Air Vehicle gun.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

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

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	AVM Greg Hoffmann
Branch Head	AIRCDRE Damien Keddie

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Project Data Summary Sheet¹⁴⁶

Project Number	SEA5000 Phase 1
Project Name	FUTURE FRIGATES
First Year Reported in the MPR	2019-20
Capability Type	Replacement
Capability Manager	Chief of Navy
Government 1st Pass Approval	Apr 16
Government 2nd Pass Approval	Jun 18
Budget at 2 nd Pass Approval	\$6,184.0m
Total Approved Budget (Current)	\$6,046.9m
2020-21 Budget	\$498.4m
Complexity	ACAT I



Section 1 – Project Summary

1.1. Project Description

As a foundation project in the Government's Continuous Naval Shipbuilding Program, SEA5000 Phase 1 – Future Frigate Design and Construction will deliver nine *Hunter* Class Frigates optimised for anti-submarine warfare to maintain the Royal Australian Navy's (RAN) Surface Combatant capability and replace the current *Anzac* Class Frigates.

This new generation of major surface combatants will provide the RAN with the critical capability required to defend Australia well into the future. When operating as part of a Navy task group, the *Hunter* Class Frigate will contribute to air and surface warfare defence, as well as its primary mission of anti-submarine warfare.

The Project is currently approved for the Design and Productionisation Stage, which includes the conduct of detailed design, procurement of some long lead time items, and commencement of prototyping. The Head Contract is with **BAE Systems Maritime Australia (formerly trading as ASC Shipbuilding Pty Ltd)**, a subsidiary of BAE Systems Australia.

1.2. Current Status

Cost Performance

In-year

As at 30 June 2021, financial year 2020-21 expenditure is \$508.5m against the forecast budget of \$498.4m. The variation is mainly due to higher than anticipated disbursements against Aegis Foreign Military Sales cases and the reprogramming of activities against the Head Contract including the agreed rescheduling of the Integrated Logistics Support contract change.

Project Financial Assurance Statement

As at 30 June 2021, project SEA5000 Phase 1 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers as at the reporting date, there is sufficient budget remaining for the Project to complete against the agreed scope.

Contingency Statement

The Project has not applied contingency in the financial year.

Schedule Performance

Government approval has been granted for Design and Productionisation, Prototyping and procurement of Long Lead Time Items for Batch 1 Build. This has enabled the design of the Mission and Support Systems to proceed together with mobilisation of **BAE Systems Maritime Australia (BAESMA)** to the Greenfield elements of the Osborne South Naval Shipyard ahead of prototyping, which commenced in December 2020.

In the current year (2020-21), the project achieved a significant project milestone with the commencement of Prototyping in December 2020. More recently, the project achieved the commencement of the System Definition Review in March 2021, which will further evaluate the ability of the design process to facilitate an efficient and effective build. However, the revised forecast completion date for the System Definition Review is now driving delays to subsequent design reviews including progressive zonal design reviews and Major System Reviews. The Project has also experienced schedule variance due to delays in the United Kingdom's Type 26 program, which is the Reference Ship Design for the *Hunter* Class frigate.

The project is expected to return to Government for consideration of Batch 1 in quarter 4 2021. This will allow contractual arrangements for the Batch 1 Build to be finalised and work to be undertaken to enable Ship 1 construction to commence by end 2022.

While there are significant risks and challenges, as would be expected for a project of this complexity, the Project remains on track to commence Ship 1 construction on schedule.

Defence continues to work with **BAESMA** on managing risks and the associated impacts to the Project. However, some of the impacts associated with the issues identified may yet be further exacerbated by the effects of the COVID-19 pandemic. As such,

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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.

senior management oversight will continue to be required as the Project progresses.
Material Capability Delivery Performance The current scope of the Head Contract addresses the detailed Design and Productionisation, prototyping, and procurement of long lead time items (LLTI's) of the Hunter Class Frigate. SEA5000 Phase 1 is expected to return to Government in quarter 4 2021 to seek approval of the scope and funding required for the Batch 1 Build.
Note Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3. Project Context

Background The SEA5000 Phase 1 Project is a large and complex project that will form the foundation of the Government's Continuous Naval Shipbuilding Program, as announced in the 2017 National Naval Shipbuilding Plan. The Project is in the early design and productionisation stage, and will progress through multiple Government decision-making points. In June 2014, an Initial Pass was approved by Government to commence capability development activities, which included conducting studies through to Interim Pass regarding the feasibility of utilising the <i>Hobart</i> Class Guided Missile Destroyer (DDG) platform as the basis for the SEA5000 Phase 1 capability. The project was directed to return to Government in March 2015 when further decisions on SEA5000 Phase 1 would be taken in the context of the planned 2015 Defence White Paper (DWP) and subject to successful implementation of the Air Warfare Destroyer (AWD) Reform Program. In August 2015, the Government announced bringing forward the Future Frigate program to replace the <i>Anzac</i> Class (FFH) Frigates as part of a continuous onshore build programme to commence in 2020. The Hunter Class Frigates will be built in South Australia at the Osborne South Naval Shipyard . In September 2015, an Interim Pass was approved by Government for CEA Radar Development activities to complete the development of radar technology demonstrators, and remaining supporting activities through to 2018. In November 2015, an Interim Pass was approved by Government for SEA5000 Phase 1 to progress a Competitive Evaluation Process (CEP) and other activities through to First Pass consideration scheduled for the second quarter of 2016. Government approval was given for the High Level Capability Requirements (HLCRs) for the Future Frigate and the criteria by which frigate designs would be shortlisted for further development through the CEP. In April 2016, Government provided First Pass approval for SEA5000 Phase 1 to complete the CEP (based on tenders received from the three ship designers that had been shortlisted), conduct combat system related activities that support integration of the CEA Technologies suite of radars, and develop capability proposals to support Gate 2 consideration in 2018. In October 2017, the Government announced the decision to select the Aegis Combat Management System together with an Australian Interface developed by SAAB Australia as the Combat Management System solution for the Future Frigate. This further interim pass included approval for SEA5000 Phase 1 to provide funds to progress combat system work ahead of Gate 2 in addition to providing for workforce and schedule protection up to April 2018. In June 2018, the Government announced BAE's Global Combat Ship - Australia (GCS-A) as the capability best suited to Defence needs. A Smart Buyer assessment was not conducted for this project as a similar risk review process had already been conducted as part of the CEP. The platform system is based on the existing Type 26 Global Combat Ship (GCS) design, with design changes to incorporate the HLCRs as prescribed by Government. The nine frigates were classed as the <i>Hunter Class</i> FFG.
Uniqueness The SEA5000 Phase 1 <i>Hunter Class</i> Frigate Project delivering nine Anti-Submarine Warfare Frigates to the Royal Australian Navy is one of the largest naval ship building projects ever undertaken in Australia . In terms of size and complexity the project is second only to the SEA 1000 Future Submarines. As such, SEA5000 Phase 1 will be delivered in a number of stages to achieve the objectives of Continuous Naval Shipbuilding, with each stage requiring separate approvals by Government to ensure the project remains within cost constraints. While the principles of Defence's Capability Life Cycle will be applied to this project, due to the longevity, and staged nature of the project, a unique approach will be required to manage the nine <i>Hunter Class</i> Frigates through the life cycle.
Major Risks and Issues The Project is currently managing risk at both a strategic and tactical level. Strategic risks identified within Section 5 broadly fall under a number of key areas being: <ul style="list-style-type: none"> • Design maturity; • Capability delivery to Navy; • Contractor performance; • Australian Industry Capability; • Overall budget affordability; and • System Integration. In addition, the Project is managing three issues relating to information sharing with international users, budget constraints and forecasting accuracy and uncertainty in the Batch 1 Build Scope .
Other Current Related Projects/Phases SEA5000 Phase 2 (Future Frigate - Weapons) – is scoped to deliver guided and non-guided munitions required by the <i>Hunter Class</i> Frigates. SEA5000 Phase 2 (Future Frigate – Weapons) now forms part of SEA1300 Phase 1.
Note Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Project Data Summary Sheets

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Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date		Description	\$m		Notes
Project Budget					
Jun 14	Original Approved (Initial Pass Approval)	62.8			
Sep 15	Interim Pass Approval	52.6			1
Jan 16	Pre 1st Pass Approval	22.1			2
Apr 16	Government 1st Pass Approval	208.2			
Oct 17	Interim Pass Approval	55.5			3
Jun 18	Government 2nd Pass Approval	5,782.7			
		Total at Second Pass Approval		6,184.0	
Aug 19	Real Variation - Transfer			3.3	4
Apr 21	Exchange Variation			(140.4)	
				(137.1)	
Jun 21	Total Budget – SEA5000PH1			6,046.9	
Project Expenditure					
Prior to Jul 20	Contract Expenditure – BAE Systems Maritime Australia (previously known as ASC Shipbuilding Pty Ltd)	(254.1)			
	Contract Expenditure - US Government FMS Case (ATPGSC)	(74.1)			
	Contract Expenditure - CEA Technologies Pty Ltd	(38.0)			
	Contract Expenditure – Odense Maritime Technology	(25.2)			
	Other Contract Payments / Internal Expenses	(319.2)			
				(710.6)	5
FY to Jun 21	SEA5000PH1				
	Contract Expenditure – BAE Systems Maritime Australia (previously known as ASC Shipbuilding Pty Ltd)	(337.1)			
	Contract Expenditure - US Government FMS Case (ATPGSC)	(58.8)			
	Contract Expenditure - Raytheon Australia Pty Ltd	(10.4)			
	Contract Expenditure - US Government FMS Case (ATPLFZ)	(7.5)			
	Other Contract Payments / Internal Expenses	(94.7)			
				(508.5)	6
Jun 21	Total Expenditure			(1,219.1)	
Jun 21	Remaining Budget			4,827.9	
Notes					
1	CEA Technologies Radar Development Program				
2	Initiating the Competitive Evaluation Process SEA5000 for Future Frigates.				
3	Conduct further combat system development activities and to secure critical support staff				
4	Funding transfer between Capability Acquisition and Sustainment Group (CASG) and Estate and Infrastructure Group (E&IG) to address funding shortfall with the Naval Capability Infrastructure Subprogram (NCIS).				
5	Shipyard Infrastructure requirement studies, FMS payments for Combat System studies, strategic advice and specialist engineering services: Competitive Evaluation Process Participants (CEP) payment totals to \$122.7m, Project and Commercial Support payment totals to \$107.1m and Technical Support payment totals to \$89.4m. Other Contract Payments / Internal Expenses includes payment totals of \$19.5m to SAAB across multiple purchase orders attributed to the Enterprise Partnering Arrangement				
6	Strategic advice and Specialist engineering: Project and Commercial Support payment totals to \$65.1m, Technical Support payment totals to \$24.6m, and Competitive Evaluation Process Participants (CEP) payment totals to \$5.0m. Other Contract Payments / Internal Expenses includes payment totals of \$4.5m to SAAB across multiple purchase orders attributed to the Enterprise Partnering Arrangement				

2.2 A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
587.0	506.9	498.4	PBS to PAES: The variation between the Budget and Revised estimates is primarily due to the reprogramming of activities against the Head Contract. PAES to Estimate Final Plan: The variance is due to foreign exchange supplementation during Pre-ERC and PBS build.
Variance \$m	(80.1)	(8.5)	Total Variance (\$m): (88.6)
Variance %	(13.6)	(1.7)	Total Variance (%): (15.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		6.4	Australian Industry	The variation is mainly due to higher than anticipated disbursements against Aegis Foreign Military Sales cases and the reprogramming of activities against the Head Contract including the agreed rescheduling of the Integrated Logistics Support contract change.
		3.7	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
498.4	508.5	10.1	Total Variance	
		2.0	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
CEA Technologies Pty Ltd	Nov 14	0.9	44.0	Fixed	Standard Defence Contract	1,5
The United States Government (AT-P-GSC)	Jan 16	5.5	253.5	Reimbursement	Foreign Military Sales (FMS)	3,5
BAE Systems Maritime Australia (previously known as ASC Shipbuilding Pty Ltd)	Dec 18	1,904.1	2,338.6	Variable	Standard Defence Contract	4,5
Odense Maritime Technology	Mar 19	0.3	62.4	Variable	Standard Defence Contract	4,5
Raytheon Australia Pty Ltd	Apr 19	6.8	15.3	Variable	Standard Defence Contract	2,5
Raytheon Australia Pty Ltd	Oct 19	9.0	34.6	Variable	Standard Defence Contract	2,5
The United States Government (AT-P-LFZ)	Sep 20	626.6	551.6	Reimbursement	Foreign Military Sales (FMS)	5
Notes						
1	Continuing Risk Reduction radar development activities.					
2	Supply of Combat Systems Technical Support Services.					
3	US Government Initial MOU was for SEA5000 Feasibility and Technical Integration Study. Contract value was increased for additional Feasibility and Technical Risk Reduction Studies including CEAFAAR/Cooperative Engagement Capability (CEC) and integration of CEAFAAR into the Aegis Combat System. Contract value also includes acquisition of Long Lead Time Items for Development Sites.					
4	Design and Productionisation for Hunter Class Frigates.					
5	Contract values as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
Contractor	Contracted Quantities as at		Scope			Notes
	Signature	30 Jun 21				
CEA Technologies Pty Ltd	N/A	N/A	Risk Reduction Studies and Radar Development.			
The United States Government (AT-P-GSC and AT-P-LFZ)	N/A	N/A	Feasibility and Integration studies and acquisition of LLTIs.			
BAE Systems Maritime Australia (previously known as ASC Shipbuilding Pty Ltd)	N/A	N/A	Design and Productionisation for Hunter Class Frigates.			
Raytheon Australia Pty Ltd	N/A	N/A	Supply of Combat Systems Technical Support Services.			
Odense Maritime Technology	N/A	N/A	Identification of Support Requirements during Design and Productionisation Phase			
Major equipment accepted and quantities to 30 Jun 21						
N/A						
Notes						

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Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirements	Mission System	Sep 19	N/A	Sep 19	0	
System Definition	Mission System	Nov 20	N/A	Nov 21	12	1,4
Preliminary Design	Mission System	N/A	N/A	Jul 23	N/A	1,3,4
Critical Design	Mission System (SCDR)	Nov 22	N/A	Sep 24	22	1,2,4
	Combat System	Feb 23	N/A	Oct 24	20	1,2,4
	Mission System (FCDR)	Jun 24	N/A	Oct 25	16	1,2,4
Notes						
1	Forecast dates for events occurring more than 18 months from the current date are not robust and should be considered indicative dates only as the contractor continues to define the schedule.					
2	The revised forecast date for the System Definition Review has driven delays to subsequent design reviews. Delayed achievement of the System Definition Review is the result of design delays experienced in the Type 26 Program, which are having a flow-on impact to activities in the Hunter Class frigate project.					
3	There is currently no contracted date for the Preliminary Design Review – Mission System, however this date has been included in the baseline schedule as part of the initial Integrated Baseline Review (IBR1).					
4	Abovementioned milestone/event dates derived from Contract Master Schedule include hard constraints. This means the dates are considered achievable and will not move if schedule slippage occurs.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration	Prototyping commencement	N/A	N/A	Dec 20	N/A	1
	Ship 1 Build commencement	TBA	N/A	Dec 22	N/A	1,3
Acceptance	Ship 1	TBA	TBA	TBA	N/A	2
Notes						
1	Prototyping commencement occurred on time as at December 2020. Ship 1 cut steel milestone remains subject to ongoing negotiations with BAESMA. The forecast identified above refers to the timeframes currently being worked to by the project.					
2	SEA5000 Phase 1 has approval to procure long lead time items (LLTIs), and perform prototyping, detail Design and Productionisation of the Hunter Class Frigate. This milestone is expected to be defined by Government in subsequent Second Pass Approvals. As such, the current forecast has been informed in consultation with BAESMA.					
3	The risk to commencement of Ship 1 cut steel remains high but is still considered achievable at this stage. The production by design zone methodology should allow construction of low risk blocks to commence in December 2022 as planned, which will enable the design for higher risk and more complex blocks to mature.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

3.3 Progress Toward Materiel Release and Operational Capability Milestones				
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	TBA	TBA	N/A	1,2
Initial Operational Capability (IOC)	TBA	TBA	N/A	1,2
Final Materiel Release (FMR)	TBA	TBA	N/A	1,3
Final Operational Capability (FOC)	TBA	TBA	N/A	1,3
Notes				
1	SEA5000 Phase 1 has approval to procure long lead time items (LLTIs), perform prototyping and detail Design and Productionisation of the Hunter Class Frigate.			
2	These milestones are expected to be defined by Government in 2021 when approval for Batch 1 Build is sought.			
3	These milestones are expected to be defined by Government in subsequent Second Pass Approvals.			
Schedule Status at 30 June 2021				
Not Applicable				
Note				
Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.				

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
Not Applicable	Green: The project does not currently have any materiel capability delivery approved. The project is currently approved for detailed design and productionisation, prototyping, and procurement of Long Lead Time Items for the <i>Hunter Class Frigate</i> . Capability requirements continue to be refined and assessed against the Second Pass approved scope, cost and schedule. SEA5000 Phase 1 is expected to return to Government in quarter 4 2021 to seek approval of the scope and funding required for Batch 1 Build.
	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 Auditor-General's Independent Assurance Report.

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Note 1	Not yet achieved
Initial Operational Capability (IOC)	Note 1	Not yet achieved
Final Materiel Release (FMR)	Note 1	Not yet achieved
Final Operational Capability (FOC)	Note 1	Not yet achieved
Note		
1	SEA5000 Phase 1 has approval to procure long lead time items (LLTIs), perform prototyping and detailed Design and Productionisation of the Hunter Class Frigate. These milestones are expected to be defined by Government in subsequent Second Pass Approvals.	

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Due to the maturity of the Reference Ship Design and the increased weight of the Type 26 and Hunter Class Frigate , there is a risk that the Hunter Class Frigate design may not meet intended service life expectations.	The Hunter Class Frigate program in cooperation with the UK Ministry of Defence and BAESMA has initiated a program in order to fully quantify both the design and management aspects of the Hunter Class Frigate. The program is undertaking a series of reviews and analysis to support and progress design.
The Type 26 is designed to UK Ministry of Defence Standards for Royal Navy's needs. There is a Risk that design changes for the Royal Australian Navy are not identified in sufficient time to allow their implementation resulting in costly rework.	The SEA5000 Phase 1 project has initiated an analysis of the impact of any differences between the Standards applied on the Type 26 and that used by the RAN. It is also intended to conduct a Capability Requirements Review to understand if there are any differences between Hunter Class and the RAN's functional requirements.
Acquisition of the Hunter Class Frigate maybe affected by overall funding or programming issues arising from internal cost growth / forecasting accuracy and external budget constraints, leading to an impact on capability and schedule.	This risk has been realised and transitioned into an issues (refer to Section 5.2 below).
There is a risk that when production commences the design may not be sufficiently mature necessitating design changes, causing rework and resulting in additional costs and possible schedule overruns.	The project is conducting assurances on high resource demand risk areas to understand exposure. BAESMA is implementing a workforce management plan to address workforce shortages. BAE Systems' UK is recruiting additional designers to ensure the Type 26 design is mature prior to design separation for the <i>Hunter Class Frigate</i> specific design. Review boards and working groups established to increase understanding and confidence in capability to be realised.
The workforce requirements for the SEA5000 Phase1 capability are not fully funded within Navy's approved guidance.	The Directorate of Navy Workforce Requirements is analysing the Scheme of Complement and Shore Enabler requirement to ensure it accurately captures the workforce required to sustainably crew the Hunter Class Frigate. Positions will be prioritised to ensure a requisite workforce capability is available to support the Hunter Class Frigate introduction into service.
The Commonwealth does not provide adequate assurance over BAESMA's performance in executing the Head Contract leading to less optimal value for money outcomes.	An Integrated Baseline Review (IBR) has been undertaken which will set a performance management baseline which enables the Commonwealth to accurately measure cost and schedule performance. IBRs are planned to be conducted periodically during the Design and Productionisation phase, and during Batch 1 Build ramp up. The Head Contract has data access plans which ensures the Commonwealth obtains unfettered access to relevant Contractor data, information and

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	<p>systems. Audit plans are being developed to manage BAESMA's delivery of their Plans and obligations.</p> <p>With such measures in place, formal approval was given in May 2021 for elements of this risk to be reduced to BAU activities with the remainder merged with other risks. Subsequently this risk has been downgraded/retired.</p>
The Prime may not have access to the required industrial base (infrastructure, supply chain, workforce) to support prototyping and construction activities.	<p>The Head Contract deliverables, such as the Continuous Naval Shipbuilding Strategy and Plan, Workforce Management Plan and Supply Chain Management Plan are to be progressively delivered by BAESMA ensuring access to and obligations to develop further the workforce and supply chains required to deliver the Hunter Class Frigates.</p> <p>Australian Naval Infrastructure (ANI) was stood up in 2017 to deliver infrastructure in the Osborne Naval Shipyard and is now licenced for BAESMA to occupy and use these facilities. The Osborne facilities are now available to BAESMA and officially opened by the Prime Minister of Australia.</p>
The sustainment of the Hunter Class frigate may be affected by overall funding or programming issues arising from internal cost growth / forecasting accuracy and external budget constraints, leading to an impact on capability and schedule.	<p>The project uses a process of progressive Government approval. Discrete funding scopes are approved by Government for the execution of limited contract scopes as required. Benchmarking and lessons learnt from the sustainment of the existing fleet is used to refine cost. Cost is updated through a Life Cycle Costing model to forecast sustainment requirements to maximise cost quality for subsequent Government approval of the next stage of activity.</p> <p>Noting the above remedial actions, formal approval was given in May 2021 for elements of this risk to be reduced to BAU activities, with the remainder merged with other risks. Subsequently, this risk has been downgraded/retired.</p>
The project may not be able to fully deliver Government Furnished Material to meet key milestones impacting cost and schedule.	<p>The Program is currently developing plans and processes to acquire and manage the delivery of Government Furnished Material to support the Program design time frames.</p> <p>Noting the above remedial actions, formal approval was given in May 2021 for elements of this risk to be reduced to BAU activities, with the remainder merged with other risks. Subsequently, this risk has been downgraded/retired.</p>
There is a chance that the technical complexity of incorporating combat system and sensors with the selected ship design may delay capability milestones.	<p>Ships Division will lead ongoing technical engagements between the shipbuilder and suppliers to share relevant information to enable efficient incorporation of combat system and sensors into the platform.</p> <p>Multiple working groups have been established to support the engagement.</p> <p>Noting the above remedial actions, formal approval was given in May 2021 for elements of this risk to be reduced to BAU activities, with the remainder merged with other risks. Subsequently, this risk has been downgraded/retired.</p>
Competing Project objectives may impact the Hunter Class Frigate's ability to maximise Australian Industry Content.	<p>Commonwealth to work with BAESMA to better understand the Australian industrial base and identify more opportunities to invest in, and develop local industry capability and capacity. AIC obligations are built into the Head Contract via the AIC Strategy and Plans.</p>
Combat Systems integration is complex and may not support timely achievement of capability requirements.	<p>Ships Division will lead an ongoing review of the viability of planned systems for the Batch 1 ship deliveries. This will include the identification and resourcing of technical activities to develop an integrated systems approach.</p> <p>The program is also conducting Requirement Reviews to understand and assess any potential issues/gaps.</p> <p>Noting the above remedial actions, formal approval was given in May 2021 for elements of this risk to be reduced to BAU activities, with the remainder merged with other risks. Subsequently, this risk has been downgraded/retired.</p>
BAESMA does not have access to an adequate land based test functionality to support the functional integration of the Combat System for Ship 1 IOC.	<p>Design considerations are being developed for provision of a Land Based Testing System.</p> <p>Design of these facilities is now underway, being led by Estate and Infrastructure Group.</p> <p>Noting the above remedial actions, formal approval was given in May 2021 for elements of this risk to be reduced to BAU activities, with the remainder merged with other risks. Subsequently, this</p>

Work needs to be undertaken to ensure the Build Scope Statement contains a minimum level of uncertainty acceptable to Defence and Government	risk has been downgraded/retired. This risk has now been realised as an issue (refer to Section 5.2 below).
Emergent Risks (risk not previously identified but has emerged during 2020–21)	
Description	Remedial Action
The current Design and Productionisation scope realises a Batch 1 design that does not form a suitable basis for future batches, given the expectation of further capability insertion into future batches.	The Phase 1 Project is preparing advice regarding next steps to understand and inform decisions.
5.2 Major Project Issues	
Description	Remedial Action
The UK, AUS, US and Canada cannot effectively share information to support the iterative design cycle for the Hunter Class Frigate Program.	Actively manage & implement actions arising from Global Combat Ship (GCS) User Group through weekly teleconferences. Hold discussions between the relevant US and UK security authorities to clarify bilateral agreements. Implement GCS User Group document handling template. Provide support and oversight of Data Management System (DMS) development.
Acquisition of the Hunter Class Frigate may be affected by overall funding or programming issues arising from internal cost growth / forecasting accuracy and external budget constraints, leading to an impact on capability and schedule.	The SEA5000 Phase 1 Project uses a process of progressive Government approval. The approved scope of the project is limited to the design, productionisation and contracting of limited equipment which have long production timelines. The project conducts on-going engagement with the Head Contract and other major providers to facilitate improved cost management. Acquisition and cost models are refined through the execution of discrete contract scopes and design reviews to enable the project to meet budgeting and programming expectations along with proactive management of cost risk. Note this issue was previously reported as a risk in Section 5.1 above.
Work needs to be undertaken to ensure the Build Scope Statement contains a minimum level of uncertainty acceptable to Defence and Government.	The SEA5000 Phase 1 Project is working collaboratively with BAESMA to meet a quarter 4 2021 approach to Government for the Build Scope. BAESMA to deliver its build scope response and costings for Commonwealth evaluation. Note this issue was previously reported as a risk in Section 5.1 above.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Government Furnished Material (GFM), data and information requirements need to be clearly defined, articulated and agreed between the platform designer, the various CoA Branches, Divisions and SPO's responsible for delivery, and materiel suppliers. This is required in terms of both the level of data maturity required, and schedule required by dates to enable the platform designer to meet key project milestones.	Schedule Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	CDRE Scott Lockey

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Project Data Summary Sheet¹⁴⁷

Project Number	SEA1000 Phase 1B
Project Name	FUTURE SUBMARINES DESIGN ACQUISITION
First Year Reported in the MPR	2019 - 20
Capability Type	Replacement
Capability Manager	Chief of Navy
Government 1st Pass Approval	N/A
Key Government pre-Second Pass Approval	Feb 19
Budget at Key Government pre-Second Pass Approval	\$5,952.5m
Total Approved Budget (Current)	\$5,818.2m
2020-21 Budget	\$768.3m
Complexity	ACAT 1



Section 1 – Project Summary

1.1. Project Description

SEA1000 Phase 1B intends to deliver a fleet of 12 regionally superior conventionally powered submarines to be known as the Attack Class. The Attack Class fleet will be built in Australia by an Australian workforce, at a purpose built Submarine Construction Yard, which will be owned by the Commonwealth through Australian Naval Infrastructure and operated by Naval Group. The Future Submarine Program will provide Australia with an enduring sovereign submarine capability, with the ability to build, operate, and sustain submarines in Australia into the future.

1.2. Current Status

Cost Performance

The in-year variation of **\$137.6m** is predominately attributed to not entering the next contracted work scope as initially forecast with Naval Group and Lockheed Martin Australia not achieving the expected labour levels in the Design, Build and Integration Contract. There is also lower than anticipated expenditure against other contractor support.

Project Financial Assurance Statement

As at 30 June 2021, project SEA1000 Phase 1B has reviewed the projects approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year or in prior years.

Schedule Performance

The Future Submarine Program (FSP) is continuing to work towards delivery of the first Attack class submarine in the early 2030s, subject to future Government Approvals beyond the design work currently Approved for Phase 1B of the Program.

In September 2017, the Commonwealth, Naval Group, and Lockheed Martin Australia completed a pre-sizing activity to determine the initial sizing envelope of the Attack class submarine. The pre-sizing activity was followed by a successful Preliminary System Requirements Review, which was completed in October 2017 on schedule and marked the end of Functional Analysis and the first phase of design.

The successful completion of Functional Analysis allowed entry to the phase of design known as Feasibility Studies. System Requirements Review (Feasibility Studies) was completed on schedule on 20 March 2018.

The Concept design process for the Attack class submarine involved refinement of the design and associated artefacts to maintain alignment with requirements, as requirements transition in parallel from preliminary to final status. It was vital to ensure that the concept design was concluded on a sound basis before the Project committed more resources to the next level of design, avoiding any costly and lengthy re-work in the future that are likely to arise if the concept design is not robust.

The Concept Studies Review was not completed as originally planned in September 2018 due to the need to further develop the transverse balances and the Definition Plan for the subsequent design phase. The rescheduled Concept Studies Review was conducted in November 2018, corrective actions were completed by January 2019 and the Concept Studies Review **action** was satisfactorily completed in February 2019.

Compared to pre-contract estimates for the progression of design, an extended schedule for the design work has been implemented under the Submarine Design Contract (SDC) – the first program contract executed under the Strategic Partnering Agreement. This

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

schedule addresses the need for high-levels of design maturity required by Defence as the design phase of the Program progresses. Design work has continued to progress to the required level of maturity under the Submarine Design Contract. The extended period for the design work has not impacted the scheduled delivery date of the first or follow on submarines.

Under the Submarine Design Contract, the Functional Ship Systems Requirements Review was scheduled for 31 October 2019 and experienced a delay of five weeks to conduct the review. **Actions from this review were completed across the first half of 2020 and the Functional Ship System Requirements Review was formally closed in August 2020.** The delay was assessed as recoverable by the next major milestone review, Functional Ship - System Functional Review (FS-SFR) **however some delay in readiness for the FS-SFR was realised. The Commonwealth elected to enter the FS-SFR as planned in January 2021 on the basis that a credible action plan was in place to confirm the design baseline for the Definition design phase. The program expects to formally exit the FS-SFR in Q3 2021 to support commencement of the Functional Ship Preliminary Design phase.**

Material Capability Delivery Performance

SEA1000 Phase 1B does not currently have any material capability delivery approved. The project is currently approved for:

- design including functional analysis, feasibility studies, design definition studies and basic design to enable design and construction of 12 regionally superior Future Submarines; and
- design and construction of the Submarine Construction Yard infrastructure and facilities to enable, build integration and testing of platform and combat system elements of the Future Submarine.

Capability requirements continue to be refined and assessed against the approved scope, cost and schedule.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3. Project Context

Background

The SEA1000 Phase 1B Program is a large and complex program tied into the National Naval Shipbuilding Plan. The Program is in the design stage, and has multiple Government decision-making points.

Initial options for the Future Submarine included a Military Off The Shelf (MOTS) or modified MOTS design, evolved Collins design and a new design. MOTS and modified MOTS options were removed from consideration following Government consideration in April 2013, based on an inability of available designs to meet Australia's essential capability requirements. Following extensive investigation into an evolved Collins design, Government agreed in September 2014 to cease work on progressing this option based on the effort required being equivalent to a new design.

On 26 April 2016, Government announced that Naval Group of France has been selected as the international partner to work with Australia on the design and delivery of the Future Submarines. The Design and Mobilisation Contract was signed with Naval Group on 30 September 2016 formally commencing design of the Future Submarine. The Strategic Partnering Agreement (SPA) was signed on 11 February 2019, an overarching agreement between the Commonwealth and Naval Group under which successive Program Contracts will be executed to deliver the Future Submarine Program. On 1 March 2019, the first contract under the SPA, the Submarine Design Contract was signed superseding the Design and Mobilisation Contract.

Following a Restricted Tender Process, Lockheed Martin Australia (LMA) was selected as the Future Submarine Combat System Integrator on 30 September 2016. An initial Design Services Contract was signed with Lockheed Martin on 17 November 2016. This contract was superseded by the Design Build and Integration Contract on 12 January 2018, which represents the long-term Combat System Integration contract and includes the execution of the initial work scope.

As announced by Government in April 2016, the Future Submarines will be constructed at a purpose built Submarine Construction Yard (SCY) at the Osborne Precinct in Adelaide. The SCY will require new infrastructure and upgrades to existing infrastructure to support the work of Naval Group and LMA. Naval Group will establish SCY Infrastructure Functional Requirements (IFR) and undertake design assurance activities to ensure the SCY is capable of building, integrating, testing and accepting into service the planned Future Submarine fleet.

Australian Naval Infrastructure (ANI) is the owner of the land and existing facilities at the Osborn Precinct. ANI's activities are fundamental to the successful achievement of Defence's Strategic Objective, which includes a rolling acquisition of submarines for the Commonwealth's continuous naval shipbuilding program. The first Attack Class Submarine is scheduled to enter service from the early 2030s as it is delivered to the Royal Australian Navy to commence initial Operational Test and Evaluation.

The Smart Buyer Process was introduced to Defence during 2016 and became a mandatory requirement for Defence projects during 2017. As this was after the Competitive Evaluation Process, it was not feasible to commence a Smart Buyer process for SEA1000 Phase 1B.

Uniqueness

SEA1000 Phase 1B will deliver 12 Attack Class submarines to the Royal Australian Navy and is the largest and most complex ship building endeavour undertaken in Australia.

As such, the project has unique tripartite governance arrangements to address the highly sensitive nature of the information and technologies procured from the United States of America, France and Australia, in the design of a regionally superior submarine.

Another unique element of the Program is its engagement with key suppliers in the design phase. This is required to design a submarine capable of regionally superior performance, simultaneously maximising Australian Industry involvement, and qualifying equipment to function effectively and safely in the undersea environment. This practice ensures Australia will be able to exercise sovereign control over operations and sustainment of the Future Submarine.

Major Risks and Issues

The project is currently managing risk at both a Tactical and Strategic level; generally reflected at the Contract and Program levels respectively. Strategic risks identified within Section 5 broadly fall under a number of key areas being:

- Contractor performance risk;
- Resources, Skills and Workforce Management risk;
- Risk to the adaption and enhancement of methods, processes, systems and standards;
- Australian Industry Capability risk; and

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<ul style="list-style-type: none"> Risk to capability delivery to Navy, cost and schedule. <p>The project is also managing one issue, relating to the Commonwealth and Naval Group being unable to agree by 31 January 2021 on the Core Work Scope 2 (CWS2) and Additional Work Scope 1 (AWS1) offers.</p>
Other Current Related Projects/Phases
N/A
Note
Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Sep 16	Original Approved (Government Interim Approval)	989.4	1
Oct 17	Real Variation - Transfer	(4.3)	2
Nov 17	Government Interim Approval	1,279.3	3
Sep 18	Real Variation - Transfer	(19.7)	4
Nov 18	Real Variation - Transfer	(7.3)	5
Feb 19	Real Variation - Transfer	(20.0)	5
	Real Variation - Transfer	(7.3)	2
	Government Interim Approval	3,742.4	6
	Total at Key Government pre-Second Pass Approval	5,952.5	
Jun 20	Real Variation - Transfer	(2.4)	2
Sep 20	Real Variation - Transfer	(7.9)	5
Dec 20	Real Variation – Budgetary Adjustment	0.1	7
Jan 21	Real Variation - Transfer	(6.4)	2
Jun 21	Exchange Variation	(117.8)	
	Total Budget	5,818.2	
Project Expenditure			
Prior to Jul 20	Naval Group – Submarine Design Contract	(394.3)	8
	Naval Group – Design and Mobilisation Contract	(369.1)	8
	Lockheed Martin Australia	(191.7)	8
	ASC Pty Ltd – Secondee Workforce	(34.9)	8
	US Government - Submarine Combat Control System MOU	(5.7)	8
	Other Contract Payments / Internal Expenses	(326.5)	9
		(1,322.2)	
FY to Jun 21	Naval Group - Submarine Design Contract	(414.1)	8
	Lockheed Martin Australia	(147.8)	8
	ASC Pty Ltd - Secondee Workforce	(10.5)	8
	US Government - Submarine Combat Control System MOU	(5.9)	8
	Naval Group - Design and Mobilisation Contract	(0.2)	8
	Other Contract Payments / Internal Expenses	(52.3)	10
		(630.8)	
Jun 21	Total Expenditure	(1,953.0)	
Jun 21	Remaining Budget	(3,865.2)	
Notes			
1	Government approval for the design and mobilisation phase for Naval Group and Lockheed Martin Australia, and work to be undertaken by Defence including establishment of the overseas government presence, mobilisation of the program office and initial development of facilities needed for the Program.		
2	Transfer to the CIOG component of SEA1000 Phase 1B for the Defence Secret Environment - International. The total value of the planned transfers relating to Note 2 is \$20.4m.		
3	Government approval for design of the combat system by Lockheed Martin Australia, activity to develop the concept design for the Future Submarine Construction Yard and Infrastructure business case, and program office costs.		
4	Transfer to the CIOG component of SEA1000 Phase 1B for Information Communication Technology Infrastructure Project requirements and Defence Secret Environment - International.		
5	Public Debt Interest on the equity provided to Australian Naval Infrastructure for the Submarine Construction Yard. The total value of the planned transfers relating to Note 5 is \$35.2m.		
6	Government approval for further design work by Naval Group and program office costs, and Portfolio Additional Estimates Statements 2018-19 budget measures.		
7	Budgetary adjustment due to out-turning.		
8	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
9	Other expenditure for the period to 30 June 2020 comprises payments for Contractor/Consultant Support (\$133m), Collins Class Life of Type Extension Activities (\$30.9m), Lockheed Martin Australia Combat System Integrator Initial Services Contract (\$29.5m), Facilities and Security arrangements in Cherbourg (\$18.8m), Legal Services (\$15.6m), US Government (\$15m), Naval Group - Design Services Contract (\$10.2m), Office Fitout (\$1.6m) and other expenditure not attributable to the listed contracts (\$71.8m).		
10	Other expenditure for the period from July 2020 to June 2021 comprises payments for Contractor/Consultant Support		

	(\$34.2m), US Government (\$4.9m), Facilities and Security Arrangements in Cherbourg (\$3.3m), Legal Support (\$2.8m), Collins Class Life of Type Extension Activities (\$1.3m) and other expenditure not attributable to the listed contracts (\$5.8m).
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2.2 A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
782.5	782.2	768.3	Portfolio Budget Statements (PBS) to Portfolio Additional Estimate Statement (PAES): The variation is due to an update of budget exchange rates. PAES to Estimate Final Plan: The variation relates to an update of budget exchange rates from 2020-21 MYEFO to 2021-22 PBS.
Variance \$m	(0.3)	(13.8)	Total Variance (\$m): (14.2)
Variance %	(0.0%)	(1.8%)	Total Variance (%): (1.8)

2.2 B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(83.4)	Australian Industry	The variation is predominately attributed to not entering the next contracted work scope as initially forecast with Naval Group and Lockheed Martin Australia not achieving the expected labour levels in the Design, Build and Integration Contract. There is also lower than anticipated expenditure against other contractor support.
		(32.3)	Foreign Industry	
			Early Processes	
		(22.9)	Defence Processes	
		1.0	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
768.3	630.8	(137.6)	Total Variance	
		(17.9)	% Variance	

2.3 Details of Project Major Contracts

Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Naval Group – Design & Mobilisation Contract	07 Oct 16	60.9	414.5	Cost Ceiling (capped)	Standard Defence Contract	1,5
ASC Pty Ltd – Seconded Workforce	08 Mar 17	22.1	58.7	Cost Ceiling (capped)	Standing Offer	2,5
Lockheed Martin Australia – Combat System Design Build and Integration Contract	12 Jan 18	607.2	792.5	Cost Ceiling (capped)	Standard Defence Contract	3,5
Naval Group – Submarine Design Contract	01 Mar 19	589.7	1,466.0	Cost Ceiling (capped)	Standard Defence Contract	4,5
US Government	05 Jul 19	224.8	197.8	Reimbursement	MOU	5
Notes						
1	Increase in contract value reflects ongoing inclusion of staged concept-design work scopes.					
2	Increase in contract value reflects ongoing requirement for technical and engineering expertise.					
3	Increase in contract value includes the costs for subsystems withheld at signature due to pricing uncertainty.					
4	Increase in contract value reflects inclusion of staged work scopes plus procurement of equipment. Major drivers for the increase in contract value include the planned procurements of main, critical and submarine construction yard equipment (CCP011) along with the funding required to progress program activities prior to the commencement of the definition design phase (CCP015).					
5	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates. This includes adjustments for indexation (where applicable).					
Contractor	Contracted Quantities as at		Scope	Notes		
	Signature	30 Jun 21				
Naval Group – Design & Mobilisation Contract	Nil	Nil	Progress the concept design for the future submarine in parallel to negotiation of the Strategic Partnering Agreement. It is anticipated that this contract will be closed during financial year 2021- 22.			
ASC Pty Ltd	Nil	Nil	Specialist engineering and technical services.			
Lockheed Martin Australia – Combat System Design Build and Integration Contract	Nil	Nil	Design and risk reduction work, selection of all sub-system suppliers, and delivery of a detailed design for the Combat System			
Naval Group – Submarine Design Contract	Nil	Nil	Progress submarine concept design through definition phase to basic design.			
US Government	Nil	Nil	Cooperative development, production, and support of the submarine combat control system.			

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Major equipment accepted and quantities to 30 Jun 21
N/A

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Requirements	Preliminary System Requirements Review (PSRR)	Oct 17	N/A	Oct 17	0	
	System Requirements Review (Feasibility Studies)	Mar 18	N/A	Mar 18	0	
	Combat System System Requirements Review	Nov 18	N/A	Sep 18	(2)	
	Concept Studies Review (CSR)	Sep 18	N/A	Feb 19	5	1
	Functional Ship Systems Requirements Review - Definition Phase	Oct 19	N/A	Aug 20	10	2
	Functional Ship Systems Functional Review	Jan 21	N/A	Sept 21	7	3,4
Preliminary Design	Combat System Preliminary Design Review	Dec 19	Oct 21	Oct 21	22	5
Critical Design	Combat System Critical Design Review	Mar 22	Jun 23	Jun 23	15	5
Notes						
1	Additional work was required to further develop the transverse balances and the Definition Plan for the subsequent design phase before entering the Concept Studies Review that was held in November 2018. The Commonwealth also required that a Tripartite Planning Conference be convened to successfully exit the Concept Studies Review and support orderly commencement of the Definition design work. The Conference was held in January 2019. The Commonwealth was satisfied with this outcome and the Concept Studies Review was effectively considered complete. Minor administrative actions followed and a letter advising the Contractor of formal exit was signed in February 2019.					
2	The Functional Ship Systems Requirements Review was held in December 2019. A series of actions were identified during the review to finalise the initial Functional Baseline, as well as traceability between the Technical Requirements Specifications and the Functional Performance Specification. These actions were progressively closed and formal exit from the review was confirmed in August 2020 on the basis that all actions were completed or agreed plans were in place to address the remaining outstanding actions.					
3	The Functional Ship – System Functional Review (FS-SFR) was held in January 2021. A series of actions across 3 key areas were agreed in signed meeting minutes and these actions are underway. A delivery of the Functional Ship – System Subsystem Specification (FS-SSS) and General Technical Requirements (GTRs) planned for July 2021 is expected to capture the agreed set of requirements considered essential to formally exit the FS-SFR.					
4	Compared to pre-contract estimates for the progression of design, an extended schedule for the design work has been implemented under the Submarine Design Contract – the first program contract executed under the Strategic Partnering Agreement. This schedule addresses the need for high-levels of design maturity required by Defence as the design phase of the Program progresses.					
5	Adoption by Naval Group of the standard IEEE 15288.2 Technical Reviews and Audits on Defence Programs during 2018/2019 has improved alignment in design maturity points between Naval Group and Lockheed Martin Australia. Adoption of this standard resulted in amendments to nomenclature, content and timing for some design reviews. Notably, the Functional Ship Systems Functional Review was introduced and both the Preliminary and Critical Design Reviews were re-defined in terms of content and timing.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration	TBA	TBA	TBA	TBA	N/A	1
Acceptance	TBA	TBA	TBA	TBA	N/A	1
Notes						
1	SEA1000 Phase 1B has approval to conduct basic design of 12 regionally superior Future Submarines and design and construction of the Submarine Construction Yard infrastructure and facilities to enable, build integration and testing of platform and combat system elements of the Future Submarine. The above milestones are expected to be defined by Government in subsequent approvals.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved / Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	TBA	TBA	N/A	1
Initial Operational Capability (IOC)	TBA	TBA	N/A	1
Final Materiel Release (FMR)	TBA	TBA	N/A	1
Final Operational Capability (FOC)	TBA	TBA	N/A	1
Notes				
1	SEA1000 Phase 1B has approval to conduct basic design of 12 regionally superior Future Submarines and design and construction of the Submarine Construction Yard infrastructure and facilities to enable, build integration and testing of platform and combat system elements of the Future Submarine. The above milestones are expected to be defined by Government in subsequent approvals.			

Schedule Status at 30 June 2021	
Not Applicable	
Note	
Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
Not Applicable	<p>Green: SEA1000 Phase 1B does not currently have any materiel capability delivery approved. The project is currently approved for:</p> <ul style="list-style-type: none"> - design including functional analysis, feasibility studies, design definition studies and basic design to enable design and construction of 12 regionally superior Future Submarines; and - design and construction of the Submarine Construction Yard infrastructure and facilities to enable, build integration and testing of platform and combat system elements of the Future Submarine. <p>Capability requirements continue to be refined and assessed against the approved scope, cost and schedule. SEA1000 Phase 1B is expected to return to Government in FY 21/22 to seek progressive approval of scope and funding as the Program moves through the design and build phase.</p> <p>The first Attack Class Submarine (HMAS Attack) is scheduled to enter service from the early 2030s as it is delivered to the Royal Australian Navy to commence Operational Test and Evaluation. This is the point after which all contractor sea trials have been completed and the submarine has been formally accepted from Naval Group and Lockheed Martin Australia. During Operational Test and Evaluation, the Commonwealth personnel and persons providing services on behalf of the Commonwealth submarine will be progressively released for operations during the Operational Test and Evaluation, after which time the submarines will continue in service.</p>
	<p>Amber: N/A</p>
	<p>Red: N/A</p>
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.	

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Note 1	Not yet achieved
Initial Operational Capability (IOC)	Note 1	Not yet achieved
Final Materiel Release (FMR)	Note 1	Not yet achieved
Final Operational Capability (FOC)	Note 1	Not yet achieved
Note		
1	SEA1000 Phase 1B has approval to conduct basic design of 12 regionally superior Future Submarines and design and construction of the Submarine Construction Yard infrastructure and facilities to enable, build integration and testing of platform and combat system elements of the Future Submarine. The above milestones are expected to be defined by Government in subsequent approvals.	

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 our Program Partners will not adequately address issues and challenges (including technical risks) that arise during the course of the Program.	Contracted requirements exist on Program performance, behaviours and expectations and are supported by: ongoing engagement with CEOs; bilateral and tripartite governance arrangements; and ongoing independent critical peer review by

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	<p>the Naval Shipbuilding Advisory Board and Submarine Advisory Committee.</p> <p>The Commonwealth is monitoring performance against the Program requirements and working with the Program Partners to ensure cost, schedule and requirements (including technical requirements) are met.</p>
There is a risk that Program Participants are unable to staff the Program with the right number of suitably qualified and experienced personnel, build skills to prepare for construction and execute the Program effectively and with increasing productivity over time.	<p>Program Partners have established Resourcing Profiles for current and future work; and must pass Mandated Systems Reviews before progressing to subsequent stages of design and delivery. Contracted requirements exist for delivery of a Capability Realisation Plan for Naval Group Australia and the Commonwealth-monitoring of ramp-up and training plans. Other actions include: Defence and Naval Group Australia working in close collaboration with the Naval Shipbuilding College and the Naval Shipbuilding Industry Reference Committee.</p> <p>A Workforce Plan has been developed to ensure ongoing ramp up of skills in Defence's Future Submarine Program (FSP) Office to provide sufficient capacity to monitor and manage Partner performance.</p> <p>Other actions include: mentoring and training programs to develop the skills and experience of junior Australian Public Service personnel; Succession Planning; ongoing recruitment of personnel to authorised levels and rebalancing of skills and experience to meet changing needs as the Program transitions from design through to construction and sustainment; including the establishment of Integrated Work Partner (IWP) contracts with Manpower Service Providers (MSPs) to consolidate the delivery model of Seconded services, increase the flexibility in managing the Seconded workforce and achieve cost savings.</p>
There is a risk to the implementation of best-practice industry methods, processes systems and standards (including those related to program planning and control) to promote effectiveness and efficiencies.	<p>Contracted requirements exist for the adaption and enhancement of methods, processes, systems and standards to meet all FSP Objectives; to demonstrate how these meet the Commonwealth's needs; and are implemented in Australian (including through modern manufacturing in a newly established Submarine Construction Yard in Adelaide).</p> <p>Requirements also exist for well-defined plans, an effective resource-based schedule, sound planning and Program management; and for the establishment of program management conforming to Australian standards.</p> <p>Integrated Baseline Reviews (IBRs) are being undertaken which will set performance measurement baselines which enables the Commonwealth to accurately measure cost and schedule performance. IBRs are planned to be conducted periodically through each Contract phase.</p>
There is a risk that our Program Partners fail to maximise Australian Industry involvement through all phases of the Program without unduly compromising capability, cost or schedule.	<p>Contracted requirements exist for Australian Industry Capability Plans for each Phase of the FSP, for Defence to approve engagement of key subcontractors; and for Naval Group to transfer procurement functions in France to Naval Group Australia. Contract requirements and processes have been developed to exercise better make-by decisions on best-for-program basis.</p>
There is a risk to the FSP Strategic Objectives for the achievement of a regionally superior Attack Class submarine capability that provides the Commonwealth with enduring sovereign control over the operation and sustainment of Australia's Future Submarine capability; on cost and on schedule.	<p>Sound requirements have been developed for the Attack class. Compliance is being monitored through the traceability of requirements to design artefacts and ongoing Design Reviews. The Commonwealth is monitoring performance against the Design Reviews. Contracted requirements exist for the development and annual reporting of Program Cost Estimates (PCE), particularly within the design phase, to track and control costs as design decisions are made to balance capability and affordability. Other actions include cost transparency; routine assessment of pricing and expenditure; and cost and schedule management.</p> <p>Requirements also exist for well-defined plans, an effective resource-based schedule, sound planning and Program management; and for the establishment of program management conforming to Australian standards. The Commonwealth is monitoring performance against the Contract Master Schedules (CMS), Integrated Master Schedule (IMS) and (PCE); supporting additional Program planning and control support. IBRs are being undertaken which will set a performance measurement baselines which enables the Commonwealth to accurately</p>

	measure cost and schedule performance. IBRs are planned to be conducted periodically through each Contract phase.
Emergent Risks (risk not previously identified but has emerged during 2020–21)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
There is an issue that the Commonwealth and Naval Group were unable to agree the fundamental Assumptions/requirements and/or the Not to Exceed (NTE) Price for the Core Work Scope 2 (CWS2) and Additional Work Scope 1 (AWS1) offers by 31 January 2021.	Both the SPA and SDC provide controls for this Issue. The Commonwealth is also providing Program planning and control support. Recent Commonwealth correspondence and communication has been provided to Naval Group to manage and control this issue; the effectiveness is being monitored.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Careful selection of Acquisition Contractors with relevant experience and knowledge, underpinned by strong commercial arrangements, is essential to protect the Commonwealth's interests	Contract Management
The Program must be an informed customer, closely monitoring Contractor progress with strong and pro-active management.	Contract Management
Research into program failures and lessons learned from submarine design by allied nations ensured SEA1000 Phase 1B was aware of the necessity of having a set of good requirements to achieve success in design and development.	Requirements Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Mr Gregory Sammut
Branch Head	CDRE Craig Bourke

Project Data Summary Sheet¹⁴⁸

Project Number	LAND400 Phase 2
Project Name	MOUNTED COMBAT RECONNAISSANCE CAPABILITY
First Year Reported in the MPR	2019-20
Capability Type	Replacement
Capability Manager	Chief of Army
Government 1st Pass Approval	Dec 14
Government 2nd Pass Approval	Mar 18
Budget at 2 nd Pass Approval	\$5,762.7m
Total Approved Budget (Current)	\$5,655.4m
2020-21 Budget	\$488.7m
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND400 Phase 2 will **acquire** the Boxer 8x8 Combat Reconnaissance Vehicle (CRV) to meet Army's land combat reconnaissance requirements. The Project is approved to acquire 211 vehicles, additional modules, training **systems** and support systems to replace the in-service capability provided by the Australian Light Armoured Vehicle (ASLAV).

1.2 Current Status

Cost Performance

In-year

As at 30 June 2021, financial year **2020-21** expenditure was **\$414.6m** against a Year End (YE) budget of **\$488.7m**. The YE variance is primarily due to **later than expected achievement of various milestones in the Rheinmetall Defence Australia (RDA) Acquisition Contract. The reasons for delay are a combination of technical challenges and the impacts of COVID-19 (including supply chain disruptions and travel restrictions).**

Project Financial Assurance Statement

As at 30 June 2021, project LAND400 Phase 2 has reviewed the Project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks, and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The Project has not applied contingency in the financial year.

Schedule Performance

Initial Operational Capability remains on track for June 2022.

The Project **has taken** delivery of the first batch of 25 vehicles (**known as Block I**), whilst concurrently contributing towards the design of Block II vehicles. In the **three** years since contract signature, the project has undertaken a series of complex changes including the incorporation of a new electronic architecture.

Materiel Capability Delivery Performance

As at 30 June **2021, the Commonwealth has accepted all** 25 Block I Boxer CRVs. Assembly of the Block II Boxer CRVs is scheduled to commence at the Rheinmetall Defence Australia (RDA) Military Vehicle Centre of Excellence (MILVEHCOE) in 2022 and is expected to be complete in 2026.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

The ASLAV supports the Australian Defence Force's mounted combat reconnaissance capability and has seen extensive operational service, including in East Timor, Iraq and Afghanistan. Introduced in 1992, the ASLAV fleet will reach the end of its life around **2023 and is expected to be withdrawn from service in 2025.**

The Government gave First Pass Approval for a replacement Mounted Combat Reconnaissance Capability (MCRC) in December 2014. An assessment prior to First Pass Approval identified that current Military-Off-The-Shelf (MOTS) solutions would be unlikely to be capable of meeting all of Army's capability requirements. In response to the Request For Tender, tenderers were required to

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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.

<p>submit a MOTS solution, and were also provided the option of submitting a 'MOTS Plus' solution (defined as a MOTS baseline vehicle reconfigured with a single package of upgrades in order to deliver an increased level of compliance with the technical, functional and performance requirements). In March 2018, Government announced RDA as the preferred tenderer for the delivery of an Australianised Boxer 8x8 CRV to fulfil the MCRC for the ADF – an acquisition contract was signed in August 2018 for the provision and initial support of 211 Boxer CRVs.</p> <p>The first 25 Boxer CRVs, referred to as Block I, were primarily manufactured and assembled in Germany, with final integration and acceptance testing undertaken in Australia. A gradual transition will occur from Germany to Australia for the assembly of the remaining 186 (Block II) vehicles – this will be via a coordinated ramp down in Germany and ramp up in Australia, thereby maximising the effect of technology transfer and reflecting the growing skill base in Australia.</p> <p>There will remain some vehicle subsystems for which the transfer of manufacture or assembly from Europe to Australia would not be cost-effective and will continue to be supplied from Germany (e.g. welded drive module hulls and 30mm cannons). Final assembly, integration, set to work, and testing of those elements will however still occur in Australia, whilst selected low-volume variants will be assembled in Germany.</p> <p>Delivery of the 211 vehicles will be via two deliberate Blocks (I and II). Of the 25 vehicles in Block I, the 13 Multi-Purpose Variant Boxer CRVs are a 'MOTS' solution, whilst the remaining 12 Reconnaissance and all of the 186 Block II CRVs are a 'MOTS Plus' solution. Block II consists of five variants: 121 Reconnaissance, 15 Command and Control, 29 Joint Fires and Surveillance, 10 Repair and 11 Recovery vehicles.</p> <p>The Boxer CRV will form part of Army's modernised Armoured Fighting Vehicle capability, until its life-of-type (approximately 2055).</p> <p>The Smart Buyer Process was introduced to Defence during 2016 and became a mandatory requirement for Defence projects during 2017. As the new process was introduced after LAND400 Phase 2 had approached the market, it was not feasible to implement it within the timeframe available.</p> <p>One 'Stop Payment' has previously been invoked on RDA in response to the delayed achievement of a contract milestone (July to September 2019) – this Stop Payment has now been lifted.</p>			
<p>Uniqueness</p> <p>LAND400 Phase 2 is unique in that Australia is the first nation to acquire a Boxer vehicle with a manned-turret, a variant that other countries have expressed an interest in buying. Additionally, LAND400 Phase 2 is acquiring a Reconfigurable Driver Training Simulator (RDS) – an innovative Australian-developed simulator that uniquely, can be reconfigured for a variety of different armoured vehicles. The RDS is attracting global interest for follow on sales and in 2020, the Project won an Essington-Lewis Award for the best minor acquisition under \$50 million.</p>			
<p>Major Risks and Issues</p> <p>The following risks and issues are being managed by the Project:</p> <ul style="list-style-type: none"> • Failure of Boxer CRV to meet the contracted specifications • Failure to meet scheduled delivery and operational Milestones • Failure to integrate LAND200 Systems onto the CRV • Impacts of COVID-19 on RDA • Immersive Tactical Trainer – Containerised Variant (ITT-C) Design is not feasible • Cost of project contractor support exceeds budget • RDA variance at completion exceeds budget allocated cost • LAND400 Phase 2 Training System External Interfaces • Command, Control, Communications, Computers and Intelligence (C4I) System Software and Equipment Availability • C2 and JSF inability to access external power source • Initial Material Release (IMR) exceptions 			
<p>Other Current Related Projects/Phases</p> <p>LAND200 (Battlefield Command System) is delivering two subsystems, these include:</p> <ul style="list-style-type: none"> • Battlefield Management System (BMS) — that enables vehicle commanders to monitor, direct and review operations with electronic displays of maps and combat data; and • Tactical Communications Network (TCN) — comprising secure, mobile communications infrastructure to support the distribution of the BMS and other combat systems used by Army. 			
<p>Note</p> <p>Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>			

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Dec 14	Original Approved (Government First Pass Approval)	116.7	
	Government Second Pass Approval	5,646.0	
Mar 18	Total at Second Pass Approval	5,762.7	
Jun 21	Exchange Variation	(107.3)	
Jun 21	Total Budget	5,655.4	
Project Expenditure			
Prior to Jul 20	Contract Expenditure – RDA (Prime Contract)	(871.3)	
	Contract Expenditure – NIOA (Explosive Ordnance)	(44.7)	
	Contract Expenditure – UMS (Reconfigurable Driver Simulator)	(18.4)	
	Contract Expenditure – EOS (Remote Weapon Station)	(2.5)	
	Other Contract Payments / Internal Expenses	(129.4)	1

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FY to Jun 21	Contract Expenditure – RDA (Prime Contract) Contract Expenditure – NIOA (Explosive Ordnance) Contract Expenditure – UMS (Reconfigurable Driver Simulator) Contract Expenditure – EOS (Remote Weapon Station) Other Contract Payments / Internal Expenses	(389.4) (7.6) (1.6) (3.0) (13.0)	(1,066.3)	2
Jun 21	Total Expenditure	(414.6) (1,480.9)		
Jun 21	Remaining Budget		4,174.5	
Notes				
1	Other Expenses (\$129.4m) are for Risk Mitigation Activity Contracts with Rheinmetall Landsysteme GmbH and BAE Systems (\$50.0m), Project Office Administration (\$33.9m), C4I (\$16.1m), Risk Mitigation Activity – Other (\$0.9m), Support Contract (\$3.4m), Test and Evaluation (\$2.7m), Extended Payment Terms Finance Charge (\$18.8m), Customs Duty (\$0.1m), German Quality Assurance (\$2.9m) and Remote Weapon Station – Block I (\$0.6m)			
2	Other Expenses (\$13.0m) are for C4I (\$1.4m), Project Office Administration (\$11.3m), German Quality Assurance (\$0.3m), Test and Evaluation (\$0.4m), Extended Payment Terms Arrangement (-\$1.5m), Support (\$0.5m), Customs Duty (\$0.3m) and other (\$0.3m).			

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
566.1	501.4	488.7	The variation from PBS to PAES is primarily due to later than expected achievement of various milestones in the RDA Acquisition Contract. The reasons for delay are a combination of technical challenges and the impacts of COVID-19. (including supply chain disruptions and travel restrictions). The variation from PAES to Final Plan is due to budget exchange rate updates.
Variance \$m	(64.7)	(12.7)	Total Variance (\$m): (77.4)
Variance %	(11.4)	(2.5)	Total Variance (%): (13.9)

2.2 B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(65.0)	Australian Industry	The Year End (YE) variance is primarily due to RDA not delivering seven Block I major systems reviews due to a combination of technical challenges and the impacts of COVID-19 (including supply chain disruptions and travel restrictions).
		(1.0)	Foreign Industry	
			Early Processes	
		(8.1)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
488.7	414.6	(74.1)	Total Variance	
		(15.2)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
RDA	Aug 18	3,890.2	3,725.7	Fixed	Standard Defence Contract	1,3
UMS	Dec 18	29.1	30.8	Fixed	Standard Defence Contract	
NIOA	Jul 18	47.3	89.3	Fixed	Standard Defence Contract (Standing Offer)	4
EOS	Dec 19	50.2	49.1	Fixed	Standard Defence Contract	2,3
Notes						
1	Contract value as at Signature is based on contract commitment at PBS 2018-19 Budgeted exchange rates. The commitment value included Price escalation estimates.					
2	Contract value as at Signature is based on contract commitment at Mid-Year Economic and Fiscal Outlook 2019-20 Budgeted exchange rates. The commitment value included Price escalation estimates.					

3	The price at 30 June 2021 is \$164.5m lower than the price at signature due to exchange rate variation and lower than expected price escalation.			
4	Contract value as at signature reflects initial order quantity only.			
Contractor	Contracted Quantities as at		Scope	Notes
	Signature	30 June 2021		
RDA	211	211	211 Combat Reconnaissance Vehicles, 12 Mission Modules, Support & Test Equipment and Training Equipment	1
UMS	6 1	6 1	Reconfigurable Driver Simulators Part Task Trainer	
NIOA	Classified	Classified	Explosive Ordnance	
EOS	82	82	Remote Weapon Stations (RWS) for Block II vehicles	
Major equipment accepted and quantities to 30 June 2021				
As at 30 June 2021:				
<ul style="list-style-type: none"> 25 CRV have been accepted. A classified quantity and variety of explosive ordnance has been accepted. 				
Notes				
1	In 2019/20, the quantity reported (223) included 211 CRV and 12 Mission Modules - this has been updated for context.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirements	Block I – Multi Purpose Vehicle	N/A	N/A	Nov 18	-	1, 2
	Block I – Reconnaissance	Nov 18	N/A	Nov 18	-	1
	Block II – Joint Fires and Surveillance	Jul 19	N/A	Jul 19	-	1
	Block II – Command and Control	Jun 19	N/A	Jul 19	1	1
	Block II – Reconnaissance	Jan 19	N/A	Feb 19	1	1
	Block II – Repair	Aug 19	Oct 19	Sep 19	1	1
Preliminary Design	Block II – Recovery	Feb 19	N/A	Feb 19	-	1
	Block I – Multi Purpose Vehicle	N/A	N/A	Jan 19	-	1, 2
	Block I – Reconnaissance	May 19	N/A	May 19	-	1
	Block II – Joint Fires and Surveillance	Dec 20	Sep 21	Aug 22	20	1, 3
	Block II – Command and Control	Jul 20	Jul 21	Apr 22	21	1, 4
	Block II – Reconnaissance	Jul 19	N/A	Sep 19	2	1, 3, 5
Detailed Design	Block II – Repair	Dec 21	Jun 22	Oct 22	10	1
	Block II – Recovery	Feb 20	Jul 20	Apr 22	26	1, 6
	Block I – Multi Purpose Vehicle	Jan 19	N/A	Aug 19	7	1, 7
	Block I – Reconnaissance	Oct 19	N/A	Nov 19	1	1
	Block II – Joint Fires and Surveillance	Nov 21	Aug 22	Apr 23	17	1, 3
	Block II – Command and Control	Apr 21	Apr 22	Dec 22	20	1, 4
	Block II – Reconnaissance	May 20	Aug 21	Jan 22	20	1, 8
	Block II – Repair	Sep 22	Mar 23	Aug 23	11	1
	Block II – Recovery	Mar 21	Oct 21	Nov 22	20	1
Notes						
1	All dates represent the Approval to exit the Design Review for each Mission System variant drive and mission modules.					
2	This was not a contractual requirement.					
3	Delay was due to the introduction of the Electronic Architecture and, COVID-19 Contract Change Proposals, uncertainty with the load list and delays associated with Command and Control variant.					
4	Delay was due to a combination of introduction of the Electronic Architecture Contract Change Proposal, COVID-19, uncertainty with the load list, and delays associated with the Command and Control variant.					
5	Delay was due to a failure to satisfy all preliminary design review requirements which resulted in Defence invoking a Stop Payment in July 2019 this has now been lifted.					
6	Delay was due to a Commonwealth request for a risk reduction activity (in the form of a capability demonstration) to be incorporated into the Review.					
7	Delay was due to late achievement of PDR and underestimation of design changes following the fitment exercise.					
8	Delay was due to a combination of the Stop Payment (in July 2019 – refer note 5), the introduction of the Electronic Architecture and COVID-19 Contract Change Proposals (CCP) and the entry criteria for this activity not being met.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration and Acceptance	Block I – Multi Purpose Vehicle	Oct 20	N/A	Dec 20	-2	1, 2
	Block I – Reconnaissance	Oct 20	N/A	Jun 21	-8	1, 2
	Block II – Joint Fires and Surveillance	Oct 26	May 27	Dec 26	2	1, 3
	Block II – Command and Control	Jun 26	Feb 27	Dec 26	6	1, 3
	Block II – Reconnaissance	Oct 26	Jun 27	Nov 26	1	1, 3
	Block II – Repair	Jun 26	Feb 27	Oct 26	4	1, 3
	Block II – Recovery	Mar 26	Nov 26	Aug 26	5	1, 3
Notes						
1	Dates specified are based on Acceptance of the final delivery for each variant.					
2	Block I vehicles delivery were delayed due to a combination of production and manufacturing delays in Europe and the					

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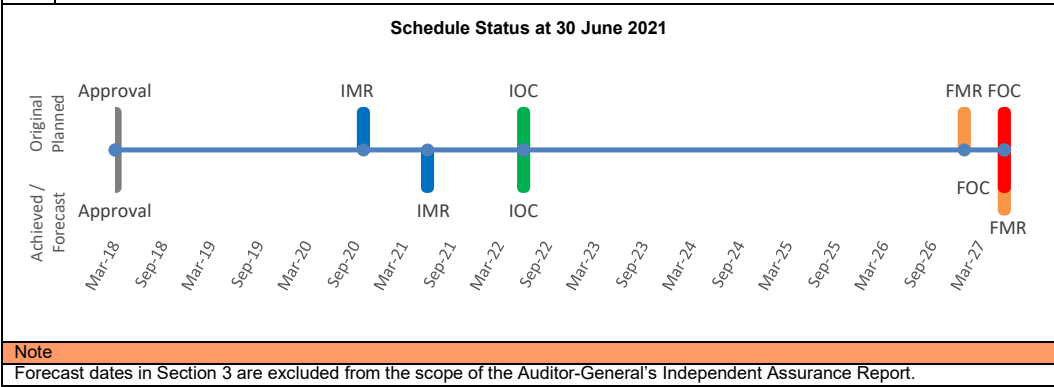
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	impact of COVID-19 travel restrictions in both Europe and Australia.
3	Block II vehicles are delayed due to a combination of production and manufacturing delays in Europe and the impact of COVID-19 travel restrictions in both Europe and Australia.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

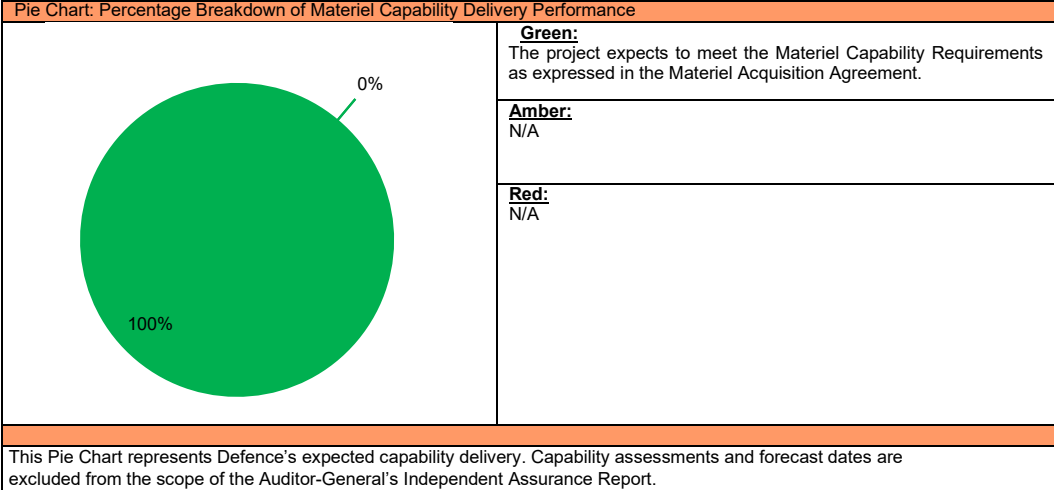
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Oct 20	Jun 21	8	1,3
Initial Operational Capability (IOC)	Jun 22	Jun 22	-	2
Final Materiel Release (FMR)	Jan 27	Jun 27	5	1
Final Operational Capability (FOC)	Jun 27	Jun 27	0	

Notes	
1	The variance is due to a combination of production and manufacturing delays in Europe and the impact of COVID-19 travel restrictions in both Europe and Australia.
2	IOC will occur when the first operationally deployable CRV element (likely to be the first Mounted Combat Squadron) including mission, support and training systems, and facilities, if required, has been delivered to the first Combat Brigade and support organisations and accepted into service.
3	IMR was met with the delivery of 21 vehicles to the 7 th Brigade in June 21. IMR was declared with three exceptions which are further explained in Section 5.2.
4	Refer to Section 4.2 for definitions of these milestones.



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<p>IMR will occur when:</p> <ul style="list-style-type: none"> 21 Combat Reconnaissance Vehicle mission systems have been delivered to 7th Brigade, Brisbane; and initial contractor provided logistics support arrangements are in place including: user documentation, technical data, maintenance support, logistics instruction, engineering support, spares, and training systems. 	<p>Achieved with caveats</p> <p>(Refer to Section 5.2)</p>
Initial Operational Capability (IOC)	<p>IOC will occur when:</p> <ul style="list-style-type: none"> The first operationally deployable CRV element, including mission, support, and training systems, and facilities, if required, have been delivered to one Combat Brigade and support organisations and accepted into operational service. Forecast: June 2022 	Not yet achieved
Final Materiel Release (FMR)	<p>FMR will occur with final delivery of the Combat Reconnaissance Vehicle capability. It includes:</p> <ul style="list-style-type: none"> delivery of all vehicles, spares & attrition and simulation training enablers for the Combat Reconnaissance Vehicles capability to all gaining units, and Logistics support arrangements, including: user documentation; technical data; maintenance support, logistics instruction, engineering support; spares; training systems; and facilities. Forecast: June 2027 	Not yet achieved
Final Operational Capability (FOC)	<p>FOC will occur when:</p> <ul style="list-style-type: none"> The full scope of LAND400 Phase 2, including mission, support and training systems, and facilities (if required), has been delivered to the three Combat Brigades and support organisations, and accepted into operational service. Support arrangements are finalised in accordance with the Integrated Logistics Support Plan. The three Armoured Cavalry Regiments are declared operationally ready by the Capability Manager (including training fleets, and Spares and Attrition stock vehicles). Forecast: June 2027 	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
<p>Failure of Boxer CRV to meet the contracted specifications</p> <p>There is a chance that the Boxer CRV may fail to meet the contracted minimum specifications leading to an impact on cost, schedule or capability.</p>	<p>The Commonwealth is working closely with the supplier as part of the initial testing of the vehicle. Any areas for improvement will be integrated into the Block II designs.</p>
<p>Failure to meet scheduled delivery and operational Milestones</p> <p>There is a chance that manufacture of Block II Boxer CRV is delayed, thereby impacting on FOC (June 2027).</p>	<p>The Commonwealth is working closely with the supplier to mitigate the impacts of COVID-19. The Commonwealth will monitor the supplier's planned activities to minimise any impact to schedule.</p>
<p>Failure to integrate LAND200 Systems onto the CRV</p> <p>There is a chance that the CRV capabilities will be affected by LAND200 being unable to provide technical support or equipment within the required LAND400 Phase 2 timeframes.</p>	<p>The Commonwealth is establishing a Project Collaborative Agreement between LAND400 Phase 2 and LAND200 to ensure engagement between projects is optimised.</p> <p>This risk has been escalated into an issue and is being managed accordingly. The residual risk is low and this risk is expected to be retired in 2022.</p>
Emergent Risk (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
Immersive Tactical Trainer – Containerised (ITT-C) Design	The Commonwealth will increase the frequency of technical

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<p>is not feasible</p> <p>There is a risk that when operated the ITT-C will create too much heat in the confined container, resulting in a system that does not meet safety requirements and is not fit for purpose.</p>	<p>reviews for development of ITT-C</p> <p>This risk is expected to be retired in FY21/22.</p>
<p>Cost of Project Contractor Support Exceeds Budget</p> <p>There is a risk that the budget for Contractor Support approved at Second Pass (\$46.805m) will not be sufficient to fund the required contracted workforce for the life of the Project.</p>	<p>The Commonwealth is managing its contractor budget intensively and does not anticipate applying for contingency during the FY20/21.</p> <p>The risk is expected to be retired in FY21/22.</p>
<p>RDA Variance at Completion Exceeds Budget Allocated Cost</p> <p>There is a risk that RDA's reporting of a current VAC of \$109m is an early indicator of cost, schedule and performance challenges.</p>	<p>The Commonwealth is monitoring and engaging closely with RDA.</p> <p>If the VAC status improves in FY21/22, this risk may be retired.</p>
<p>RDA COVID-19 Impacts</p> <p>There is an issue that RDA will be unable to deliver against its contracted schedule due to the impacts of COVID-19. There will be a six month delay to all contractual milestones with potential impacts to FOC.</p> <p>Realised and potential impacts include reduced production capacity, supply chain delivery delays, lower levels of collaboration, possible staff absences or limitations, and potential disruption to program delivery.</p>	<p>The Commonwealth and RDA have signed a CCP that agrees to a six month delay to reflect the impacts of COVID-19 up to 31 December 20.</p> <p>RDA is examining options to transition more production-related work to Australia earlier than planned, and increasing production capacity in Australia to mitigate this impact.</p> <p>The Commonwealth is working intensively with RDA to mitigate the impacts on IOC and FOC. This risk became an issue during the FY20/21 year and is therefore also reflected in 5.2 below.</p>
<p>LAND400 Phase 2 Training System External Interfaces</p> <p>The CRV Training System will be affected by undefined interfaces between Army's Training Management System (TMS), the Defence and Land Synthetic Environments and the Defence Learning Environment leading to impacts on Cost, Schedule, Performance, and Reputation.</p>	<p>The Commonwealth is engaging closely with Army to refine the network architecture and allocate contingency for a Battle Management System.</p> <p>The Commonwealth recruited a network architect in March 2021 to develop the architecture, and has raised the issue with the Capability Manager (Army) for direction and endorsement of the way forward.</p> <p>The risk has been downgraded from High to Medium and the status changed from 'Issue' to 'Risk' due to improved stakeholder engagement.</p>

5.2 Major Project Issues

Description	Remedial Action
<p>Delay in Production of Block I Boxer CRV</p> <p>Delays in manufacturing of Block I vehicles will impact on the achievement of IMR. Design and manufacturing delays will most likely impact Cost, Schedule, Performance and Delivery.</p>	<p>Strategies being implemented include: implementing quality assurance on the manufacturing line; confirming Government Furnished Equipment availability; the use of airfreight; more integration activities to be carried out in Australia; and a parallel testing and acceptance process.</p> <p>This issue is now retired as all Block I vehicles have now been produced and delivered to the Commonwealth, and IMR has now been achieved.</p>
<p>C4I System Software and Equipment Availability</p> <p>CRV capabilities will be affected by Army and/or communications-related projects, System Project Offices (SPO) and original equipment manufacturers (OEM) being unable to provide equipment, software or technical support within LAND400 Phase 2 timeframes leading to an impact on Cost, Schedule, Performance and Reputation.</p>	<p>Ongoing stakeholder engagement with Army, C4I projects, SPOs and OEMs to closely manage the availability of equipment and technical information and support in accordance with LAND400 Phase 2 timeframes.</p> <p>This issue has been expanded for clarity and renamed 'Command, Control, Communications, Computers and Intelligence (C4I) Software and Equipment compromises CRV capability'.</p>
<p>Impacts of COVID-19 on RDA</p> <p>There is an issue that RDA will be unable to deliver against its contracted schedule due to the impacts of COVID-19. There will be a six month delay to all contractual milestones with potential impacts to FOC.</p> <p>Realised and potential impacts include reduced production capacity, supply chain delivery delays, lower levels of collaboration, possible staff absences or limitations, and potential disruption to program delivery. It may also lead to potential delays in the delivery of Block</p>	<p>RDA submitted a draft Postponement CCP021 indicating 6 months of delay for COVID-19 impacts up to 31 Dec 20.</p> <p>RDA is examining options to transition more production-related work to Australia earlier than planned, and increasing production capacity in Australia to mitigate this impact.</p> <p>The Commonwealth is working intensively with RDA to mitigate the impacts on IOC and FOC.</p>

Description	Remedial Action
II vehicles and corresponding Milestones and potential delays to Block II Mandated System Reviews, delivery of vehicles and the corresponding Milestones.	
C2 and JFS variant - inability to Access External Power Source	The Project has worked closely with the supplier to incorporate an external power/ charging port into the design.
There is an issue that the batteries in the C2 and JFS variants of the CRV are unable to be charged whilst in a static mode, leading to an impact on the operation of vehicle systems.	This issue will be retired in 2021/22.
Initial Material Release was declared with three exceptions relating to: <ul style="list-style-type: none"> the completion of Functional Configuration Audit and Physical Configuration Audit, the integration of electronic counter measures, and; transportability studies including air transportability and integration with other Army vehicles. 	The Project is currently performing remediation activities against these three caveats, which are expected to be achieved by October 2021, February 2022, and March 2022 respectively.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
A formal After Action Review (AAR) was conducted by the Project in order to develop lessons learned for application in other Defence projects (and particularly LAND400 Phase 3. This AAR was completed by the Independent Advisor and a summary of the main lessons learned is presented below.	General
Enhancing project team capability – The project should be sufficiently resourced at each stage of the capability lifecycle. All members of the project team should be properly trained and prepared for their roles and have a good understanding of the project's scope, schedule and cost along with associated governance requirements.	Resourcing Governance
Whole of capability focus – The project should establish and maintain a 'whole of capability' focus in delivering the Boxer CRV, including management of all fundamental inputs to capability and commonality and alignment across the support and training systems to retain its effectiveness in rapidly changing threat and technology environments.	Requirements Management
Whole of life approach – When conducting market solicitation for the capability, the tender documentation should establish clear guidance on the level of maturity required initially as well as the level of innovation or developmental aspects the Commonwealth is prepared to accept. Requirements should be expressed in terms of mission or functional performance and should encourage tenderers to offer innovative solutions.	Requirements Management
Project management discipline – A Program Management Plan and Project Master Schedule are the means by which high-performing projects are conducted. As such, they must be maintained as the basis for directing the LAND400 Phase 2 program, managing priorities and resources, and monitoring and reporting performance to the relevant stakeholders. A Risk Management Plan should inform a disciplined approach to identifying, recording, analysing and mitigating risks, issues as well as opportunities that may affect delivery of the capability.	Program Management Governance
Capability Manager and stakeholder engagement are an essential part of the tender governance – arrangements should be established for regular participation of the 3-star Capability Manager and Deputy Secretary CASG in senior governance arrangements. It is recommended that each major acquisition program invite participation from Contestability Division, Joint Force Design, Industry Division and Defence Science and Technology at all levels of the Tender Evaluation Organisation.	Governance
Industry engagement – Early engagement of 'Industry' (as one of the fundamental inputs to capability) is required to maximise Australian industry participation in delivering the capability. The requirements, guidance and parameters for industry involvement should be included in the tender documentation and facilitated industry engagement should be a standard part of any major acquisition project.	Requirements Management
Tender requirements – When conducting a tender, the Request For Tender documentation should clearly identify which requirements are considered 'essential', 'important' and 'desirable' to the Commonwealth in order to guide the tenderers in developing proposed solutions. In addition, any Risk Mitigation Activity undertaken to differentiate between tendered solutions should look beyond the testing and evaluation requirements and consider other elements of the capability (including personnel training, repair and sustainment aspects).	Requirements Management
Probity – During tender evaluations, all staff involved in the project, including contracted workforce, must have a clear understanding of probity and all probity	Resourcing

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Description	Categories of Systemic Lessons
requirements in order to preserve the integrity of the tender process. Throughout the source selection and negotiation stages, any interaction between members of the project team and tenderers should be properly recorded to maintain transparency and ensure the Commonwealth is able to provide an appropriate response.	

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	MAJGEN David Coghlan
Branch Head	Ms. Sarah Myers

Project Data Summary Sheet¹⁴⁹

Project Number	AIR9000 Phase 2, 4 and 6
Project Name	MULTI-ROLE HELICOPTER
First Year Reported in the MPR	2008-09
Capability Type	Replacement
Capability Manager	Chief of Navy and Chief of Army
Government 1st Pass Approval	Apr 06 (Phases 4 and 6)
Government 2nd Pass Approval	Aug 04 (Phase 2), Apr 06 (Phases 4 and 6)
Budget at 2nd Pass Approval	\$3,522.8m
Total Approved Budget (Current)	\$3,770.0m
2020-21 Budget	\$97.3m
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 AIR9000. 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 AIR9000 MRH Program.

1.2 Current Status

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

Cost PerformanceIn-year

The project has spent **\$103.9m** against a budget of **\$97.3m** to the end of June 2021. The **\$6.6m variance** to the end of June 2021 was achieved by the Project through proactive engagement with the contractor to identify opportunities to bring forward spend from FY2021/22. The spend was able to be achieved due to net adjustments to payment phasings across the Prime Acquisition Contract offsetting reduced spend against contracts for other procurement requirements. Reduced spend on operating requirements contributed to the remaining variance.

Project Financial Assurance Statement

As at 30 June 2021, project AIR9000 Phase 2, 4 and 6 has reviewed the approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations of Defence, 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 committed contingency in the financial year primarily for the treatment of various supportability and performance risks such as a replacement Mission Management System (including **Aviation Mission System Hardware procurement and Contractor Support Services**), Mini Gun and **MRH90 Enhanced Cargo Hook System Spares and Support and Test Equipment, Fast Roping, Rappelling and Extracting System Delta Scope and the Ground Logistic Information Management System Service Ordering Agreement**. The commitment of Contingency is directly in support of the transition of the MRH90 into 6 Avn Regt.

Schedule Performance

As a result of the Deed 2 negotiations with the contractor, the final delivery of aircraft was rescheduled to July 2017; this, and ongoing technical deficiencies, have resulted in delays to the Final Materiel Release (FMR) and Final Operational Capability (FOC) milestones. However, a number of capability milestones have been declared, including Army Initial Operational Capability (IOC) in December 2014, Navy IOC in February 2015, first Operational Capability Land (OCL1) in September 2015, second and third Operational Capability Amphibious (OCA2/3) in December 2015, the second Operational Capability Land (OCL2) in March 2016 and the third Operational Capability Land (OCL3) in February 2018. **Due to ongoing capability delays** the FMR and FOC dates have been updated to **March 2022** and **June 2022** to support a revised Materiel Acquisition Agreement.

149 Notice to reader

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

Forty-seven aircraft have been accepted into service with the final aircraft accepted in July 2017. The first thirteen aircraft required an in-service retrofit to bring them up to the full Phase 2, 4 and 6 capability baseline with the final retrofit completed in March 2016.

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

Remediation to rectify concerns regarding configuration management issues of production aircraft slowed the acceptance of production aircraft in 2015, this in turn slowed the rate of capability growth.

The Chief of Army delayed the introduction of MRH90 into 6 Avn Regt by three years, because of reliability and design shortfalls and subsequently extended the Black Hawk fleet to 2022 to mitigate the risk to capability. The delayed introduction to 6 Avn Regt resulted in the growth in total MRH90 flying hours temporarily stabilised below the planned mature rate.

In September 2017, Chief of Army's Senior Advisory Committee (CASAC) endorsed and Chief of Army agreed to continue the transition of MRH90 into 6 Avn Regt which commenced in January 2019 and will conclude with the withdrawal of the Black Hawk helicopters and 6 Avn Regt taking on full Special Operations capability by the end of 2021.

The transition of MRH90 into 6 Avn Regt has commenced and has been supported by the project through the funding of facilities works, procurement of Support and Test Equipment and additional spares.

The Fast Roping, Rappelling and Extracting System has achieved Service Release and is entering service with the operating units.

The Taipan Gun Mount **was granted Incorporation Approval during the reporting period by the MRH Configuration Control Board and the first production batches are being delivered to and Accepted by the Project.**

The MRH Aircraft Maintenance Trainer that was expected to transition to the Army Aviation System Program Office (AASPO) for project completion is now scheduled for delivery in October 2021 due to shipping delays, prior to the declaration of FMR.

During the past year a number of capabilities have transitioned from the project office to the Sustainment Organisation including: **Pyrotechnic/ Helicopter Storage System (PHSS), C17 Transport**, Full Flight and Mission Simulator (FFMS), **Wet Deck and the Enhanced MRH90 Armament System (EMAS).**

Material Capability Delivery Performance

Following achievement of In-Service Date (ISD) with agreed partial achievement of the contracted MRH capabilities, there has been significant work by both Industry and the Commonwealth to define and implement a series of capability block enhancements to bring the MRH90 to contracted standards. This included a retrofit program to progressively bring all aircraft up to the contracted standard. FMR has been reviewed and is now forecast to be achieved in **March 2022** as the technical and supportability issues are resolved to meet the final operational capability. At this time it is expected that FMR will include the transfer of Project funding and contract management responsibilities concerning the completion of the remaining long lead time acquisition activities for Aero Medical Evacuation Equipment (AMEE) and C-17 Tactical Loading to the Army Aviation System Program Office (AASPO).

MRH achieved **60.8%** of its planned **2020/21** Financial Year Rate Of Effort (**ROE**). This represents hours actually flown, compared to planned flying hours. ROE is a Sustainment Contract Key System Health Indicator and this achievement indicates that some Key Performance Indicators are below the required performance bands.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

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 and 6. Phase 2 was approved initially, providing 12 additional Troop Lift helicopters for Army. Phases 4 and 6 were approved subsequently with Phase 4 which provided 28 helicopters as the replacement of the Australian Army's fleet of 34 S-70A-9 Black Hawk helicopters, again for troop lift capability, and Phase 6 provided six helicopters as the replacement of the RAN's fleet of six Sea King helicopters, providing maritime support capability for Navy. The delivery of a 47th MRH90 was negotiated as part of Deed 2. This enables the use of one aircraft as a Ground Training Device without impacting the operational fleet.

In total, the AIR9000 MRH Program will acquire 47 MRH90 aircraft and support systems. Support capabilities, such as Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, will be acquired along with training systems and in-service support.

The Phase 2 Acquisition Contract was signed with Airbus Australia Pacific (Airbus AP) in June 2005 with the subsequent Sustainment and Program Agreement contracts signed in July 2005.

In November 2005 the Defence Capability and Investment Committee agreed that the way forward was to seek a combined first and second pass approval for both Phases 4 and 6 as part of a single approval process.

Cabinet endorsement was gained in April 2006 in a combined first and second pass process for Phase 4 and Phase 6. The agreed method of procurement, a two stage Contract Change Proposal (CCP), resulted in the execution of options contained in the Program Agreement for the procurement of additional aircraft approved under Phases 4 and 6. Initial CCPs for the Acquisition, Sustainment and Program Agreement Contracts were signed in June 2006.

The three AIR9000 Phase 2, 4 and 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.

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The Commonwealth suspended acceptance of aircraft from Airbus AP in November 2010; deliveries recommenced in November 2011 after negotiations of a remediation plan (Deed of Agreement and CCPs) to address a number of engineering and reliability issues. Concurrent with the recommencement of aircraft acceptance in November 2011, the Minister for Defence announced that the project would be listed as a Project of Concern citing schedule, aircraft technical deficiencies and Airbus AP's performance.

The Commonwealth has conducted negotiations with the prime contractor to review and settle commercial, technical and schedule issues resulting in a variation to the original contract signed on 9 May 2013, which has been termed 'Deed 2'. Deed 2, which came into effect on 1 July 2013 re-baselined the delivery schedule and addressed commercial and technical issues.

Uniqueness

The MRH90 aircraft is based upon the German Army variant of the NH90 Troop Transport Helicopter. The MRH90 design uses well established aerospace technologies, but will introduce new technologies into Army and Navy, primarily in the areas of composite structure, helmet mounted sight and display and fly-by-wire flight control systems.

The MRH Program is providing an MRH90 capability to two main users - Army and Navy. The capability delivery complexity this introduces has been mitigated through an agreement between Chief of Army and Chief of Navy. This provides the project with a single interface for introduction into service issues.

The MRH Program Office Design Acceptance Strategy is dependent upon the French Military Airworthiness Authority's (Direction Générale de l'Armement (DGA)) prior acceptance of the NH90 variants and certification recommendation for the MRH90. The DGA and other National Qualification Organisations' prior acceptance of European NH90s provide confidence for the ADF to leverage off common certification evidence for the MRH90.

Major Risks and Issues

The current open issues being managed by the project are:

- The achievement of the FMR has been delayed by the late delivery of role equipment including the Taipan Gun Mount, AME-Mature, and the Mission Troop Seat leading to an impact on cost, schedule and performance.
- The initial AME solution is not suitable for high care or multiple extractions which will delay full AME capability until the AME-Mature capability is delivered.
- Spares will need to be procured to support the new role equipment and capabilities being developed for the MRH90.
- The MRH90 capability transition into 6 Avn Regt has been affected by delays in delivery of key capability and role equipment leading to a delay of MRH90 transition and extension of Black Hawk for 6 Avn Regt operations.

Other Current Related Projects/Phases

AIR9000 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.

AIR9000 Phase 8 Future Naval Aviation Combat System: The acquisition of 24 helicopters to enable the Navy to deploy at least eight Seahawks embarked at sea across the ANZAC Class frigates and the new Hobart Class Air Warfare Destroyers.

AIR90 Identification Friend or Foe (IFF): AIR90 will upgrade the MRH90 to the Mode 5 IFF waveform to maintain interoperability with US and NATO secure combat identification systems.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Apr 04	Original Approved	3.3	1
Aug 04	Government Second Pass Approval (Phase 2)	953.9	
Jun 06	Real Variation - Scope (Second Pass Phase 4 and 6)	2,565.6	2
	Total at Second Pass Approval	3,522.8	
Oct 06	Real Variation - Transfer	(219.0)	3
Oct 08, Nov 18, Jun20	Real Variation - Transfer	(20.3)	4
	Real Variation - Scope	31.5	5
Sep 17	Real Variation - Budgetary Adjustment	(87.4)	6
Nov 18	Real Variation - Transfer	(0.2)	10
		(295.2)	
Jul 10	Price Indexation	679.8	7
Jun 21	Exchange Variation	(137.4)	
	Total Budget	3,770.0	

Project Expenditure			
Prior to Jul 20	Contract expenditure - Airbus AP	(2,815.4)	8
	Contract expenditure - CAE Australia	(176.6)	
	Contract Expenditure – Leonardo Helicopters	(11.9)	
	Other Contract Payments / Internal Expenses	(353.5)	
		(3,357.4)	
FY to Jun 21	Contract expenditure - Airbus AP	(42.6)	9
	Contract Expenditure - NAHEMA	(11.8)	
	Contract Expenditure – Leonardo Helicopters	(1.5)	
	Other Contract Payments / Internal Expenses	(48.0)	
		(103.9)	
Jun 21	Total Expenditure	(3,461.3)	
Jun 21	Remaining Budget	308.7	
Notes			
1	This project's original budget amount is that prior to achieving Second Pass Government Approval.		
2	Incorporation of AIR9000 Phase 4 (Black Hawk Upgrade/Replacement) and AIR9000 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 (\$20.0m), temporary amenities at 6 Avn Regt (\$0.2m) and for facility remediation at 5 Avn Regt (\$0.05m).		
5	Real Cost Increase funding for Full Flight Mission Simulator.		
6	Real Variation for Budget Adjustment (\$87.4m). This was offset and corrected by CFO by a subsequent Exchange Adjustment in the BORIS Bi-Annual update.		
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$556.1m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$123.7m having been applied to the remaining life of the project.		
8	Other expenditure: \$353.5m for operating expenditure, contractors, consultants and other capital expenditure not attributable to the aforementioned contracts.		
9	Other expenditure: \$48.0m which includes \$40.1m for capability re-design expenditure, \$5.3m for contractors and consultants, \$1.9m for other capital expenditure not attributable to the aforementioned contracts, and \$0.7m for operating expenditure.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
122.5	98.5	97.3	PBS to PAES: The variation primarily reflects the reprogramming of Prime Contract milestones and capability funding for delays in deliverables associated with the stand up of 6 Aviation Regiment. PAES to Final Plan: The variance primarily reflects the reprogramming of capability funding.
Variance \$m	(24.0)	(1.2)	Total Variance (\$m): (25.2)
Variance %	(19.6)	(1.2)	Total Variance (%): (20.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		5.9	Australian Industry	The positive \$6.6m variance is primarily due to net adjustments to payment phasings across the Prime Acquisition Contract and reprogramming of spend against contracts for other procurement requirements in line with latest schedule information.
			Foreign Industry	
			Early Processes	
		1.2	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
		(0.5)	Effort in Support of Operations	
			Additional Government Approvals	
97.3	103.9	6.6	Total Variance	
		6.8	% Variance	

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2.3 Details of Project Major Contracts

Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Airbus AP	Jun 05	846.3	2,946.8	VARIABLE	Standard Defence Contract	1,2,3,4
CAE Australia	Dec 07	180.5	176.5	VARIABLE	Standard Defence Contract	4,5
NAHEMA	Oct 19	20.5	20.9	VARIABLE	Non-Standard Defence Contract (Multi Nation)	4,7
Leonardo Australia	Apr 18	16.3	16.7	VARIABLE	Deed	4,6
Notes						
1	This contract also includes an Electronic Warfare Self Protection Support System, MRH Software Support System, MRH Instrumented System and 23 Ground Mission Management System (GMMS) (4 Fixed GMMS, 7 Deployable GMMS, 1 Reduced, 9 Light and 2 interim GMMS). Contract Base date is January 2004.					
2	The MRH Instrumented System includes an airborne instrumentation pallet, some ground based instrumentation and three aircraft (from the total fleet of 47) that have provisions to have the instrumentation pallet installed.					
3	The increase from the original contract value is predominantly due to the increase in aircraft ordered and associated systems following government approved scope changes as described in Section 1.3. Since 1 July 2018, there have been key CCPs processed for an Aeromedical Evacuation Mature System (Phase 1), replacement Cargo Hooks, Heavy Stores Carriers (HSCs), Taipan Gun Mount, Fast Roping, Rappelling and Extracting System and External Auxiliary Fuel Tanks (EAFTs) Packaging.					
4	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
5	The Commonwealth conducted negotiations with the Contractor, to review and settle commercial and technical issues, in December 2015.					
6	The Commonwealth entered into contract with Leonardo Australia for the establishment of a helicopter transmission repair and overhaul facility.					
7	The Commonwealth entered into contract with the NATO Helicopter Design and Development, Production and Logistics Management Organization (NAHEMA) as a Contributing Participant in this multi nation contract for an Aircraft Maintenance Trainer (AMT).					
Contractor	Contracted Quantities as at		Scope	Notes		
	Signature	30 Jun 21				
Airbus AP	12	47	MRH90 Aircraft	1		
CAE Australia	2	2	Full Flight and Mission Simulator			
NAHEMA	1	1	AMT			
Leonardo Australia	N/A	N/A	Repair and overhaul capability for helicopter transmission, including a repair facility, initial spares, personnel costs, and transmission pallets			
Major equipment accepted and quantities to 30 Jun 21						
Forty-seven MRH aircraft have been accepted to date. Both Full Flight Mission Simulators have been accepted by the Commonwealth.						
Notes						
1	The delivery of a 47th MRH90 was negotiated as part of Deed 2. This enables the use of one aircraft 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 Contracted	Current Contracted	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
	MRH aircraft - Phase 2	Jan 06	Jan 06	Apr 06	3	

Preliminary Design	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 Contracted	Currently Contracted	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRH aircraft - Phase 2	Jul 06	Nov 06	Dec 06	5	
	MRH aircraft - Phase 4/6	N/A	N/A	N/A	N/A	1
	MRH Software Support Centre	N/A	Oct 08	Nov 08	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 07	N/A	
	Ground based Mission planning and Management System	N/A	N/A	N/A	N/A	2
	MRH Instrumented System	Nov 08	May 09	Dec 09	13	3
	Full Flight and Mission Simulators	Jun 11	Sept 11	Sep 11	4	4
Acceptance	Type Acceptance Review Special Flight Permit 1	Oct 07	N/A	Dec 07	2	5
	Australian Military Type Certificate	Dec 08	Dec 10	Apr 13	52	6
	Full Flight and Mission Simulator #1	Jul 12	Aug 13	Aug 13	13	7
	Full Flight and Mission Simulator #2	Jan 13	Oct 14	Oct 14	21	7
	Ground based Mission planning and Management System Lot 1	Feb 09	Sep 09	Dec 09	10	8
	Ground Mission planning and Management System Lot 2	Feb 09	Dec 09	Apr 10	14	8
	Ground Mission planning and Management System Lot 3	Sep10	Sep10	Mar 13	30	8
	MRH Software Support Centre	Feb 09	Feb 09	Dec 08	(2)	
	Electronic Warfare Self Protection Support System	Dec 07	Dec 07	Dec 07	0	
	MRH Instrumented System	Mar 10	Jun 10	Sep 11	18	9
Aircraft Acceptance	MRH aircraft #01 (First aircraft)	Dec 07	N/A	Dec 07	0	
	MRH aircraft #05 (First Australian built aircraft)	Dec 08	N/A	Dec 08	0	
	MRH aircraft #46	Jul 14	Jun 17	Jun 17	35	10
	MRH aircraft #47 (Final Aircraft)	Jul 17	Jul 17	Jul 17	0	

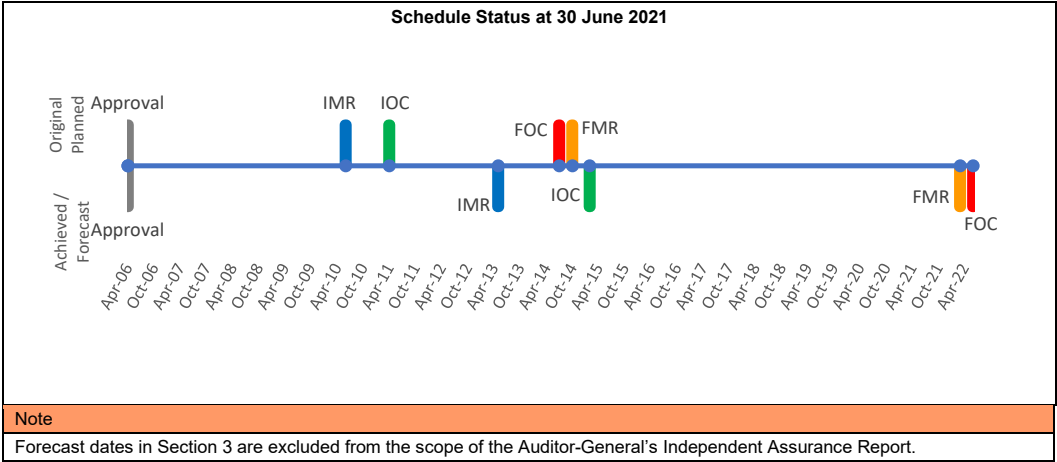
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Notes	
1	Phases 4/6 were rolled into the MRH Program from aircraft 13 onwards, which increased the number of aircraft from 12 to 46.
2	The acceptance and test-readiness of the Ground Mission Management System (GMMS) was broken into six lots post contract signature. The lots comprise of GMMS deliverables that have been aligned to aircraft delivery – location and baseline. The acceptance of GMMS lots are listed in the acceptance area of this table.
3	The 13 month delay to closure of Test Readiness Review was due to electronic compatibility test design issues not resolved until November 2009. This delay was mitigated by the development of an interim MRH Instrumentation System capability used for a test activity in October 2009.
4	Achieved through completion of Test Readiness Review for Contractor In-Plant Test and Evaluation in September 2011.
5	The first Airworthiness Board (for a Special Flight Permit (SFP)) was conducted in November 2007 and a SFP was granted in December 2007. There have been a number of SFP extensions to allow flight trials of the aircraft as it further develops. The most recent SFP was granted in December 2012 and expired in April 2013.
6	Achievement of the Australian Military Type Certificate proved problematic due to technical and reliability issues, leading to insufficient levels of the Rate of Effort. Rate of Effort was required to validate that in-service support arrangements for the fleet are sufficient to cope with current numbers of aircraft and are growing in maturity to meet fleet requirements. Australian Military Type Certificate and Service Release was achieved 17 April 2013.
7	Refers to acceptance of Full Flight Mission Simulators in Oakey and Townsville. Delays have been incurred due to the late delivery of facilities and an underestimation of the time required to implement the design.
8	Lot 1, 2 and 3 have been altered to accommodate the variation in aircraft delivery date and configuration.
9	The MRH instrumented system incurred delays due to technical and supportability issues that resulted in contractual non-conformances. These non-conformances were rectified by September 2011.
10	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and contractual issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on Airbus AP's agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with aircraft #46 accepted in June 2017 and the final aircraft (#47) accepted in July 2017.

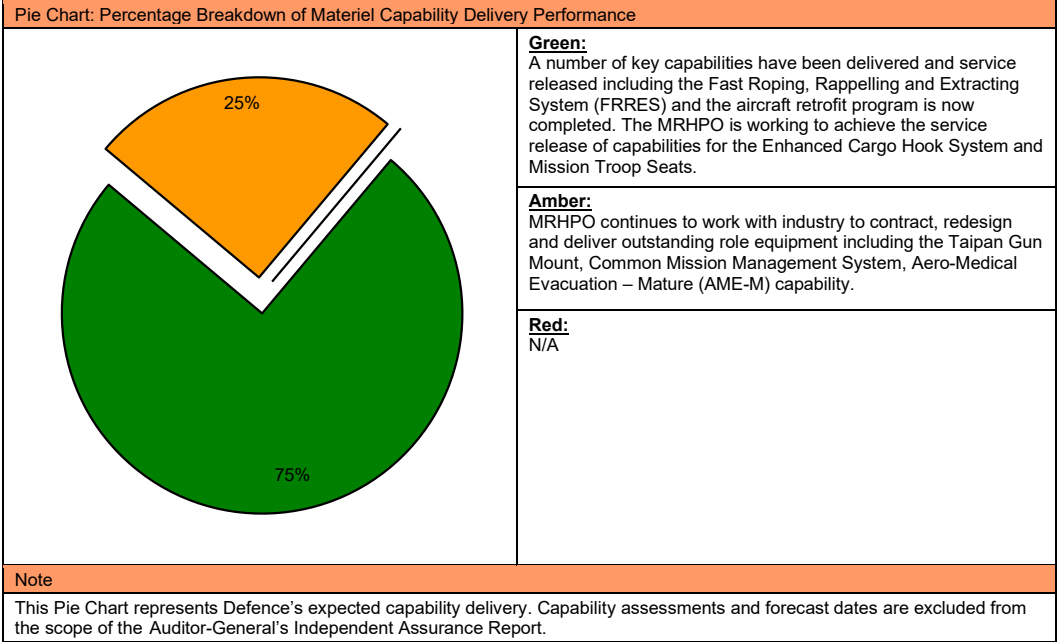
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Army/Navy	Jun 10	May 13	35	1
Initial Operational Capability (IOC)	Navy	Jul 10	Feb 15	55	2
	Army	Apr 11	Dec 14	44	3
Final Materiel Release (FMR)	Army/Navy	Oct 14	Mar 22	89	4
Final Operational Capability (FOC)	Navy	Dec 12	-	-	5
	Army	Jul 14	Jun 22	95	4,5
Notes					
1	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. This has impacted the achievement of capability milestones. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on Airbus AP's agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the final aircraft (#47) accepted in July 17. IMR was declared on 13 May 2013, based on 6 Product Baseline 003 aircraft.				
2	Affected by delays to IMR. (Refer to Note 1 above)				
3	Affected by delays to IMR. (Refer to Note 1 above)				
4	Dates directly impacted by delay to IMR. (Refer to Note 1 above). The remediation of technical deficiencies and issues through replacement or re-design will draw upon significant engineering, logistic and commercial resources and will therefore form the critical path toward achieving FMR. The FMR and FOC dates have been reviewed to reflect this. Ongoing delays to deliver capabilities has resulted in FMR being rescheduled to March 2022.				
5	FOC is now only forecast as a single date. The last capability subset is to be realised by Army as Operational Capability Special Operations 2 (OCS2) when declared by Capability Manager , which is expected to trigger FOC. Ongoing delays to deliver capabilities have resulted in FOC being rescheduled to June 2022.				



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<div>1. Six Product Baseline 003 aircraft with associated role equipment to support Initial Operational Capability milestones;</div> <div>2. Issue of Australian Military Type Certificate and Service Release;</div> <div>3. Completion of all MRH90 facilities at Townsville, Oakey and Nowra;</div> <div>4. Establishment of mature planned contractor support to maintenance and logistics; and</div> <div>5. Provision and certification of Mission Management systems necessary for Initial Operational Capability milestones.</div> <div>Initial Material Release was achieved in May 2013.</div>	Achieved

Initial Operational Capability (IOC)	<ol style="list-style-type: none"> 1. Achievement of Operational Capability Maritime Support 1 (OCM1) – a single flight embarked for limited daytime operations. 2. Achievement of Operational Capability Amphibious 1 (OCA1) Milestones – deployment of a single troop (three aircraft) in a permissive environment. 3. Initial Operational Capability was achieved in Army – December 2014 and Navy – February 2015. 	Achieved
Final Materiel Release (FMR)	<ol style="list-style-type: none"> 1. Forty-seven aircraft configured to the contractual baseline including configuration amendments specified in Deeds 1 and 2 (one aircraft to be used as a Maintenance Training Device); 2. Role equipment delivered to support aircraft. Role equipment completion criteria is to include the transfer of Project funding and contract management responsibilities concerning the completion of the remaining long lead time acquisition activities for Aeromedical Evacuation Equipment (AMEE) to the Army Aviation System Program Office (AASPO); 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. Training completion criteria to include the transfer of Project funding and contract management responsibilities concerning the completion of the remaining long lead time acquisition activities for an additional Aircraft Maintenance Trainer (AMT) to AASPO; and 5. All facilities and support equipment, required to support the capabilities accepted. <p>FMR is forecast to be achieved in March 2022.</p>	Not yet achieved
Final Operational Capability (FOC)	<p>FOC is expected to be declared on achievement of all Operational Capability Milestones providing the following capabilities.</p> <ol style="list-style-type: none"> 1. Operational Capability Maritime (OCM3) - Three embarked flights 2. Operational Capability Land (OCL3) - Two Airmobile Squadrons 3. Operational Capability Amphibious (OCA4) - One Squadron capable of supporting amphibious operations 4. Operational Capability Special Operations Support (OCS2) - One Special Operations Aviation Task Unit. <p>Final Operational Capability is forecasted to be achieved in June 2022.</p>	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
All Major project risks are closed or are being managed as issues.	1. N/A
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
Nil	1. N/A

5.2 Major Project Issues

Description	Remedial Action
The current Cargo Hook Design is incompatible with Australian Defence Equipment which will delay the final solution delivery.	<ol style="list-style-type: none"> 1. Enhanced Cargo Hook System Service Release was achieved Q3 2020 as forecast. 2. Enhanced Cargo Hook System delivered to Navy in Q4 2020. 3. This issue can be closed

The achievement of the FMR has been delayed by the late delivery of supplies according to the contracted schedule, leading to an impact on cost, schedule and performance	<ol style="list-style-type: none"> 1. Formation of Cabin Integration Working Group; 2. Industry Prototyping; 3. Accept incremental improvements; 4. Use of Liquidated Damages as offset 5. Leverage NATO Helicopters 90 (NH90) community solutions 6. MAA v2.5 (approved 9 July 2019) approved a re-baselined FMR 7. Ongoing delays require further review of the MAA. 8. The MAA is to be reviewed and updated at its next annual review.
The initial AME solution is not suitable for high care or multiple extractions which will delay the final solution delivery schedule.	<ol style="list-style-type: none"> 1. An Aero-Medical Evacuation capability working group was initially formed and has now evolved into an IPT. 2. The functional requirements specification has been agreed with Commonwealth stakeholders and Industry. 3. Phase 1 of the AME solution is in contract. 4. Industry has been contracted to conduct an Advanced Change Study Notice to inform and de-risk the solution for the remaining AME capability to be delivered. 5. After agreement of the results of the ACSN the agreed solution will be contracted.
Existing helicopter support facilities will require modification or upgrade to accommodate the MRH90.	<ol style="list-style-type: none"> 1. Facilities works for 6 Avn Regt are complete. 2. Estate and Infrastructure Group have completed the Concept Design Report for 5 Avn Regt Facilities Remediation with funding transferred from the project. 3. This issue is closed. 4. Contingency has been applied (committed) in support of this issue.
The current design of the self-protection weapons system is not meeting capability requirements.	<ol style="list-style-type: none"> 1. The Taipan Gun Mount will replace the current self-protection weapons system. 2. The Taipan Gun Mount (TGM), which is capable of mounting both the M134D Mini-Gun and Mag-58 General Purpose Machine Gun, design and manufacture was procured by the project to meet the specified MRH Capability Requirements. 3. Maintenance Training for Armourers on M134D was funded by the project and has been conducted. 4. TGM has achieved Incorporation Approval and all artefacts supporting Service Release have been submitted. 5. This issue will be closed when the TGM is granted Service Release. 6. Contingency has been applied (committed) in support of this issue.
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.	<ol style="list-style-type: none"> 1. Aviation Management System (formerly Common Mission Management System) has been released, implementing the mandated Joint Mission Planning System. 2. This issue is closed. 3. Contingency has been applied (committed) in support of this issue.
Spares will need to be procured to support the new role equipment and capabilities being developed for the MRH90	<ol style="list-style-type: none"> 1. As new Role Equipment is developed for MRH90 spares to support the new items are being procured. 2. Spares Assessments are planned to be conducted after in-service use of the role equipment to ensure that spares are procured on the basis of actual failure rates in use rather than forecast failure rates. 3. This issue will be closed when MRH90 role equipment has been granted Service Release. 4. Contingency has been applied (committed) in support of this issue.
The MRH90 capability transition into 6 Avn Regt has been affected by delays in delivery of key capability and role equipment leading to a delay of MRH90 transition and extension of Black Hawk for 6 Avn Regt operations.	<ol style="list-style-type: none"> 1. Form 6 Avn Regt Integrated Project Team. 2. Monitor delivery of key capabilities. 3. Mitigate delays including through Industry collaboration. 4. Implement solution for each deliverable. 5. Contingency has been applied (committed) in support of this issue.
The MRH Program may not be able to retain sufficient levels of experienced and skilled work force to achieve the required rate of Acquisition deliverables leading to an impact on schedule and capability.	<ol style="list-style-type: none"> 1. Funding is available for contracted staff as required. 2. This issue is closed. 3. Contingency has been applied (committed) in support of this issue.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Project Data Summary Sheets

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Section 6 – Lessons Learned

6.1 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 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Mr Shane Fairweather
Branch Head	BRIG James Allen

Project Data Summary Sheet¹⁵⁰

Project Number	SEA 1180 Phase 1
Project Name	OFFSHORE PATROL VESSEL
First Year Reported in the MPR	2018-19
Capability Type	Replacement
Capability Manager	Chief of Navy
Government 1st Pass Approval	Apr 16
Government 2nd Pass Approval	Nov 17
Budget at 2 nd Pass Approval	\$3,639.1m
Total Approved Budget (Current)	\$3,669.6m
2020-21 Budget	\$252.1m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

Project SEA1180 Phase 1 Offshore Patrol Vessel (OPV) will acquire 12 new vessels based on an existing design, to replace and improve upon the capability delivered by the 13 Armidale Class Patrol Boats (ACPB). The primary role of the SEA1180 Phase 1 OPV will be maritime patrol and response operations in support of the National Civil Surveillance Program (NCSP) in order to contribute to protecting Australia's territory, territorial seas, and Economic Exclusion Zone (EEZ) (Constabulary Tasks). In addition to the 12 OPVs the Project will acquire sea boats for the vessels, through a separate contract. These consist of two Rigid Hull Inflatable Boats and one Rapid Intercept Craft for each OPV.

1.2 Current Status

Cost Performance

In-year

The project achieved **\$204.6m** spend out of **\$252.1m** budget. The End Of Financial Year (EOFY) variance is a result of a partial **variation** of Luerssen **Integrated Baseline Review (IBR) and Support System Detailed Design Review (SSDR)**. In addition spend on Government Furnished Equipment (GFE), Armidale Class Patrol Boat Life Of Type Extension and Project office costs were lower than forecast.

Project Financial Assurance Statement

As at 30 June 2021, project SEA1180 Phase 1 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the Financial Year.

Schedule Performance

The Project achieved Second Pass Government approval on 24 November 2017 and contract signature with Luerssen Australia on schedule on 31 January 2018. An intensive design review program has been conducted and the project commenced construction of the first OPV in South Australia in November 2018 on schedule. A Whole of Ship Design Review was added to the program and conducted in late October 2019. The Support System Detailed Design Review **was delayed to September 2021 to allow a Logistic Support Analysis program to be established effectively in November 2020.**

The construction of the first OPV commenced on schedule in November 2018 in South Australia at which time the ships were announced as the Arafura Class. The contracted keel laying milestone for OPV 1 (Arafura) was achieved in February 2019 and the **keel laying** ceremony for Nuship *Arafura* occurred on 10 May 2019. Production of the second OPV commenced in June 2019, two months ahead of schedule. The keel laying for OPV 2 (Eyre) was achieved on 9 April 2020. OPV 3 (Pilbara) commenced construction in Western Australia ahead of schedule on 27 March 2020. **OPV 4 (Gippsland) also commenced construction on schedule on 4 January 2021, with the keel laying ceremony held on 30 July 2021.**

As a result of delays created by COVID-19, Nuship *Arafura* is expected to be delivered by Luerssen **six months later than planned in June 2022** after which Navy will commence its Naval Operational Test and Evaluation (NOTE). Initial Operational Capability (IOC) **is still planned for** December 2022. The Project is on track to achieve the Final Materiel Release (FMR) milestone.

Materiel Capability Delivery Performance

The project is on schedule to deliver 12 Offshore Patrol Vessels.

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

In June 2021 due to technical certification concerns by Navy, a revised threat assessment and a requirement for commonality, Luerssen Australia was directed to terminate the main gun contract with Leonardo Australia. An interim gun solution is being investigated for the Arafura OPVs using the existing Navy, 25mm Typhoon Mod 0 until a replacement gun is identified.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

The SEA1180 Phase 1 Offshore Patrol Vessel (OPV) Project will acquire 12 OPVs to replace the existing Armadale Class Patrol Boats (ACPB). The primary role of the Arafura OPV is constabulary operations and each ship will carry two crane-launched 8.5m Rigid Hull Inflatable Boats (RHIB) and one 10.5m Rapid Intercept Craft (RIC) launched via the stern of the vessel.

In August 2015, the Government announced that SEA1180 Phase 1 would become part of the continuous naval shipbuilding program and brought forward the construction of the OPV by two years to enable the start of the naval shipbuilding program by 2018.

In September 2015, the Government approved funding for the commencement of the Competitive Evaluation Process (CEP) for SEA1180 Phase 1. Interim Pass Project Approval was provided by Government in November 2015 and First Pass Approval was provided in April 2016.

The CEP consisted of an Analysis of Alternatives, a Risk Reduction Design Study (RRDS), a Request for Tender and an Offer Definition Improvement Activity. The Government also announced at First Pass that OPV designs from Damen (Netherlands), Fassmer (Germany) and Luerssen (Germany) had been shortlisted for the RRDS. Furthermore, the Government stated the first two OPVs would be built in Adelaide (Osborne Naval Shipyard) from 2018 and then transfer to Western Australia (Henderson Maritime Precinct) in 2020.

The Request for Tender was released in November 2016. Upgrade of the Osborne Naval Shipyard was announced by the Government in December 2016. The CEP culminated with the Government announcing Luerssen as the preferred tenderer on 24 November 2017. The Government also announced that ASC Shipbuilding would be utilised for the first two OPVs and that the capabilities of Austal and Cvmec would be used to build ten OPVs subject to the conclusion of commercial negotiations between Luerssen and Austal.

The contract for the construction of 12 OPVs was signed with Luerssen Australia on 31 January 2018. Luerssen nominated Cvmec to construct the remaining ten OPVs and contracted Cvmec initially to acquire and prepare the steel and pipe for all 12 OPVs from Australian sources (where available). Luerssen also established contracts with L3 Communications as a systems integrator and Saab Australia for a Situational Awareness System. The Commonwealth elected to purchase the RHIBs and RICs based on Luerssen's OPV design directly from Boomeranger.

To reduce the risk associated with commencing construction, the OPV Platform System was divided into two platform design streams (Stream A and B) and design streams for major subsystems, the Situational Awareness System and the Communication and Navigation System. Stream A consisted of the six keel blocks of the ship's hull which represented the high maturity of design enabling production to commence. Stream A was subject to a design and production readiness review process enabling construction to commence on schedule. Stream B are the remaining blocks which comprise the remainder of the OPV Platform. The internal components of these blocks were subject to some design change to accommodate those aspects of the OPV design that were modified to comply with Australian Government legislation or to meet Navy's requirements for commonality or interoperability with other Australian Defence Force units.

The OPV Situational Awareness System includes a version of the Saab 9LV Combat System. The sensors and weapons to be integrated include a 2D radar, 40mm Gun, an Electro Optical Surveillance System, Electro Optical Device and Electronic Support Measures.

The OPV Communication and Navigation System (CNS) includes an integrated electronic navigation system, internal and external communications systems such as Satellite Communication (SATCOM), Maritime Tactical Wide Area Network (MTWAN) and High Data Rate Line of Sight (HDRLoS) capability. The ship will also have an Integrated Platform Monitoring System. The Support System is based on new analysis built from a combination of new and existing support data. For that reason, it lags the development of the Platform System. Contract Change Proposal (CCP) 007 adjusted the Support System development and also introduced a Whole of Ship Design Review enabling completion of the design phase.

The project did not undergo a Smart Buyer Risk Assessment due to it already having had a similar risk review as part of an Independent Assurance Review.

Uniqueness

The Arafura OPV design is based on an existing design in service with the Royal Brunei Navy (Darussalam Class). Only minimal changes were necessary to meet Australian Legislative and Regulatory requirements and specific ADF communications and situational awareness needs, the inclusion of a bow thruster and an additional reverse osmosis plant.

Major Risks and Issues

The project is monitoring the impact of **delays** to the contracted delivery dates for OPV 1 (Arafura) and OPV 2 (Eyre) in part due to the impact of COVID-19 restrictions on the number of personnel working within the **ships**. **The project is also monitoring the increasing risk to resources in Western Australia created by competition with the Mining Industry. The risk to certification of the previous armament has been retired owing to Government approval for a different armament solution. As a result, an emerging risk has been raised to reflect ongoing monitoring of the new armament replacement solution.**

Other Current Related Projects/Phases

Related Projects include:

SEA5000 – Hunter Class future Frigate: Nine Hunter Class (FFGs) frigates will be based on BAE Systems' Type 26 Global Combat Ship design, modified to meet Australian requirements, and will be built in Osborne, South Australia as part of the Continuous Naval Shipbuilding (CNS) Program.

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N2263 – Infrastructure Project for Arafura Class. The project will provide berthing, training, maintenance, logistics, and support facilities at HMAS *Stirling*, HMAS *Coonawarra*, and HMAS *Cairns* to support the introduction into service of 12 new Offshore Patrol Vessels (OPV) being delivered by Luerksen.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Sep 15	Original Approval	10.0	1
Nov 15	Interim Pass Approval	1.5	2
Apr 16	Government First Pass Approval	45.9	3
Nov 17	Government Second Pass Approval	3,581.7	4
	Total at Second Pass	3,639.1	
Jun 21	Exchange Variation	30.5	
Jun 21	Total Budget	3,669.6	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - Luerksen Australia	(503.1)	5
	Contract Expenditure - Boomeranger Boats Oy	(4.0)	
	Other Contract Payments/Internal Expenses	(101.7)	6
		(608.9)	
FY to Jun 21	Contract Expenditure - Luerksen Australia	(161.7)	5
	Contract Expenditure - Boomeranger Boats Oy	(1.3)	
	Other Contract Payments/Internal Expenses	(41.6)	7
		(204.6)	
Jun 21	Total Expenditure	(813.4)	
Jun 21	Remaining Budget	2,856.2	
	Notes		
1	Funding in support of bringing the SEA =1180 Phase 1 project forward by two years and establishing a continuous onshore build.		
2	Funding for the conduct of the initial phase of the Competitive Evaluation Process (CEP).		
3	Continuation/Completion of CEP which included Project Support, a Risk Reduction Design Study and Schedule Protection Activities.		
4	This approval included \$103.7 million to support the transition from Armidale Class Patrol Boats to the new SEA1180 Arafura Class Offshore Patrol Vessels, including support for the life of type extension and lease extension of two Cape Class Patrol Boats (CCPB).		
5	Prime Contract with Luerksen Australia Pty Ltd. The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
6	Other expenditure prior to July 2020 comprises \$29.7m for the Risk Reduction Design Study and Schedule Protection Activity; \$30.6m for Project Office Support; \$7.4m Luerksen Australia Pty Ltd Licence & facilities costs; \$3.5m EM Solutions and \$30.54m for other contract payments/internal expenses.		
7	Other expenditure comprises \$6.0m Luerksen Australia Pty Ltd. Licence & facilities costs, \$8.5m Project Office Support, \$3.4m EM Solutions and \$23.7m other operating expenditure, contractors, consultants, and other capital expenditure not attributable to the listed contracts.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
285.1	254.5	252.1	PBS - PAES: The variance is a result of a partial variation of Luerksen Integrated Baseline Review (IBR) and Support System Detailed Design Review (SSDR) due to the COVID-19 pandemic. PAES – Estimate Final Plan: \$2.4m Variation is foreign exchange rate.
Variance \$m	(30.6)	(2.4)	Total Variance (\$m): (33.0)
Variance %	(10.7)	(0.9)	Total Variance (%): (11.6)

2.2B In-year Budget/Expenditure Variance

Estimate Jun Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(47.5)	Australian Industry	EOFY variance is primarily a result of a partial schedule delay of the Luerksen Integrated Baseline Review and Support System Detailed Design Review. Additionally, spend on GFE, OPV
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	

			Cost Saving	Transition and Project office costs were lower than forecast.
			Effort in Support of Operations	
			Additional Government Approvals	
252.1	204.6	(47.5)	Total Variance	
		(18.8)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Luerssen Australia	31 Jan 18	1,988.0	2,557.6	Fixed with forecast Escalation	Standard Defence Contract (Complex)	1,2
Boomeranger Boats Oy	9 Oct 19	42.2	53.3	Fixed with forecast Escalation	Modified Standard Defence Contract	1,2
Notes						
1	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable). Amounts expended convert using the spot rate of the day therefore due to calculation method 30 June 21 value will reflect a variance to prior reporting period.					
2	The price is the value in out-turned dollars (as at June 2021) using Commonwealth cumulative escalation indices. While price escalation models are built into the contract, the price at signature does not include an estimate across the forward commitment (expected expenditure). The price at 30 June 2021 includes this estimate, which is the reason for the large difference between the two figures.					
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 21				
Luerssen Australia	12	12	12 Offshore Patrol Vessels			
Boomeranger Boats Oy	41	41	27 Rigid Hull Inflatable Boats and 14 Rapid Intercept Craft			
Major equipment accepted and quantities to 30 Jun 21						
Nil						
Notes						
	N/A					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirements	Platform System – Stream A	Jun 18	N/A	Jun 18	0	
Preliminary Design		Aug 18	N/A	Aug 18	0	
Detailed Design		Oct 18	Nov 18	Nov 18	1	1
System Requirements	Platform System – Stream B	Jun 18	N/A	Jun 18	0	
Preliminary Design		Nov 18	Dec 18	Dec 18	1	1
Detailed Design		Feb 19	N/A	May 19	3	1
System Requirements	Command and Control System (C2)	Jun 18	N/A	Jun 18	0	
Preliminary Design		Dec 18	Nov 18	Nov 18	(1)	
Detailed Design		Mar 19	N/A	Mar 19	0	
System Requirements	Communication and Navigation System (CNS)	Jun 18	N/A	Jun 18	0	
Preliminary Design		Jan 19	N/A	Nov 18	(2)	1
Detailed Design		Apr 19	N/A	May 19	1	
Preliminary Design	Support System (SS)	Nov 18	N/A	Jun 19	7	1,2
Detailed Design		Jun 19	Mar 20	Sep 21	27	1,2,3
Detailed Design Review	Whole of Ship (WoS)	Oct 19	N/A	Oct 19	0	2
Notes						
1	Variance was agreed by the parties at Contract Change Proposal (CCP) 001 and incorporated under Contract Amendment 3.					

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2	CCP 007 proposed to delay the Support System Detailed Design by 12 months and reduce the Support System Detailed Design milestone review value commensurate with the other detailed design milestone values in order to create new milestones for a whole of ship Detailed Design, Integrated Baseline Review (IBR) with ASC, and an IBR with Luerssen. The whole of ship Detailed Design will be a complete assessment of the detailed design including antenna arrays. The IBR milestones are proposed to finalise Luerssen's establishment of the Earned Value Management System (EVMS).
3	The Support System Design Review was delayed to allow a Logistic Support Analysis program to be established effectively and occurred in November 2020. Outstanding actions were identified and due to exit in September 2021.

3.2 Contractor Test and Evaluation Progress

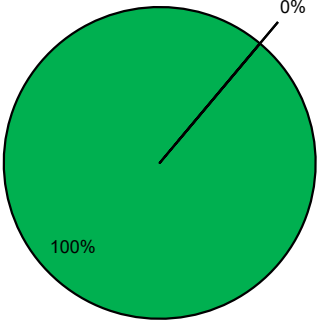
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
Acceptance	OPV 1 (Arafura)	Dec 21	N/A	Jun 22	6	1
Acceptance	OPV 2 (Eyre)	Sep 22	N/A	Mar 23	6	1
Acceptance	OPV 3 (Pilbara)	May 23	N/A	May 23	0	
Acceptance	OPV 4 (Gippsland)	Feb 24	N/A	Feb 24	0	
Acceptance	OPV 5 (Illawarra)	Nov 24	N/A	Nov 24	0	
Acceptance	OPV 6 (Carpentaria)	Jul 25	N/A	Jul 25	0	
Acceptance	OPV 7	Apr 26	N/A	Apr 26	0	
Acceptance	OPV 8	Jan 27	N/A	Jan 27	0	
Acceptance	OPV 9	Oct 27	N/A	Oct 27	0	
Acceptance	OPV 10	Jun 28	N/A	Jun 28	0	
Acceptance	OPV 11	Mar 29	N/A	Mar 29	0	
Acceptance	OPV 12	Dec 29	N/A	Dec 29	0	
Notes						
1	The COVID 19 pandemic has impacted multiple aspects relating to construction and in particular, activities at Osborne Shipyard in South Australia from March to October 2020.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 21	Jun 22	6	1
Initial Operational Capability (IOC)	Dec 22	Dec 22	0	
Final Materiel Release (FMR)	Dec 29	Dec 29	0	
Final Operational Capability (FOC)	Jun 30	Jun 30	0	
Notes				
1 The COVID-19 pandemic has impacted multiple aspects relating to construction and in particular, activities at Osborne Shipyard in South Australia from March to October 2020.				
2 Further clarification of milestones will be reflected in Section 4.2.				
Schedule Status at 30 June 2021				
<p>The Gantt chart displays the following milestones and their status:</p> <ul style="list-style-type: none">Approval: Original Planned (Nov-17 to May-18), Achieved / Forecast (Nov-17 to May-18).IMR (Initial Materiel Release): Original Planned (Nov-21 to May-22), Achieved / Forecast (Jun-22).IOC (Initial Operational Capability): Original Planned (Nov-22 to May-23), Achieved / Forecast (Dec-22).FMR/FOC (Final Materiel Release / Final Operational Capability): Original Planned (Nov-29 to May-30), Achieved / Forecast (Dec-29 / Jun-30).				
Notes				
Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.				

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 on track to deliver 12 Offshore Patrol Vessels. The majority of detailed design reviews have been completed providing confidence in the OPV design for production.
	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 Auditor-General's Independent Assurance Report.	

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	OPV1 delivered ready for Operational Test and Evaluation (OT&E). Those CASG Fundamental Inputs to Capability (FIC) elements including transition into sustainment as defined by the OPV Support System sufficient to support OT&E. IMR is expected to be achieved June 2022 .	Not yet achieved
Initial Operational Capability (IOC)	IOC is achieved when Navy can be assured that the first OPV can demonstrate it can be operated and maintained to conduct effective and sustained operations. IOC is expected to be achieved December 2022.	Not yet achieved
Final Materiel Release (FMR)	OPVs 1-12 delivered in accordance with Government Approved scope. OPV12 delivered ready for OT&E. Those CASG FIC elements including transition into sustainment as defined by the OPV Support System sufficient to support OT&E for each OPV. FMR is expected to be achieved December 2029.	Not yet achieved
Final Operational Capability (FOC)	OPVs 1-12 complete in accordance with Functional Performance Specification and Operating and Support Intent. OPV12 delivered and OT&E completed. All Facilities accepted. All support organisations functioning. FOC is expected to be achieved June 2030.	Not yet achieved

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 Arafura Class OPV production will be affected by demands on the available workforce leading to an impact on quality and schedule.	The cause of this risk is the limited resources shared across the Continuous Naval Shipbuilding program. It is also caused by competition with competing Industries. The Naval Shipbuilding College is identifying the increased demands and skillsets required. The current workforce numbers are supporting the OPV build, however the risk continues to be monitored and is tracking at a Medium rating.

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There is a chance that the OPV Program will be affected by OPV1 (Arafura) and OPV 2 (Eyre) not being delivered on contracted dates leading to an impact on IOC of the new capability, cost and reputation.	Progress against the build schedule is closely monitored by the Project Office and Luerssen, to ensure Luerssen achieve their updated milestone dates for launch and delivery of OPV 1 (Arafura) in order to allow Navy to meet the IOC date of end 2022. The COVID-19 Recovery CCP rebaselined the delivery dates of OPV 1 (Arafura) and OPV 2 (Eyre) by moving them 6 months right. As a result, the risk to delivery of OPV 2 (Eyre) has been sufficiently mitigated with the risk to OPV 1 (Arafura) tracking at a Medium rating. The risk description will be updated to only focus on OPV 1 (Arafura).
There is a chance that the OPV Project will be affected by delays in the provision of certification for Explosive Ordnance and Armament leading to an impact on schedule and performance.	This risk has closed as Government has approved a different gun to be fitted to the OPV, requiring a different certification pathway. This means the risk associated with certification of the previous armament has been retired. A new Medium rated risk pertaining to uncertainty in the performance of such a new armament solution has been raised to reflect the shift in focus towards the new armament solution.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action

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 Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Nil	

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	Mr Peter Croser

Project Data Summary Sheet¹⁵¹

Project Number	LAND121 Phase 3B
Project Name	OVERLANDER VEHICLES (MEDIUM AND HEAVY VEHICLES, MODULES AND TRAILERS)
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Capability Manager	Chief of Army
Government 1st Pass Approval	Jun 04 – Phase 3 Dec 11 – Phase 3B
Government 2nd Pass Approval	Aug 07 – Phase 3 Jul 13 – Phase 3B
Budget at 2 nd Pass Approval	\$3,284.7m
Total Approved Budget (Current)	\$3,397.8m
2020-21 Budget	\$216.4m
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND121 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 LAND121 Phase 3 into two projects:

- LAND121 Phase 3A – Lightweight and Light Capability (LLC), incorporating the approved Phase 5A; and
- LAND121 Phase 3B – Medium and Heavy Capability (MHC).

LAND121 Phase 3B will upgrade and replace the existing medium and heavy vehicle and trailer fleet. Vehicles (protected and unprotected) consisting of nine variants, will be introduced by the project including cargo, tractor, recovery and tanker functions. Ten trailer variants for general cargo, equipment transport, and tanker capability will also be acquired. Fleet flexibility will be supplemented by flatracks and modules that will permit the rapid deployment of stores (including maintenance and combat engineering), fuel and water tankers and specialist bridging capabilities.

The following vehicles, trailers and modules will be acquired:

- 2,536 MHC vehicles and 3,054 modules supplied by Rheinmetall MAN Military Vehicles Australia (RMMVA);
- 1,582 trailers from Haulmark Trailers (Australia);
- 122 Geländewagen (G-Wagon) fitted with maintenance modules supplied by Mercedes-Benz Australia / Pacific Pty Ltd and associated trailers supplied by Haulmark Trailers (Australia) Pty Ltd (HTA), acquired by LAND121 Phase 3A;
- 49 in-service Bushmaster Protected Mobility Vehicles upgraded to customised General Maintenance Vehicle variants and associated trailers;
- 18 Line Laying Modules acquired by LAND121 Phase 3A; and
- A further 664 specialist modules are to be acquired.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2021, financial year 2020-21 expenditure was **\$216.1m** against a budget of **\$216.4m**. The EOFY variation is primarily due to **minor spares milestones now planned for July 2021**.

Project Financial Assurance Statement

As at 30 June 2021, project LAND121 Phase 3B has reviewed the approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations of Defence, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

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

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

Part 3. Project Data Summary Sheets	Overlander Medium/Heavy	<p>Schedule Performance</p> <p>Phase 3B has progressed through the design phases for all contracted vehicles, modules and trailers, with the exception of the specialist modules.</p> <p>While Stop Payments have previously been invoked on RMMVA, the RMMV Executive Board continues to monitor contract performance and progress in the achievement of targets.</p> <p>Haulmark Trailers (Australia) Pty Ltd continue to provide trailer deliverables as required under the contract.</p> <p>The Project achieved the Initial Materiel Release (IMR) milestone in November 2018, ahead of the scheduled date of December 2018 and achieved Initial Operational Capability (IOC) with a caveat on vehicle air certification, by the originally planned date of December 2019. RMMVA have been requested to conduct additional work in response to a request from AMTDU, for information to achieve load clearance on Medium Heavy Capability (MHC). This issue is still active and is being closely managed by Capability Acquisition and Sustainment Group (CASG) and the Capability Manager. Schedule management remains a key focus, however Final Materiel Release and Final Operational Capability remain on track as scheduled for December 2022 and December 2023, respectively.</p>
		<p>Materiel Capability Delivery Performance</p> <p>Affordability will impact the overall capability, with costs being managed by maximising off-the-shelf solutions.</p> <p>As described in the Schedule Performance above, the Project achieved IOC with a caveat on air certification. Schedule management remains a key focus and is being closely managed by CASG and the Capability Manager.</p> <p>As at 30 June 2021 RMMVA has delivered 2,536 of 2,536 vehicles and 2,999 of 3,054 modules.</p> <p>HTA has delivered 1,565 of 1,582 matched trailers.</p>
		<p>Note</p> <p>Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>
		<p>1.3 Project Context</p>
		<p>Background</p> <p>Project LAND121 is a multi-phased project to provide the ADF with the FVM&T and associated support systems to meet ADF mobility requirements including logistic distribution, command and liaison, casualty evacuation, troop lift, and the provision of mobility for specialist assets such as command shelters and communications terminals.</p> <p>At the time Government approved LAND121 Phase 3 the ADF's FVM&T fleet consisted of some 7,300 vehicles and 3,700 trailers acquired progressively from 1959. By 2008, 98 percent of the current assets had exceeded their life of type. The fleet was increasingly costly to maintain, repair and operate. Furthermore, the increased operational tempo from 1999 has compounded the challenges faced by the fleet to provide the mobility needs required by the ADF.</p> <p>LAND121 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 LAND121 Phase 5A via the contracts negotiated for Phase 3.</p> <p>Phase 3 was also intended to acquire medium and heavy FVM&T; however, the Commonwealth withdrew from negotiations with the preferred tenderer, and a tender resubmission process was initiated in December 2008. In December 2011, Defence announced negotiations would commence with the preferred tenderers, RMMVA for the MHC vehicle and module requirements and with HTA for the MHC trailer requirements.</p> <p>Strictly, Military Off The Shelf (MOTS) items were not considered appropriate as modifications are required to achieve:</p> <ul style="list-style-type: none"> • Compliance with Australian Design Regulations; • A requirement for vehicles to interface with in-service and new Australian designed trailers and modules; and • Integrate with in-service communication equipment. <p>In a related decision at the same time, Government approved the splitting of LAND121 Phase 3 into two projects: LAND121 Phase 3A for the LLC approved under Phase 3 and amalgamating this with the additional scope approved under Phase 5A; and LAND121 Phase 3B to progress the Phase 3 MHC scope elements. This decision effectively closed Phase 3 and amounted to a combined pass approval for the new Phase 3A and an 'interim pass' approval for the new Phase 3B. The December 2011 approval allowed the continuation of contracted activities toward the LLC acquisition and the ongoing negotiations for the MHC contracts for Phase 3B. Phase 3B was required to seek a supplementary second pass approval following contract negotiations.</p> <p>The Phase 3A LLC Contract Amendments were executed in January 2012 and Phase 3B achieved second pass approval in July 2013 and contracts were executed shortly after.</p>
		<p>Uniqueness</p> <p>LAND121 Phase 3B is to deliver the FVM&T capability to multiple locations throughout Australia and on operational service overseas. This presents a unique logistic challenge in having a robust Support System that will achieve stated availability requirements for the lowest life cycle cost.</p>
		<p>Major Risks and Issues</p> <p>The project is currently managing the following major risks:</p> <ul style="list-style-type: none"> • Module Gun Ammunition - Delivery Delay; • Module Gun Ammunition – Access to FMS Data; • Radiation Hazards from Loading Modules onto Gun Tractor. <p>The project is also managing the following project issues:</p> <ul style="list-style-type: none"> • Finalisation of User Requirements for uncontracted specialist modules; • Air Movements Training and Development Unit (AMTDU) certification.
		<p>Other Current Related Projects/Phases</p> <p>LAND121 is a multi-phased project providing the ADF with current-generation high-capability field vehicles, modules and trailers. Other LAND121 projects are:</p> <p>LAND121 Phase 4 will acquire and deliver into service 1,100 Protected Mobility Vehicles – Light (PMV-L) and 1,058 associated trailers. The PMV-L will perform command, reconnaissance, liaison and utility roles.</p>

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LAND121 Phase 5B, approved in June 2018, will acquire and deliver into service an additional (to Phase 3B) 1,044 vehicles with 872 modules and 812 trailers.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

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)	
	Budget as at 30 June 2012	3,171.2	
Jul 12	Real Variation - Scope (Funds retained by 3A)	(622.0)	2
	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
	Real Variation - Scope	21.0	5
	Real Variation - Project Supplementation	684.2	6
	Total at Revised Second Pass Approval	3,284.7	
Nov 18	Real Variation - Budgetary Adjustment	(30.0)	7
Jun 21	Exchange Variation	143.1	
	Total Budget	3,397.8	
Project Expenditure			
Prior to Jul 20	Contract Expenditure - Rheinmetall MAN Military Vehicles Australia (Acquisition)	(1,920.8)	
	Contract Expenditure - Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(393.0)	
	Rheinmetall MAN Military Vehicles Australia (Support)	(15.4)	
	Other Contract Payments / Internal Expenses	(203.5)	8
		(2,532.7)	
FY to Jun 21	Contract Expenditure - Rheinmetall MAN Military Vehicles Australia (Acquisition)	(125.5)	
	Contract Expenditure - Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(53.3)	
	Rheinmetall MAN Military Vehicles Australia (Support)	0	
	Other Contract Payments / Internal Expenses	(37.2)	9
		(216.1)	
Jun 21	Total Expenditure	(2,748.8)	
Jul 21	Remaining Budget	649.0	
Notes			
1	Phase 3 project budget prior to the split into Phase 3A and Phase 3B.		
2	Retention of Light Capability scope by LAND121 Phase 3A.		
3	Update of exchange rates from approval to 2012–13 PBS rates.		
4	Transfer of funds from LAND116 Phase 3 for acquisition of trailers.		
5	Transfer of funds from JP2059 Phase 2 Bulk Liquid Distribution for acquisition of some vehicles and associated equipment to facilitate fuel and water transportation.		
6	Provision for general program supplementation associated with easing cost pressures identified during scoping for project approval, as per revised second pass approval.		
7	Budget Adjustment of \$30.0m was approved by Government in Nov 18 The \$30.0m adjustment from LAND121 Phase 3B will be returned to the budget of LAND121 Phase 5B in 2023-2024. LAND121 Phase 5B relates to the acquisition and delivery into service of an additional 1,044 vehicles, 872 modules and 812 trailers. LAND121 Phase 3B and LAND121 Phase 5B are managed by the same project team at Defence.		
8	Other Expenses comprise of (\$63.9m) for the acquisition of G-Wagons by LAND121 Phase 3A on behalf of LAND121 Phase 3B, (\$49.9m) for salaries, (\$21.2m) for the Protected Mobility Vehicle, and (\$54.8m) for other project office costs not associated with the prime contracts. **An adjustment of \$13.7m was required due to the transition back to Accrual Accounting from a Cash Methodology in FY 2019-20.		

9	Other Expenses comprise of (\$0.2m) for the acquisition of G-Wagons by LAND121 Phase 3A on behalf of LAND121 Phase 3B, (\$11.7m) for salaries, (\$1.1m) for the Protected Mobility Vehicle, (\$2.1m) ILS costs, (\$4.2m) Project Office – Domestic Freight charges and (\$18.0m) for Other Project Office costs not associated with the prime contracts.
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2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
226.1	218.5	216.4	PBS to PAES: The variation is due primarily to savings achieved by the project that have been re-programmed to future activities. PAES to Final Plan: Variance is due to updates to exchange rates.
Variance \$m	(7.6)	(2.1)	Total Variance (\$m): (9.7)
Variance %	(3.3)	(0.9)	Total Variance (%): (4.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(0.3)	Australian Industry	The EOFY variation is primarily due to minor spares milestones now planned for Jul 21.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiation/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
216.4	216.1	(0.3)	Total Variance	
		(0.1)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Rheinmetall MAN Military Vehicles Australia (Acquisition)	Jul 13	1,585.9	2,108.5	Variable	Standard Defence Contract	1, 2, 3
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	Jul 13	397.7	506.5	Variable	Standard Defence Contract	1, 2
Rheinmetall MAN Military Vehicles Australia (Support)	Jul 13	32.3	46.7	Variable	Standard Defence Contract	1, 2, 4

Notes

- Additional vehicles and trailers, worth \$28.3m and \$4.7m respectively, were funded and procured by LAND121 Phase 3A, on behalf of the LAND121 Phase 3B project.
- Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates of EURO **0.6320** based on XR RBA on 30 June 2021, and includes adjustments for indexation (where applicable).
- Price at 30 June 2021 varies from Price at Signature due to contracted price escalation, and contract changes related to in-scope capability and support.
- As of 01 July 2020, the Support Contract which has previously been managed by LAND121 Phase 3B has transitioned to Commercial and General Service Vehicle Systems Program Office (CGSVSPO) under CA16 Fleet.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 21		
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.	2

Major equipment accepted and quantities to 30 Jun 21

As at 30 June 2021 Rheinmetall MAN Military Vehicles Australia has delivered 2,536 of 2,536 of the following vehicles:

- Mediumweight Tray: all deliveries completed;
- Mediumweight Tray with Crane: all deliveries completed;
- Mediumweight Tipper (dump): all deliveries completed;
- Heavy Integrated Load Handling: all deliveries completed;
- Heavy Tipper: all deliveries completed;
- Heavy Tractor: all deliveries completed;
- Medium Recovery : all deliveries completed;
- Heavy Recovery: all deliveries completed; and
- Heavy Tanker: all deliveries completed.

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and 2,999 of 3,054 of the following modules:

- Flatracks: all deliveries completed;
- Bridge Boat Interface: all deliveries completed;
- Mediumweight Combat Engineer Section Stores: **all deliveries completed**;
- Mediumweight Maintenance: **all deliveries completed**;
- Mediumweight Stores: **all deliveries completed**;
- Heavy Stores: **all deliveries completed**;
- Heavy Bulk Fuel Pump and Storage: **all deliveries completed**;
- Heavy Bulk Fuel Storage: **all deliveries completed**;
- Heavy Bulk Water Pump and Storage: **all deliveries completed**; and
- Heavy Bulk Water Storage: **all deliveries completed**;
- Command Post Module: delivery not yet commenced

As at 30 June 2021 Haulmark Trailers (Australia) has delivered **1,565** of 1,582 of the following matched trailers:

- Medium weight Cargo trailers: all deliveries completed;
- Heavy ILH trailers: **all deliveries completed**;
- Heavy Equipment Trailers: all deliveries completed;
- Medium Equipment Transporters: **89%** Complete;
- Heavy Bulk Fuel Tankers: all deliveries completed;
- Heavy Equipment Transporters: **82%** Complete;
- Dolly Low Loaders: all deliveries completed;
- Heavy Cargo trailers: all deliveries completed;
- Heavy Bulk Water Tankers: all deliveries completed; and
- Dolly Road Trains: **81%** Complete.

Notes

- | | |
|---|---|
| 1 | The quantity figures being communicated publicly excludes vehicle and trailer prototypes. |
| 2 | As of 1 July 2020, the Support Contract which has previously been managed by LAND121 Phase 3B has transitioned to Commercial and General Service Vehicle Systems Program Office (CGSVSPO) under CA16 Fleet. |

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
Preliminary Design	Vehicles	Dec 14	Aug 15	Dec 15	12	1, 2
	Modules	Aug 14	Feb 15	Mar 15	7	1, 2
	Trailers	Jun 16	Jan 17	Jan 17	7	1, 3
Detailed Design	Vehicles	May 15	Sep 16	Jun 17	25	1, 2
	Modules	Nov 14	Jun 15	Mar 16	16	1, 2
	Trailers	Jan 17	Jul 17	Jun 17	5	1, 3
Critical Design	Vehicles	Aug 15	Jan 17	Dec 17	28	1, 2
	Modules	Mar 15	Nov 15	Sep 16	18	1, 2

Notes

- | | |
|---|---|
| 1 | All dates represent the Approval of the exit for the Reviews of the last vehicle, module and trailer variants. All vehicles, contracted modules and trailers have now completed preliminary, detailed and critical design review processes. |
| 2 | Vehicle and Module Variance is due to two replans. The first was due to major delays in finalisation of contracts between the prime contractor and its subcontractors. The second was an adjustment to the schedule by the contractor in order to reduce production risks by concentrating on the most mature vehicle variants and slower ramping up of Protected Vehicles. |
| 3 | Trailer Variance is due to a change in scope by the CoA to Group C Trailers. |

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Integration, Acceptance Test and Evaluation (AT&E)	Vehicles	Jul 16	Aug 18	Dec 21	65	1,2,3,4,7
	Modules	Nov 15	Jun 17	Jun 21	67	1,2,3,4,5,7
	Trailers	Sep 17	May 18	Jun 18	9	1,6

Notes

- | | |
|---|--|
| 1 | All dates represent the Approval of the Acceptance Verification Reports (AVRs) for the tests of the last vehicle, module and trailer variant. |
| 2 | Delays by RMMVA to secure its subcontractor has impacted the completion of verification. |
| 3 | Senior management attention (Defence and the RMMV Board) is expected to improve the schedule performance for completion of acceptance test and evaluation. |
| 4 | Current Planned Date changes to Vehicles and Modules are IAW CCP064 signed 15 July 2016. |
| 5 | A Contract Change Proposal IAW CCP 117 signed 13 July 2017 was executed to address an additional nine month variance associated with RMMVA sub-contractor, Holmwood Highgate delay in progressing the Liquid Module Program. |
| 6 | Current Planned Date changes are IAW Group C Integrated Baseline Review (June 2016) outcomes and agreements. |
| 7 | Revised Achieved/Forecast date for Vehicles relates to outcomes arising from remaining testing activities and associated AVRs for the Medium Recovery Vehicle. Final Acceptance Verification & Validation for this vehicle is scheduled to be finalised by December 2021 . Revised Achieved/Forecast date for the Bulk Liquid Modules relates to the resubmission of a number of AVRs. These were approved in June 2021 . |

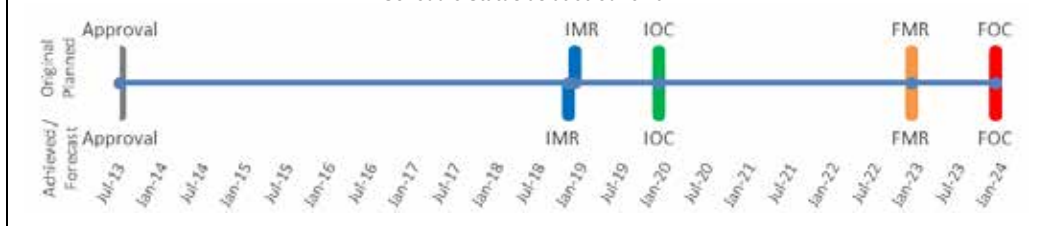
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Note
Initial Materiel Release (IMR)	Dec 18	Nov 18	(1)	1
Initial Operational Capability (IOC)	Dec 19	Dec 19	0	2
Final Materiel Release (FMR)	Dec 22	Dec 22	0	
Final Operational Capability (FOC)	Dec 23	Dec 23	0	

Notes

1	Initial Materiel Release was achieved one month earlier than forecast due to all elements of Initial Materiel Release being satisfied and agreed with the Capability Manager in November 2018.
2	Operational Capability (IOC) was declared with air certification caveat on 12 December 2019.

Schedule Status as at 30 June 2021



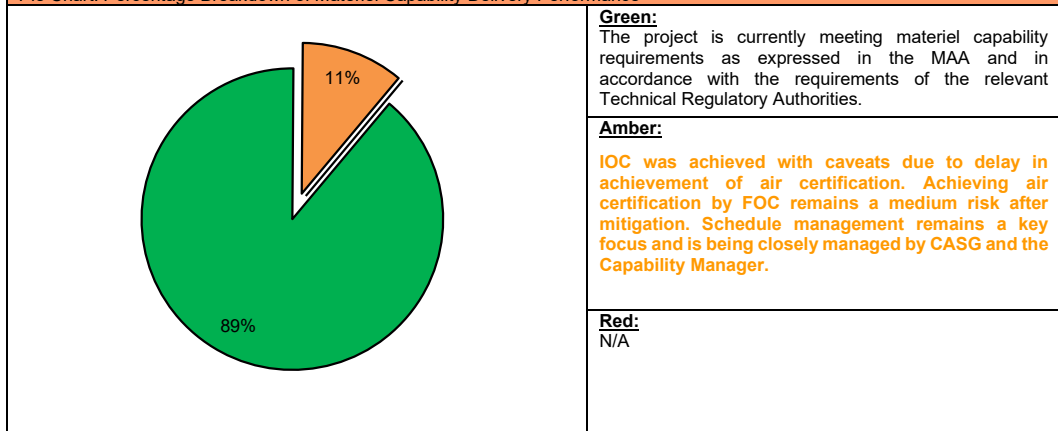
Note

Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR requires the following to be delivered: 659 medium and heavy vehicles, 436 modules, 57 trailers, sufficient training for operators and maintainers to support Army's introduction into service plan and adequate logistic support arrangements. Achieved November 2018.	Achieved
Initial Operational Capability (IOC)	IOC requires the following to be delivered: Based on a Battle Group, which is approximately 100 vehicles, deployed on a Major Defence Training activity (Exercise TALISMAN SABRE or equivalent). IOC was declared by Chief of Army in December 2019 with an air certification caveat.	Achieved with an air certification caveat
Final Materiel Release (FMR)	FMR requires the following to be delivered: 2,707 medium and heavy vehicles, 3,858 modules, and 1,753 trailers, achieve the Directed Training Requirement across the entire medium and heavy capability for operators and maintainers and logistic support arrangements.	Not yet achieved

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	Forecast achievement December 2022.	
Final Operational Capability (FOC)	FOC requires the following to be delivered: Complete delivery of 2,707 vehicles, 1,753 trailers and 3,858 modules, acceptance and Introduction Into Service to meet Chief of Army Preparedness Directive requirement to deploy and support a Multi Role Combat Brigade and concurrent Battle Group on operations. Forecast achievement December 2023	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Changes to system specifications There is a chance that the project will be affected by changes to system specifications leading to Contract Change Proposals which will impact on cost and schedule.	Development of a decision log. Changes will only be considered on formal advice from Army Headquarters (AHQ) and will include costs and risks. The project team has worked with relevant stakeholders to assess proposed changes resulting from design reviews. While a number of Contract Change Proposals have been generated to reflect agreed outcomes of the design reviews, there has been no impact on schedule, and costs are being managed within the approved budget. This risk continues to diminish as the design review process is completed. However, some engineering changes are being considered as a result of verification and validation activities. This risk will remain active until the completion of verification and validation activities across multiple LAND121 Phase 3B platforms, apart from transportation requirements. This risk has been downgraded and will be removed at the next MPR.
Vertical Launch and Vertical Recovery Vertical Launch & Vertical Recovery (VR&VL) of the Bridge Erection & Propulsion Boat (BEPB) and Improved Ribbon Bridge (IRB) modules into water and on dry land encompasses complex activities that may present risks to operators of the equipment.	Specialist services to be utilised. Progressive trials within a controlled environment are to be conducted to develop processes for the safe operation of the Bridge Boat Interface for VL&VR. Risks may also be reduced through administrative controls and engineering design. The project is to procure engineering services from a company with specialised expertise in the design, manufacture and use of lifting and recovery equipment in order to assist with development and delivery of this capability. In June 2021, AHQ agreed to the cancellation of the Vertical Launch and Vertical Recovery requirements and works package. Consequently, the risks associated with this capability will be retired. This risk will be removed at the next MPR.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
Module Gun Ammunition (MGA) - Delivery Delay There is a chance that a combination of technical complexity, contractual complexity, and certification requirements will delay the delivery of the MGA past the agreed date. That date is FMR and FOC under MAA version 2.2.	A recovery plan may be required which may involve a combination of MAA adjustments, delivery incentives and strict contract schedule management.
Module Gun Ammunition – Access to FMS Data There is a chance that the MGA will not be delivered as required to meet MAA milestones due to the lengthy period required to obtain approvals to access FMS data.	A recovery plan may be required which may involve a combination of MAA adjustments, delivery incentives and strict contract schedule management.
Hazards from carrying Ammunition on communications enabled Gun Tow Vehicle The Gun Tow Vehicle (GTV) is fitted with a communications node. Some ammunition components are sensitive to electromagnetic radiation emitted by the communications node. There is a chance that designing to reduce the risk that the fitted communications node will damage or initiate ammunition components on the GTV, may delay MGA design, incur	In order to mitigate this risk, modelling and physical testing have occurred with the results showing discrepancies between the modelling and the testing. Further testing is required to resolve these discrepancies and to fully scope the scale of the risk and additional mitigation options. That testing is scheduled for August 2021 but the results may not be available in time to reduce the risk before the release of the Request for Tender.

unidentified/unbudgeted costs and constrain or lessen desired capability.	
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5.2 Major Project Issues

Description	Remedial Action
<p>Project interface and integration issues. The MHC has encountered technical engineering and project management integration and interface issues. Integration issues include issues between vehicles, modules and/or trailers, impacting on performance.</p>	<p>Close collaboration with industry partners.</p> <p>The Project integration issues are being actively managed with three key focus areas. The Hydraulic connectors between the Truck Tractor and Trailers has been identified as an issue and a Request for Proposal has been issued to RMMVA to install the correct hydraulic connectors. The second issue is the Park Brake Interlock capability between the ILH Truck, Trailers and Bulk Fuel Modules. RMMVA have proven a solution through testing and the quote has been accepted by the Commonwealth. Hydraulic interfaces have been reviewed during Group C trailer testing and have been found to be satisfactory with minor changes required. The Park Brake Interlock solution has been addressed. Electrical interfaces are still to be implemented on the vehicle and tested prior to conduct of pilot training in August 2018. The Bridge Boat Interface integration issue is being remediated via a Contract Change Proposal with RMMVA.</p> <p>This overarching issue of MHC vehicles' and trailers' interface is being monitored closely by the Project Executive and Engineering, as evident by the Tractor integration and rework program. Integration is expected to be completed once all associated rework on assets are done. The Bridge Boat Interface underwent redesign, modifications and two trials in 2019 to resolve the integration issue and therefore this component of the issue has been resolved.</p> <p>There are on-going integration activities based on reducing risk during ADF operation. As a result, this issue has been downgraded and will be addressed in sustainment.</p>
<p>ILS Acquisition Delays</p> <p>The capability has been affected by delays in codification and spares acquisition from RMMVA, impacting on reputation.</p>	<p>Monitor and Review RMMVA performance.</p> <p>This issue has been downgraded and continues to be tracked closely and has been elevated to management. There is continual engagement with RMMVA on progress.</p> <p>All spares buys have been executed, with final acceptance achieved by RMMVA. All Repair Parts Manuals have been formally delivered, with minor omissions being addressed. This issue is still active but is being effectively managed and has been downgraded. This issue will be removed at the next MPR.</p>
<p>Technical Certification delay</p> <p>The project is affected by the technical restrictions being in place at the time of vehicle's acceptance, impacting on schedule, performance and reputation.</p>	<p>Monitor and Review RMMVA performance.</p> <p>This issue has been downgraded as Technical Certification is now in place for all Mission Systems. This issue will be removed at the next MPR.</p>
<p>Finalisation of User Requirements for Uncontracted Modules</p> <p>There is a risk that uncontracted modules may not have robust User Requirements, which can be taken to industry to satisfy the Capability need. This may lead to Cost, Schedule or Capability risks for the Project and Capability Manager. This risk applies to the Command Post (CP) Static Module, MGS and MGA.</p>	<p>Close collaboration with stakeholders.</p> <p>The development of the modules is on hold due to Operational Concept Document (OCD) and User Requirements being refined. This is expected to be completed by Q3 2021.</p> <p>Delay in issue and approval of the OCDs will result in a risk to schedule for the delivery of the modules. The issue continues to be managed closely with key stakeholders via Integrated Project Team meetings and Project Management Stakeholder Group meetings. Options will be explored with RMMVA to optimise the delivery schedule.</p>
<p>Air Movements Training and Development Unit (AMTDU) certification</p> <p>There is a chance that Recovery vehicles' non-conformance to DEF(AUST) 9009A Air transportability will affect project schedule, performance and cost.</p> <p>IOC has been declared with lack of air certification caveat</p>	<p>Close collaboration with stakeholders.</p> <p>CASG has engaged RMMVA to conduct detailed Finite Elements Analysis on all Tie Down Points in order to satisfy air certification verification requirements. AMTDU continues to be heavily involved and consulted on aspects of design that impact air transportability. AMTDU assessments are being conducted using information available to inform the analysis and findings resulting in either a Risk Retention requirement or full clearance for Air Transportation to be advised once the design process is completed.</p> <p>There is close collaboration with AHQ and RMMVA to conduct additional analysis work to address AMTDU Requests For Information. This issue is still active but is being effectively managed.</p>

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Impact of COVID-19 <p>There is a chance that disruptions as a result of the COVID-19 pandemic will cause delays in the achievement of project milestones. However, major milestones of Final Materiel Release (December 2022) and Final Operating Capability (December 2023) are expected to remain on track. The pandemic could impact: supply chains, delivery of Mission Systems to meet contractual and roll-out schedules, cancellation of events for media/industry, suspension of Training delivery, reduced organisational ability to maintain business tempo and business as usual activities; all of which could cause delay to the project.</p>	<p>Close collaboration with stakeholders.</p> <p>The mitigations and risks in relation to COVID-19 are being closely managed across all stakeholder groups. Close collaboration is also established with key Industry Partners. There is no impact expected to Final Materiel Release or Final Operating Capability milestones.</p> <p>Given the ongoing nature of the pandemic, this risk will continue to be managed with stakeholder groups and key Industry Partners. This issue is still active but is being effectively managed and has been downgraded. It is expected that this issue will be removed at the next MPR.</p>
Achievement of Final Acceptance <p>There remains a significant volume of Contract Data Requirements Lists (CDRLs), Action Items and rework to be completed by RMMVA across Trucks and Modules for them to meet the exit criteria for Final Acceptance Milestones A and B.</p>	<p>Monitor and Review RMMVA performance.</p> <p>Raised at the March 2019 Strategic Relationship Board and escalated to the highest levels of RMMVA senior management in Australia and Germany. RMMVA to present progress against remaining deliverables in fortnightly videoconferences for Commonwealth awareness/oversight.</p> <p>RMMVA achieved Final Acceptance Part A (Bulk Liquids Module) and Part B (all other supplies) in October 2020.</p> <p>On 24 Jun 21 RMMVA was advised of their achievement of Final Acceptance Part D, which revolves around all other 3B remaining Supplies, acknowledging agreed plans and processes to enable successful transfer into sustainment. This issue has been retired and will be removed at the next MPR.</p>
Note <p>Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Government should refrain from announcing preferred tenderers until negotiations are complete. Public announcements undermine negotiation leverage and may provide detail which is subject to change during negotiations.	Contract Management
Projects must have a robust suite of up-to-date capability documents (Operational Concept Document and Functional Performance Specification) available during tender evaluation and negotiations to provide critical contextual information for the negotiation team. These documents also provide the framework for the acquisition authority and capability manager to conduct an informed acceptance process.	Requirements Management
It is key that requirements are fully agreed before negotiations commence to avoid any uncertainty and potential for delays.	Requirements Management
Where doubt exists in relation to compliance claims and/or significant risk is apportioned to a performance requirement, project teams should seek Objective Quality Evidence (OQE) during tender evaluation, so claims of fitness for purpose are supportable and evidence required during Design Acceptance, and AT&E is minimised.	Requirements Management
For projects of this size and complexity, team members require highly developed project management and contracting skills and experience. In preparing for LAND121 Phase 3B contract negotiations, the need was identified for external expertise and advice to support the negotiation process. The presence of an experienced negotiator and technical adviser was key to being able to negotiate a successful contract.	Contract Management
The effort involved with the vehicle/module/trailer interface (including all interfaces between elements of the prime equipment) should not be underestimated even for apparently simple equipment. The early formation of interface working groups is critical.	Contract Management
Early involvement of Army Logistic Training Centre (ALTC) staff in the development of the Training requirement is mandatory. This includes reviewing the ASDEFCON template DID ILS-910 and relevant clauses pertaining to training and participation in preliminary meetings to the Initial Training Conference. Propose a preliminary brief by ALTC to define expectations and 'fit' to contractual requirements.	Resourcing
Government Furnished Equipment (GFE) lists should be continuously developed and updated while the system specifications and statement of work are still subject to negotiations and potential variation, to ensure all items on the contracted GFE list are available and sourced.	Contract Management
Ensure contractual provisions require the contractor to have executed contracts with Approved Subcontractors within a specific time following contract execution, so as to avoid impact on contract deliverables and slippage to key engineering reviews.	Contract Management

'Mancats' is a vehicle diagnostic tool that can be used with the fleet of RMMVA vehicles being acquired. A lesson learned from LAND121 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. LAND121 Phase 3B is negotiating an appropriate lease arrangement with RMMVA for 'Mancats'.	Contract Management
An AT&E program should consider risk and performance requirements to determine whether OQE can be provided by prime contractors and their parent companies to support claims of fitness for purpose in lieu of testing. During negotiations all claims of compliance should be reflected in the qualification method to be used in the AT&E program.	Contract Management
Co-locating the Army School of Transport training team within the CASG Project Office has proven beneficial by allowing for close collaboration and enhanced communication between the two groups. In addition, it has allowed end user input into the vehicle development and supporting processes. The training team have also acted as ambassadors of the capability in their interactions with the wider user group.	Resourcing
Projects of this size and scale will often have numerous dependent projects, many of which will rely on the bigger project running to schedule. The number of requests for information from numerous stakeholder groups sometimes requires prioritisation in order to remain focused on project priorities. This needs careful management to ensure wider Defence priorities and objectives are achieved/supported.	Governance
The importance of the Integrated Logistics Management (ILS) discipline cannot be underestimated. ILS involvement and input is recommended to be considered from the establishment of the project and contract establishment, and implementation. Emphasis on ILS together with engineering and project management involvement in Major Systems Reviews and the design process is critical in ensuring that ILS products can adequately support the delivery of the capability.	Resourcing
The vehicle user nation working group (RMMVUNG) has proven valuable in building an understanding of the CONOPS, issues and challenges faced by different user nations with the same vehicle fleet. There have been lessons learnt by CASG and AHQ from these conferences and there are efforts to reduce support costs by sharing development, refresh and acquisition activities.	Governance

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	MAJGEN Andrew Bottrell
Branch Head	BRIG John-Paul Ouvrier

Project Data Summary Sheets

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Project Data Summary Sheet¹⁵²

Project Number	AIR7000 Phase 1B
Project Name	MQ-4C TRITON REMOTELY PILOTED AIRCRAFT SYSTEM
First Year Reported in the MPR	2019-20
Capability Type	New
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Jul 06
Government 2nd Pass Approval	Jun 18 (Tranche 1) Mar 19 (Tranche 2) May 20 (Tranche 3) Nov 20 (Tranche 4)
Budget at 2 nd Pass Approval	\$2,067.8m (Tranche 4)
Total Approved Budget (Current)	\$1,953.4m
2020-21 Budget	\$191.8m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

AIR7000 Phase 1B will acquire three MQ-4C Triton aircraft and associated support systems. A further three aircraft are planned, subject to further approvals by Government. The Triton is a High Altitude Long Endurance (HALE) Remotely Piloted Aircraft System (RPAS) that will complement the P-8A Poseidon to deliver the Maritime Patrol and Response capability. The Triton is being procured through a Cooperative Program with the United States Navy (USN).

1.2 Current Status

Cost Performance

In-year

The project spent \$206.1m against an in-year budget of \$191.8m. The variance of \$14.3m (7.45%) was primarily due to Prime contract payments being disbursed higher than anticipated by the US Navy in the Cooperative Program.

Project Financial Assurance Statement

As at 30 June 2021, project AIR7000 Phase 1B 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 was declared a Project of Interest (POI) in March 2020 due to the USN announcing a two year production funding pause, in February 2020, for its Triton program (US Fiscal Years 2021 and 2022). Defence placed Triton project activity on hold whilst analysing the impacts to the Australian program and the broader Maritime Patrol and Response capability. Government considered these impacts within the Tranche 3 proposal in May 2020 and approved the acquisition of a third Triton aircraft.

Schedule risk increased with the facilities program being put on hold until Government approval in May 2020. As a consequence, Government agreed revised milestone dates as part of the May and November 2020 decisions. Schedule risk to the facilities program remains elevated until Public Works Committee (PWC) approval has been obtained through Estate and Infrastructure Group proposed for Q2 2022.

Post the November 2020 Tranche 4 Government approval, all project milestone definitions and the project schedule are being re-baselined through Materiel Acquisition Agreement (MAA) update.

Materiel Capability Delivery Performance

The project is expected to achieve the current approved capability scope of three air vehicles and systems, and is expected to meet the full capability of six air vehicles pending future Government decisions.

The USNs delivery of Incremental Functional Capability (IFC 4.0) has been split into 3 increments. Only the first increment has been funded by USN. The capabilities included in IFC 4.0 Increment 1 are all required to meet Australia's Initial Operational Capability (IOC) and will be included in the baseline configuration for Australia's first three aircraft. It is expected that IOC will be achieved with the delivery of Increment 1. The project will work with the USN to define future capabilities in Increments 2 and 3.

Note

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

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

The AIR7000 Program will replace the current Maritime Patrol and Response capability with a complementary mix of crewed P-8A Poseidon (Phase 2B) maritime patrol aircraft and the MQ-4C Triton Remotely Piloted Aircraft System (Phase 1B), designed to operate as a 'family of systems'.

In July 2006, the Government agreed to participate with the US Navy (USN) under a Project Agreement to develop the broad area maritime surveillance (BAMS) capability. In 2008, the Northrop Grumman Global Hawk variant (now designated the MQ-4C Triton) was selected by the USN as the winning tender for the BAMS program.

In February 2009, the Government agreed not to join the USN Cooperative Program (CP) and to defer Phase 1B until after Phase 2B as delays in the USN BAMS program would have meant introducing both aircraft types at the same time. Defence was directed to continue to monitor Triton performance in the USN program.

In February 2014 Government agreed that Defence continue development of a single capability option for Phase 1B for up to seven MQ-4C Triton. Defence subsequently established a Foreign Military Sales (FMS) Technical Services Case with the USN Triton Program Office to secure access to information to support the development of a Gate 2 Business Case. The approved acquisition strategy for the MQ-4C Triton was procurement via FMS. However, the 2014 submission to Government advised Defence's intent to further investigate the value to Defence of entering into a Cooperative Program (CP) with the USN.

Defence White Paper 2016 stated up to seven Triton would be acquired, and in March 2016 Government agreed to the P-8A and Triton force mix, consisting of twelve (12) and six (6) aircraft respectively.

In June 2018, Government provided Second Pass (Tranche 1) Approval to procure the first of six air vehicles, supporting systems and spares, and approval to enter a Triton Development, Production and Sustainment (DPS) CP.

The decision to join the developmental CP was based on benefits including the ability to co-operatively design and develop the MQ-4C Triton RPAS to fulfil the established US and Australian Initial Operational Capability (IOC) requirements to the maximum extent practicable; maximise configuration commonality and promote interoperability; and provide access to the highest level of information.

In March 2019, Government provided Second Pass (Tranche 2) Approval to procure one additional air vehicle (the second of the six provided **in the Integrated Investment Program**, supporting elements, and development of network infrastructure.

In February 2020 the US Federal Defense budget proposed a pause in production funding for the US Navy MQ-4C Triton project for two years (US Fiscal Years 2021-22). This pause in funding impacts AIR7000 Phase 1B. As a co-operative partner in the Triton program, Defence worked closely with both the USN and Northrop Grumman regarding the implications of the pause, in order to inform the Gate 2 (Tranche 3) submission to Government.

In May 2020, Government provided Second Pass (Tranche 3) Approval to procure the third air vehicle. Contracts were subsequently executed between the United States Navy and Northrop Grumman Corporation on 27 June 20 for Australia's three approved MQ-4C Triton aircraft and ground systems.

In November 2020 Government provided Tranche 4 approval for the interim support services covering the first 7 years. The project will update the MAA and support an MPR Program submission due to Government by **end-2021**.

Uniqueness

The MQ-4C Triton is the largest Remotely Piloted Aircraft System (RPAS) to be operated by the RAAF. It is a High Altitude Long Endurance RPAS optimised for use in the maritime environment, and provides far greater on-station endurance at greater ranges when compared to conventionally piloted aircraft.

The RAAF MQ-4C RPAS will be identical to the USN MQ-4C RPAS, 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 remain as common as technically possible.

AIR7000 Phase 1B is developing, producing and sustaining the MQ-4C 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 RPAS, better awareness and control of project costs drivers, insight into program risks, better access to technical and sustainment data, leveraging economies of scale in production and sustainment, and access to the USN wholesale spares warehouse.

There are eight Commonwealth personnel embedded in the USN Program organisations as a non-financial contribution to the shared outcomes of the CP. These embedded team members are referred to as Cooperative Program Personnel (CPP). In addition to their roles within the USN Program, CPP may provide input, insight and influence across the MQ-4C program.

Major Risks and Issues

The project is currently managing the following major risks:

- Single Information Environment (SIE) ICT Integration
- Triton Operating Permit Process
- Immature data to adequately quantify Sustainment Costs
- Facilities Design, **Schedule** and Construction Costs

Initial System QualificationEmergent Risks

- **Facilities are incomplete to achieve Interim Operating Capability**

Retired Risks

- **Facilities are Incomplete to achieve In Service Date**
- **Operational Test and Evaluation (OT&E), and Network Integration capability**
- **Satellite Communication (SATCOM) Support**

Other Current Related Projects/Phases

AIR7000 Phase 2 – Maritime Patrol and Response Aircraft System: acquisition of 14 P-8A Poseidon and Through Life Support system. Triton and Poseidon will form part of a 'Family of Systems' to replace the AP-3C Orion Capability.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

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Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
July 06	Original Approved	3.9	1
Aug 09	Real Variation – Real Cost Decrease	(1.3)	2
Feb 14	Government Intermediate Consideration	18.4	3
Mar 16	Government Interim Consideration	1.5	4
Jun 18	Government Second Pass Approval – Tranche 1	901.1	5
Jun 18	Real Variation – Transfer	1.0	6
Apr 19	Real Variation – Transfer	0.7	6
July 19	Government Second Pass Approval – Tranche 2	320.8	7
Jun 20	Real Variation – Real Cost Decrease	(2.2)	7
July 20	Government Second Pass Approval – Tranche 3	626.1	7
Mar 21	Government Second Pass Approval – Tranche 4	197.8	13
	Total at Second Pass Approval	2,067.8	
Jul 10	Price indexation	0.2	9
Jun 21	Exchange Variation	(114.7)	
Jun 21	Total Budget	1,953.4	12
Project Expenditure			
Prior to Jul 2020	DPS MoU	(91.1)	10
	Sense and Avoid Capability	(63.5)	
	Triton Prime Contracts	(11.1)	
	Diminishing Manufacturing Source Items	(8.9)	
	USN Production Engineering and Logistics Support	(0.6)	
	Other Contract Payments / Internal Expenses	(27.5)	
		(202.8)	
FY to Jun 21	Triton Prime Contracts	(134.7)	11
	DPS MoU	(35.2)	
	USN Production Engineering and Logistics Support	(4.7)	
	Diminishing Manufacturing Source Items	(4.4)	
	Other Contract Payments / Internal Expenses	(27.1)	
		(206.1)	
Jun 21	Total Expenditure	(408.9)	
Jun 21	Remaining Budget	1,544.5	12
Notes			
1	Government First Pass Approval to initiate the Project and enter a Project Agreement with USN for development of a broad area maritime surveillance (BAMS) capability.		
2	Government decision to defer the project, excess funds returned to Government after the completion of First Pass approved scope.		
3	Government Intermediate Pass Approval, to continue development of a single capability option for Phase 1B and establishment of a Foreign Military Sales Technical Services Case.		
4	Government Interim Pass, to continue project development of submission, including negotiation of a Cooperative Program Memorandum of Understanding, for Second Pass approval.		
5	Government Second Pass Approval Tranche 1 Funding. Tranche 1 approval to fund 1 aircraft, 3 Main Operating Base Mission Control Systems , 2 Forward Operating Base Mission Control Systems and associated support systems and spares.		
6	Funding transfers from Defence Science and Technology Group (DSTG) to CASG.		
7	Government Second Pass Approval Tranche 2 and 3 to fund a total of two additional aircraft and associated support systems.		
8	Force Structure Plan (FSP) amendment in June 2020.		
9	Until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.2m, applied only to the portion of the budget approved at First Pass.		
10	Other contract payments/internal expenses to 30 June 2020 were comprised of pre-2 nd pass approval expenses \$13.4m , and other project management expenses \$14.1m .		
11	Other contract payments/internal expenses to 30 June 2021 were comprised of Project Management Expenses \$10m and Major Service Provider Expenses \$8.8m Other Cooperative Program Expenses to United State of Navy \$8.3m .		
12	Total and remaining budget, as at 30 Jun 2021 includes Tranche 3 and 4 Government approved funding.		
13	Tranche 4 approved initial sustainment funding for the first 7 years.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
239.2	200.0	191.8	PBS – PAES: The variation is due to alignment with an updated USN delivery schedule for Prime and Non-Prime contracts. PAES – Final Plan: The variance is due to foreign currency exchange adjustments.
Variance \$m	(39.2)	(8.2)	Total Variance (\$m): (47.4)
Variance %	(16.4)	(4.1)	Total Variance (%): (19.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	The variance in spending was primarily due to the Prime contract payments being disbursed higher than anticipated by the US Navy in the Cooperative Program.
			Foreign Industry	
			Early Processes	
			Defence Processes	
		14.3	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
191.8	206.1	14.3	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 21 \$m					
US Government (DPS MoU)	Jun 2018	200.0	207.3	Cost Ceiling (Capped)	MoU	1		
US Government (Diminishing Manufacturing Source Items)	Nov 2018	0.5	21.0	Variable	MoU	2,3		
US Government (Triton Prime Contracts)	May 2019	37.5	489.5	Variable	MoU	3,4		
US Government (USN Production Engineering and Logistics Support)	May 2019	0.7	37.6	Variable	MoU	3, 5		
US Government (PA-1 Sense and Avoid Capability)	May 2019	61.3	63.5	Cost Ceiling (Capped)	MoU	1, 6		
Notes								
1	DPS MoU and Project Arrangement 1 (PA-1) funding is 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	Diminishing Manufacturing Source (DMS) Items is a US Government managed program to address availability and obsolesce of components. Additional Australian aircraft and the developmental nature of the program required an uplift to the initial funded amount.							
3	Contract value as at 30 June 2021 is based on actual expenditure to 26 May 2021 and remaining commitment at current budget exchange rates. This includes adjustments for indexation (where applicable). The incremental funding of these activities will see a progressive increase to the Price.							
4	In May 2020 the scope of the contract was expanded to include three Air Vehicles, one Main Operating Base (MOB) Mission Control System (MCS) and one Forward Operating Base (FOB) MCS.							
5	Production Engineering and Logistics Support requests are made on an annual basis. The value of this contract will increase annually.							
6	PA-1 Sense and Avoid Capability has fully expended all funding to the US Government.							
Contractor	Contracted Quantities as at		Scope			Notes		
	Signature	30 Jun 21						
US Government (DPS MoU)	N/A	N/A	Australia's contribution to shared costs from 2017-18 to 2027-28 includes contribution to development, production and sustainment for common efforts, and project overhead and administration costs.					1
US Government (Diminishing Manufacturing Source Items)	Various	Various	DMS is managed through monitor and risk mitigation efforts, life of type procurements, design changes to substitute new parts and other treatments. Signature allowed DMS treatments to be applied for Australian supplies within the US DMS program.					2
US Government (Triton Prime Contracts)	Various	Various	For LRIP5 aircraft and ground system long-lead components. Australian elements of the awarded contract include three Air Vehicles, one Main Operating Base (MOB) Mission Control System (MCS) and one Forward Operating Base (FOB) MCS.					

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US Government (USN Production Engineering and Logistics Support)	N/A	N/A	USN labour and services including, but not limited to: Non Recurring Engineering efforts in support of aircraft and system production, logistics modelling and forecasting.	
US Government (PA-1 Sense and Avoid Capability)	N/A	N/A	Australia's contribution to shared costs from 2018-19 to 2023-24 for the development of the Sense and Avoid capability (including weather radar) to enable greater access to airspace and environmental conditions.	1
Major equipment accepted and quantities to 30 Jun 21				
Nil				
Notes				
1	No equipment delivered as part of this MOU and PA.			
2	DMS supplies and non-recurring engineering will be incorporated into production aircraft and systems before delivery.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Requirements	Triton Multi-INT System Requirements Review 2	N/A	N/A	Dec 15	N/A	1
Preliminary Design	Triton Multi-INT Preliminary Design Review	N/A	N/A	Dec 16	N/A	1
Critical Design	Triton Multi-INT Critical Design Review	N/A	N/A	Nov 17	N/A	1
Notes						
1	These milestones were achieved by the USN as part of the developmental program schedule prior to AIR7000 Phase 1B Second Pass approval and Australia joining the Cooperative Program.					

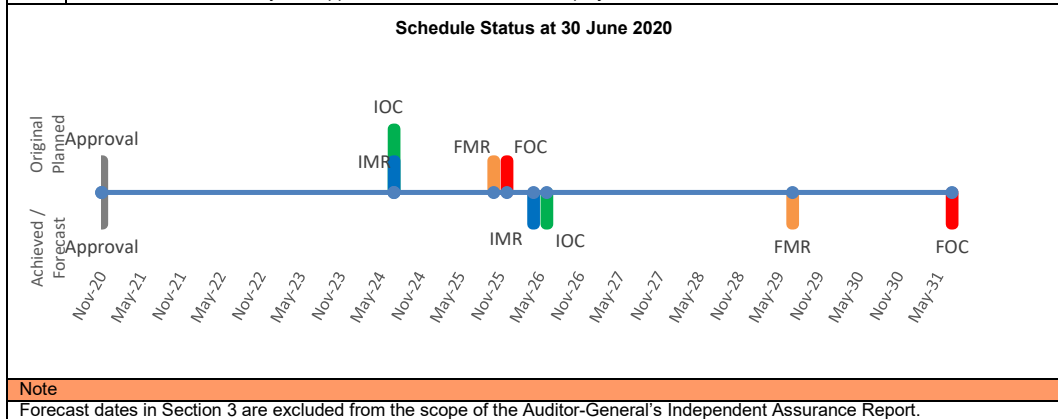
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Integration	IFC-4.0 Initial OT&E	N/A	N/A	N/A	N/A	1
	IFC-4.0 Increment 1 Operational Assessment to Support IOC	Jun 23	N/A	Aug 23	2	4
	IFC-4.0 Increment 2 Operational Assessment to Support IOC	TBA	N/A	TBA	N/A	5
	IFC-4.0 Increment 3 Operational Assessment to Support IOC	TBA	N/A	TBA	N/A	5
Acceptance	Delivery to Edinburgh of Main Operating Base (MOB) Mission Control System #1 (MOB MCS#1)	Oct - Dec 21	Mar 22	Jul 23	19	1,3
	Commencement of crew training with the USN.	Jul - Sep 22	N/A	Jul 22	0	
	Issue of Airworthiness Instrument (Unmanned Aircraft System Operating Permit).	Mar - May 23	N/A	Apr 23	0	
	Delivery of sixth and final MQ-4C Air Vehicle (AV) [Subject to Government Approval of AV 4-6 and sequencing with USN].	TBA	TBA	TBA	N/A	2
Notes						
1	This was a USN and Northrop Grumman Systems Engineering milestone, originally forecast for Aug 21, for the Incremental Functional Capability (IFC 4.0), the baseline configuration for the ADF. IFC 4.0 has now been split into 3 increments per the revised USN delivery schedule.					
2	Government is yet to approve this scope. Subject to Government approval, all project milestone definitions and the project schedule will be re-baselined through an MAA update.					
3	One year delay from original schedule due to production funding pause announcement preventing Public Works Committee referral in March 2020. Facilities design was paused until Government approval in May 2020. The change in basing for aircraft from Edinburgh to Tindal resulted in a redesign which has also contributed to the amendment of dates, however the MCS will still be delivered to Edinburgh. Despite the forecast variance, IOC is still achievable as currently planned/ forecast.					
4	As a result of the Incremental approach to the delivery of IFC-4.0, the forecast date for achievement of the Operational Assessment has changed to account for the revised capability delivery.					
5	Future Increments have yet to be approved by the US Government.					
6	Greater detail of these milestones are reflected in Section 4.2					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

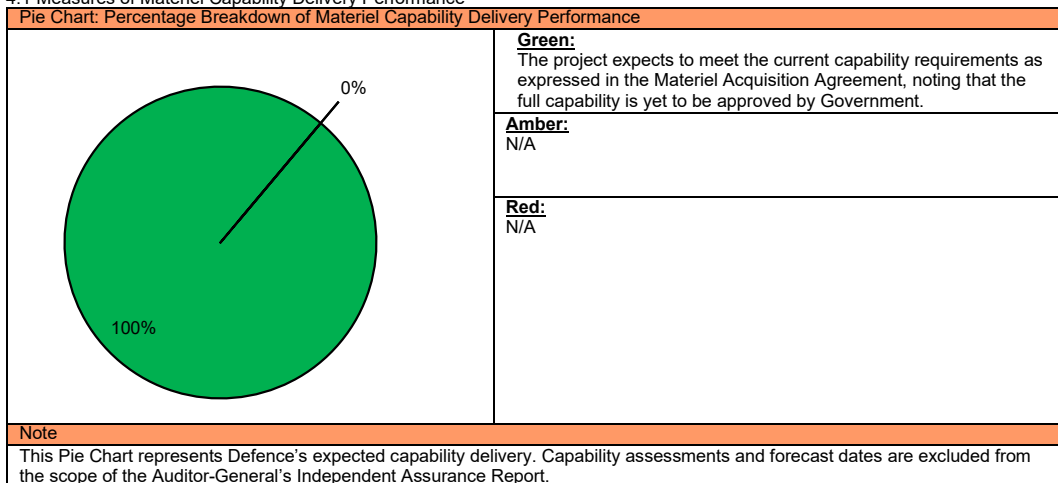
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Jul 23	Jan – Dec 24	12	1
Initial Materiel Release (IMR)	May – Jul 24	May 25 – Apr 26	12 – 21	1
Initial Operational Capability (IOC)	Jul 24	Jul 25 – Jun 26	12 – 24	1
Final Materiel Release (FMR)	Aug – Oct 25	Jul 28 – Jul 29	35 – 45	2
Final Operational Capability (FOC)	Dec 25	Jul 30 – Jul 31	56 – 66	2

Notes				
1	In Second Pass (Tranche 3) Government Approval, ISD was amended by 12 months (and consequently IMR and IOC by 24 months against the Original Planned) due to the impacts of the USN production funding pause announcement in February 2020, resulting in pause of facilities progression.			
2	As at November 2020, FOC has changed to align with the Tranche 4 approval. Delay to FOC is based on USN funding pause and prioritisations and the revised MPR Program baseline schedule which funds additional Triton later in the decade. Government is yet to approve future tranches of the project.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none"> 2 x Triton Air Vehicles delivered to Australia. 2 x Main Operating Base Mission Control Systems including a Secondary site incorporating a Mission System Trainer installed and ready for use at Edinburgh. 1 x Forward Operating Base Mission Control System installed and ready for use at Tindal. Initial Distributed Operator functionality enabled and ready for use. Initial US trained crew (initial focus will be on Test & Evaluation and tactics development). Sufficient Network Technicians to meet the 	Not yet achieved

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	<ul style="list-style-type: none"> planned rate of effort. Facilities as required to enable commencement of flying operations. Support systems, equipment and spares as required. <p>IMR is forecast to be achieved May 2025 – Apr 2026.</p>	
Initial Operational Capability (IOC)	<p>The Triton system is able to safely sustain one orbit in the maritime surveillance role, at a rate of effort to support initial operations.</p> <p>IOC is forecast to be achieved in Jul 2025 – Jun 2026.</p>	Not yet achieved
Final Materiel Release (FMR)	<ul style="list-style-type: none"> All Triton Air Vehicles delivered to Australia. All Main Operating Base and Forward Operating Base Mission Control Systems installed and ready for use. 1 x Forward Operating Base configured for expeditionary use. All Mission System Trainers installed at Edinburgh and ready for individual and collective training. All crews trained. Full complement of Network Technicians trained and available to meet the planned rate of effort. All support systems, equipment and spares. <p>FMR is forecast to be achieved Jul 2028 – Jul 2029.</p>	Not yet achieved
Final Operational Capability (FOC)	<p>The Triton system is able to safely and effectively conduct two orbits, in all roles, at a rate of effort in accordance with strategic and capability guidance.</p> <p>FOC is forecast to be achieved in Jul 2030 – Jul 2031.</p>	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Single Information Environment (SIE) Integration There is a chance that the current network infrastructure, combined with the level of development required to integrate the Triton system into the Defence SIE, will require design and certification effort that may not be achievable by the capability milestone dates.	Chief Information Officer Group - Military Platform Integration (CIOG-MPI) has developed a phased approach to SIE integration in line with capability milestones. This includes reliance on, and support of, other network infrastructure projects. The project and CIOG-MPI continue to leverage the Cooperative Program to source required technical data, subject matter expert advice and lessons learned from the USN network integration experience.
Triton Operating Permit process There is a chance that the complexity and novelty of a large Remotely Piloted Aircraft System may lead to delays in the issue of an Operating Permit and achievement of dependent capability milestones.	The project established a Triton Airworthiness Working Group to facilitate engagement with the Defence Aviation Safety Authority and other stakeholders to ensure: An integrated approach to technical and operational considerations, and an Operating Permit process that is aligned with Defence Aviation Safety Regulations.
Immature data to adequately quantify Sustainment Costs There is a chance that the planned sustainment budget may be affected by insufficient data maturity leading to an impact on achieving Air Force support requirements and overall program affordability.	The project continues to work closely with the USN, Northrop Grumman Corporation and the Surveillance and Response System Program Office to identify sustainment cost drivers, investigate opportunities for sustainment efficiencies, validate logistics modelling assumptions, and implement lessons learned from other USN sourced systems. Sustainment data will continue to mature as the USN Triton operational tempo increases. The project is also working with Northrop Grumman Australia to develop an affordable 'Interim Support Services Contract' for Australian based support.
Initial system qualification Australian Triton aircraft will initially be delivered with some systems requiring further qualification to allow operation in all airspace and environmental conditions. There is a chance that the qualification and retrofitting of these systems may result in a delay to FOC.	The project is working with the USN to plan for an 'Alternate Means of Compliance' program to support initial operations in some airspace and environmental conditions. The Commonwealth has entered into Project Arrangement 1 (PA-1) for the development of a Sense and Avoid capability. The Cooperative Program includes activities to address flight in icing conditions.
Facilities Design and Construction Costs There is a chance that facilities design and construction management costs will affect the affordability of Triton facilities.	Estate and Infrastructure Group is engaging design and construction contractors to facilitate Public Works Committee expediency. Construction is to be commenced as soon as possible to reduce the risk of in-year cost escalation through materials and labour cost increases.

Operational Test & Evaluation (OT&E), and Network Integration complexity There is a chance that SIE Integration testing, and OT&E, may increase in complexity if OT&E is conducted away from the Main Operating Base at RAAF Edinburgh, leading to a possible delay of MAA milestone dates for ISD and IOC.	This risk was realised as an issue and has since been retired. As part of AFHQ basing decision, the risk of the remote split has been realized and is now part of the project baseline delivery
Emergent Risks (risk not previously identified but has emerged during 2020–21)	
Description Facilities Schedule to Achieve Interim Operating Capability Facilities schedule currently on the critical path. A number of issues including a pause to the facilities program due to US Triton program uncertainties and a change of operational concept have contributed to the current position.	Remedial Action Capital Facilities and Infrastructure (CFI) Branch is invoking early works utilising funding transferred to AIR555 for shared works at EDN. Tindal design contractor has now been appointed and has commenced work. CFI Branch working towards Public Works Committee referral and expediency as early as possible post-delivery of Tindal 30% design expected Q3.

5.2 Major Project Issues

Description	Remedial Action
Facilities are incomplete to achieve In Service Date In Service Date (ISD) for commencement of Triton flights in Australia is delayed by approximately 12 months due to delays in gaining Public Works Committee approval for Triton facilities.	The issue has been downgraded. Referenced delay is now achievable due to the shift in ISD and IOC as a result of the May 2020 Government approval. Issue is now linked to Facilities Schedule to Achieve Interim Operating Capability.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
N/A	N/A

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	AVM Gregory Hoffmann
Branch Head	AIRCDRE Jason Agius

Project Data Summary Sheets

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Project Data Summary Sheet¹⁵³

Project Number	LAND121 Phase 4
Project Name	Protected Mobility Vehicle – Light
First Year Reported in the MPR	2016-17
Capability Type	Replacement
Capability Manager	Chief of Army
Government 1st Pass Approval	Oct 08
Government 2nd Pass Approval	Aug 15
Budget at 2nd Pass Approval	\$1,945.0m
Total Approved Budget (Current)	\$1,952.9m
2020-21 Budget	\$425.7m
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND121 Phase 4 will acquire and deliver into service 1100 Protected Mobility Vehicles – Light (PMV-L) and 1058 companion trailers for command, liaison, reconnaissance and utility roles; and the associated training and support systems. Stage One (Engineering and Manufacturing Development) of the project delivered 10 vehicles and five trailers for various test and evaluation activities. Stage Two (Low-Rate Initial Production) delivered an additional six vehicles and four trailers for reliability testing and verification / validation activities. Stage Two **has delivered** the first 100 production vehicles and trailers. Stage Three (Full-Rate Production) will deliver the remaining 1000 production vehicles and 958 trailers.

The PMV-L will replace around one third of the current Land Rover fleet, and represents a **brand** 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, useability, payload, sustainability and communications.

The PMV-L is the ADF's only protected vehicle capable of being lifted by ADF Chinook helicopters. The vehicle also pioneers a next-generation open architecture communications management system, the Integral Computing System (ICS), which integrates the vehicle's various communications systems through a common interface.

The PMV-L fleet will consist of two variants, which may perform specific mission roles:

- 4-Door PMV-L: The 4-Door vehicle may perform the following roles:
 - Command - Carriage of up to four personnel with additional integrated electronic command, control and communication systems.
 - Liaison - Carriage of up to four personnel with a general communication fit.
 - Reconnaissance - Carriage of up to four personnel to perform light infantry, reconnaissance and Air Force security functions.
- 2-Door PMV-L: The 2-Door vehicle will perform the following role:
 - Utility - Carriage of two personnel and cargo.

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

1.2 Current Status

Cost Performance

In-year

As at 30 June 2021, financial year 2020/21 expenditure was **\$411.6m against the budget of \$425.7m. The variation of \$14.1m is primarily due to the later than planned exit of four contract milestones, which were delayed due to the Hawkei braking issue. Defence and Thales have agreed to the Brake Remediation Plan, and Defence has recognised the milestones as partially complete.**

Project Financial Assurance Statement

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

As at 30 June 2021, LAND121 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 of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Under Stage One (Engineering and Manufacturing Development) of the LAND121 Phase 4 Acquisition Contract, Thales Australia delivered 10 vehicles and five trailers on schedule for the purpose of further development and testing. As part of this stage Thales Australia conducted a Reliability Growth Trial (RGT). During RGT, the performance of the vehicles exceeded the number of critical failures allowable under the contract. Defence required Thales Australia remediate these critical failures in order to fulfil the contractual reliability requirements of this Stage. This remediation activity resulted in an additional RGT, extending Stage One by a further four months.

The RGT was separated into the following three activities:

- RGT Number One was conducted over the period July to December 2016 and provided Thales with the opportunity to resolve any issues with the vehicles ahead of the formal trial activities that commenced under RGT Number Two.
- RGT Number Two commenced in November 2016. In January 2017, the pilot Hawkei vehicles had exceeded the seven allowable critical failures under the contract. Identified key root causes include supplier quality issues and immature components affecting hardware and software integration. A six-week corrective action period was implemented to allow Thales to undertake engineering upgrades.
- RGT Number Three (May to July 2017) followed this, which demonstrated reliability improvements on a number of sub-systems, but a number of recurring failures were evident.

Thales Australia was granted exit of Stage One on 5 September 2017, with the caveat that Thales Australia continued to address the reliability issues. A Reliability Demonstration Test (RDT) was conducted from October 2017 until November 2018 to confirm that the reliability improvements **were** implemented prior to **the commencement of** the Production Reliability Acceptance Testing (PRAT) and **transition to** Full-Rate Production (FRP).

The RDT was completed in November 2018, with a number of residual reliability issues outstanding. Thales provided sufficient Objective Quality Evidence to resolve these outstanding issues to enable the final component of the reliability program, PRAT, to commence in May 2019. The driving component of the PRAT concluded on 29 March 2020, with all eight vehicles completing the required test distance. PRAT was formally completed on 10 June 2020 when the Commonwealth approved the Integrated Reliability, Maintainability and Testability Report (IRMTR).

Acceptance of the Stage Two Test And Evaluation Activities (Acceptance Verification and Validation (AV&V), including PRAT) by Defence **was** required prior to exiting Stage Two.

Thales successfully exited the Support System Detailed Design Review (Maintainer) on 19 June 2020.

Initial Materiel Release (IMR) and Initial Operating Capability (IOC) were re-scheduled to May 2020 and December 2020 **respectively**, due to Hawkei reliability issues, design maturity and the production delays caused by Steyr Motors' voluntary administration.

Remedies under the contract, including liquidated damages, **were received during 2020-21 as a result of the reliability issues. While stop payments have previously been initiated, none have occurred during the 2020-21 Financial Year.**

Army endorsed the declaration of IMR with caveats on 26 May 2020. The **caveats related** to delays in the delivery of some elements of the Hawkei Support System, and Verification and Validation activities, primarily due to COVID-19 restrictions. **As at 30 June 2021, all caveats had been resolved.**

Defence formally advised Thales on 30 September 2020 that it had been granted approval to exit Stage 2 – Low-Rate Initial Production and enter Stage 3 – FRP.

Army's declaration of IOC was deferred a further six months, pending resolution of a vehicle safety incident that occurred on 23 November 2020. Defence temporarily suspended the use of the Hawkei fleet on 25 November 2020 until the issue was resolved. The incident involved the application of the Anti-Lock Braking System (ABS) under specific operating conditions. Thales has developed a technical solution to resolve the issue, which will be implemented across the Hawkei fleet by June 2022. This enabled the Hawkei operating restrictions to be lifted with interim administrative controls in place to ensure the safe operation of the vehicle under all conditions.

The Hawkei commenced Phase-In into the Protected Mobility Family of Vehicles Through Life Support Contract on 03 May 2021.

Army declared IOC for the Hawkei on 20 May 2021.

Materiel Capability Delivery Performance

16 PMV-L pre-production baseline vehicles and nine trailers were delivered for development and testing purposes under Stages One and Two. The acceptance process for the Low-Rate Initial Production (LRIP) vehicles and trailers commenced in January 2018, with the first vehicles being formally accepted by the Commonwealth in March 2018. The Commonwealth has accepted **260** vehicles and **255** trailers (out of a total of 1100 vehicles and 1058 trailers planned for delivery into service).

Defence conducted a trial involving the deployment of two Hawkei vehicles to Iraq and Afghanistan. The vehicles were deployed into Iraq as part of Task Group Taji and then redeployed in April 2018 to the Australian contingent in Kabul, Afghanistan. This trial commenced in December 2017 and concluded in August 2018. The key trial objectives included the identification of operational and support issues and deployment considerations for the Hawkei capability.

Thales advised the Commonwealth on 29 November 2018 that the Hawkei engine supplier, Steyr Motors, had entered into voluntary administration, which would result in a delay in the supply of engines. Thales advised Defence that it had acquired Steyr Motors on 23 August 2019. Thales' procurement of Steyr Motors will ensure the continuity of engine supply and the long-term sustainability of the Hawkei program. The IMR milestone was re-scheduled to May 2020 due to Hawkei reliability issues, design maturity and production delays caused by Steyr Motors entering voluntary administration.

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The Hawkei support system continues to be developed. Operator Training commenced at the Army School of Transport in September 2018. Maintainer Training commenced in November 2019 at the Army School of Electrical and Mechanical Engineers.

A Hawkei Operational Test and Evaluation activity was successfully conducted in August 2020 to inform Army's declaration of IOC.

The Systems Acceptance Audit (SAA) was conducted in two parts on 8 September 2020 and 1-3 December 2020. SAA Part One confirmed that the Hawkei mission and support systems met the required specification. Thales Australia was granted approval to exit SAA Part One on 16 September 2020.

SAA Part Two confirms the Hawkei FRP design baseline and associated support system is delivered as contracted. The Commonwealth continues to work with Thales Australia to finalise SAA Part Two.

LAND 121 Phase 4 has rolled out 101 Hawkei vehicles as at 30 June 2021, to Army units in Adelaide, Brisbane, Darwin and Townsville, as well as to Army training units in Puckapunyal and Bandiana.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

LAND121 Phase 4 was established to address a new capability requirement within the ADF's land mobility assets emanating from the absence of lightweight and light class field vehicles with the requisite levels of ballistic and blast protection.

At First Pass in October 2008, Government agreed for Defence to pursue the development of a 'next generation' PMV-L by joining the US Joint Light Tactical Vehicle (JLTV) Program (Option One) and at the same time retain the possibility of acquiring a Market Available Vehicle (MAV) in the event JLTV proves unsuitable (Option Two). In May 2009, Government directed that an Australian indigenous option for PMV-L be considered. In June 2009, a Manufactured and Supported in Australia (MSA) Option (Option Three) was included in LAND121 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 LAND121 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 **was** to be pursued to Second Pass.

In May 2010, Government agreed that the MSA Option be further investigated prior to Interim Pass through the conduct of initial prototyping activities. On 30 June 2010, a draft schedule for each option to deliver the PMV-L capability was submitted to the Government for consideration. Stage One MSA funding was provided in July 2011 following approval of Materiel Acquisition Agreement (MAA) V2.1. Stage One of the MSA Option consisted of assessing six developmental Line of Departure vehicles (LOD) that met the Australian content requirement. Two from each of the three companies - Force Protection Europe Ltd, General Dynamics Land Systems-Australia and Thales Australia Ltd against function and performance specifications and value for money. Through the procurement process, it was determined that there were no off-the-shelf options available that met all ADF requirements.

At Interim Pass in December 2011, Government refined its direction to the following:

- Directed Defence to cease active participation in the US JLTV Program;
- Selected Thales Australia's PMV-L as the preferred vehicle for further development and testing under Stage Two of the MSA Option (Option Three); and
- Directed Defence to continue observing the US JLTV Program, given its potential to provide an alternative at Second Pass.

Interim pass funding was provided in April 2012 following approval of MAA V3.0. Defence entered into Stage Two of the MSA Option with Thales Australia to carry out further development of their PMV-L, culminating in a program of trials and testing of the prototypes in late 2013. Additional development work and testing were carried out in 2014 under the MSA Stage Two through a Risk Reduction Activity (RRA) aimed at reducing residual technical risk to an acceptable level.

The acquisition contract mandates that a minimum of fifty percent of the production or manufacturing costs are to be incurred in Australia.

In August 2015, Government provided Second Pass Approval for LAND121 Phase 4 to acquire Thales Australia's PMV-L. Second Pass funding was provided in September 2015. Subsequently, LAND121 Phase 4 signed a contract in October 2015 with Thales Australia to acquire and support 1100 PMV-L vehicles and 1058 trailers. The Acquisition Contract contains three distinct stages that reflect the developmental nature of the PMV-L capability, and which minimises production rework:

- Stage One: Engineering and Manufacturing Development. Includes the provision of 10 vehicles and five trailers, including test vehicles and trailers; the conduct of a vehicle RGT and other developmental test and evaluation activities. Acceptance of these results by Defence was required prior to exiting Stage One.
- Stage Two: Low-Rate Initial Production (LRIP). Includes the production of 100 vehicles and 100 trailers, plus six test vehicles and four trailers based on an approved production baseline; the conduct of a PRAT, and final acceptance testing and evaluation activities.
- Stage Three: Full-Rate Production. The production of the remaining vehicles and trailers based on the approved FRP baseline, and the achievement of IMR and Final Materiel Release (FMR). This stage will also include the uplift of all LRIP vehicles and trailers to the FRP build standard.

Support requirements for the PMV-L have been incorporated into the existing Protected Mobility Vehicle-Medium (Bushmaster) Through Life Support Contract. It is anticipated that integrating the support arrangements for both fleets will reduce the overall cost of ownership of the vehicle systems by approximately \$270 million over the 15-year life of the vehicle systems.

Uniqueness LAND121 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: <ul style="list-style-type: none"> A high level of blast, ballistic and fragmentation protection, enabling greater deployability within high risk operational environments. External Air Transport Mass, enabling the capability to be the ADF's only protected vehicle capable of being lifted by ADF Chinook helicopters. A next-generation Generic Vehicle Architecture based C4I solution - Integral Computing System (ICS). Utilise a modular armour system to enable enhanced protection based on mission specific roles.
Major Risks and Issues The Project currently has one 'high' rated risk and one 'high' rated issue (pre-mitigation rating). The one 'high' rated risk in section 5.1 is: <ul style="list-style-type: none"> There is a chance that the integration of interdependent projects onto the Hawkei will delay the rollout of vehicles to Army. The one 'high' rated issue in section 5.1 is: <ul style="list-style-type: none"> Issues have arisen with the quantity of personnel required to undertake Hawkei Introduction Into Service Training to achieve Army's Directed Training Requirement (DTR) by FOC.
Other Current Related Projects/Phases LAND121 is a multi-phased program providing the ADF with current-generation high-capability field vehicles, modules and trailers. The other current LAND121 projects are: <ul style="list-style-type: none"> LAND121 Phase 3B – This project is providing the ADF with 2,707 protected and unprotected medium and heavy vehicles, along with 1,753 matched trailers. This will provide payloads of between four and seventy tonnes for a range of logistics functions, including vehicle recovery, freight, bulk liquid distribution and personnel carriage. LAND121 Phase 5B – This project is a follow-on acquisition from LAND121 Phase 3B, and is providing the ADF with an additional 1,044 medium and heavy vehicles, 872 modules and 812 trailers. LAND200 Tranche 2 – This project expands LAND200 Tranche 1 capability across Army with new collaborative planning, control and monitoring tools for Brigade and Divisional level headquarters and integrates the system into additional platforms. The two major sub-systems of the Battlefield Command Systems are the Battle Management System and the Tactical Communications Network. Refer to Section 2.3 for further information relating to the contractual arrangements between LAND200 Tranche 2, LAND121 Phase 4 and Thales Australia. LAND154 Phase 4 – This project replaces the ADF's existing Force Protection Electronic Counter Measures (FPECM) capability through improved Military off the Shelf technology, procured via the United States Foreign Military Sales program. FPECM mission systems will include both a Dismounted system and a Vehicle Mounted System (VMS). The VMS will be integrated onto a range of ADF mobility platforms, including the Hawkei. LAND19 Phase 7B – This project will acquire a new short range ground based air defence capability, replacing Army's existing RBS-70 system. Under the scope of LAND19 Phase 7B, the tactical radar and high mobility launcher system will be integrated onto the Hawkei mission system.
Note Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
May 08	Original Approved	1.8	
Nov 09	Real Variation - Scope	5.7	1
Jul 11	Real Variation - Scope	31.5	2
Apr 12	Real Variation - Scope	48.4	3
Sep 15	Government Second Pass Approval	1,857.6	
	Total at Second Pass Approval	<u>1,945.0</u>	4
Jul 10	Price Indexation	0.4	5
Jun 21	Exchange Variation	<u>7.6</u>	
Jun 21	Total Budget	<u>1,952.9</u>	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - Thales Australia (Prime Contract)	(649.4)	
	Contract Expenditure - Thales Australia prototyping activities (MSA Stage One and Stage Two Contract)	(58.7)	6
	Other Contract Payments/Internal Expenses	(66.3)	7
		<u>(774.4)</u>	
FY to Jun 21	Contract Expenditure - Thales Australia (Prime Contract)	(393.4)	
	Other Contract Payments/Internal Expenses	(18.2)	8
		<u>(411.6)</u>	
Jun 21	Total Expenditure	<u>(1,186.0)</u>	4
Jun 21	Remaining Budget	<u>766.9</u>	
Notes			

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1	This amount reflects funding approval at First Pass Approval.
2	This amount reflects approval to undertake MSA Stage One prototyping.
3	This amount reflects funding approval at Interim Pass for MSA Stage Two prototyping.
4	The Budget and Expenditure amounts do not reflect the \$43.0m paid in 2009. Due to the payment being provided by Capability Development Group and was not part of the LAND121 Phase 4 project budget.
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$0.1m having been applied to the remaining life of the project.
6	These expenditures relate to pre Second Pass costs associated with exploring the Government initiated MSA Option (Option Three) and the contracts are now closed.
7	Expenses comprise of: MAV prototyping activities (\$17.7m); External Service Providers (\$17.3m), Non-Prime contracts (\$10.6m); costs related to testing / trials (\$7.8m); Project administrative costs (\$5.8m); Support Contract Phase-In Payments (\$3.3m) ; Legal costs (\$2.1m) and US JLTV Program (\$1.8m).
8	Expenses comprise of: External Service Providers (\$8.1m); Support Contract Phase-In costs (\$2.5m); Costs related to testing/trials (\$0.2m); Non-Prime contracts (\$7.3m).

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
440.1	434.0	425.7	PBS – PAES: The variation is primarily due to foreign exchange updates. PAES – Final Plan: The variation is primarily due to Foreign Exchange updates.
Variance \$m	(6.1)	(8.3)	Total Variance (\$m): (14.4)
Variance %	(1.4)	(1.9)	Total Variance (%): (3.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(14.1)	Australian Industry	The year-end variance of \$14.08m is primarily due to the later than planned exit of four contract milestones, which were delayed due to the Hawkei braking issue. Defence and Thales have agreed the brake remediation plan, and Defence has recognised the Milestones as partially complete.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
425.7	411.6	(14.1)	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 21 \$m			
Thales Australia	Jul 10	9.0	58.7	Firm	Standard Defence Contract	2, 3
Thales Australia	Oct 15	1,328.5	1,532.2	Fixed	Standard Defence Contract	1, 2, 4, 5, 6, 7
Notes						
1	Price variation from Contract Signature is due to approved Contract Change Proposals (CCP), predominantly to progress the development and integration of ICS.					
2	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
3	Price variation from contract signature was to exercise the MSA Stage Two option.					
4	The contract has been re-evaluated as being a 'fixed' price because the contract value is 'fixed', plus price escalation.					
5	The contract price and scope were increased under CCP 078 to incorporate the LAND 200 Tranche 2 design work.					
6	Costs related to the LAND200 Tranche 2 design, procurement and installation will be funded by LAND200 (\$12.5m), while this project contributes \$2.0m primarily for the design, development and installation of the vehicle installation harnesses for Royal Australian Air Force (RAAF) and Protected Mobility Integrated Capability Assurance (PMICA) vehicles.					
7	The contract incorporates liquidated damages received during 2020-21 of \$6.2m via Contract Change Proposal 86.					
Contractor	Contracted Quantities as at		Scope		Notes	
	Signature	30 Jun 21				
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 below, 6 above	
Major equipment accepted and quantities to 30 Jun 21						

Defence received 10 pre-production baseline vehicles and five trailers from Thales Australia on schedule for the purpose of various test and evaluation activities under Stage One (Engineering and Manufacturing Development) of the LAND121 Phase 4 Acquisition Contract. Defence received an additional six pre-production baseline vehicles and four trailers for reliability testing, and verification & validation activities in Stage Two. **The Commonwealth has accepted 260 vehicles and 255 trailers as at 30 June 2021, which includes the 138 vehicles and 138 trailers required for Initial Materiel Release.**

Notes

1	The 16 test vehicles and nine test trailers for development and testing activities are in addition to the 1100 PMV-L and 1058 trailers.
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Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
Detailed Design	PMV-L and Trailer	Mar 16	N/A	Apr 16	1	1
	ICS	Jan 17	N/A	Dec 16	(1)	2
Preliminary Design	ICS	Sep 16	N/A	Sep 16	0	
Critical Design	PMV-L, Trailer and ICS	Apr 17	Aug 17	Oct 17	6	3
Support System Detailed Design (Operator)	Support System	Jun 17	Jun 18	Aug 18	14	4,5
Support System Detailed Design (Maintainer)	Support System	Jun 17	Jan 19	Jun 20	36	5,6
Notes						
1	The variance is caused by the Contractor's delay in closing out the action items.					
2	The Contractor and the project agreed to conduct the Review early, thus the early achievement. The Commonwealth approval of ICS Detailed Design Review Minutes of Meeting was achieved on 19 December 2016.					
3	The variance is due to the vehicle performance exceeding the number of critical failures allowable under RGT. Stage One (Engineering and Manufacturing Development) was extended by a four month period via CCP032 (executed 05 April 2017) to allow Thales Australia to remediate the critical failures and to undertake an additional RGT in order to fulfil the contractual requirements under Stage Two.					
4	The variance of Support System Detailed Design Review (SSDDR) of 14 months is due to the LRIP baseline not being ready for review until Critical Design Review exit in October 2017 and the contractor failed to meet the entry criteria in the SSDDR Checklist.					
5	The SSDDR was split into separate 'Operator' and 'Maintainer' reviews after the execution of CCP055 in November 2018 to align the training deliverables with the Introduction Into Service of the capability.					
6	An additional eight month delay to SSDDR (Maintainer) occurred due to delays in finalising the Hawkei Reliability Program, which impacted the finalisation of the Full-Rate Production vehicle baseline. The Commonwealth confirmed formal exit of SSDDR to Thales on 19 June 2020.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
Maintenance Demonstration	PMV-L, Trailer and ICS	Dec 16	Dec 16	Jul 17	7	1
Reliability Growth Trial (RGT)	PMV-L and Trailer	Mar 17	Jul 17	N/A	N/A	2
Reliability Demonstration Test (RDT)	PMV-L and Trailer	Feb 18	N/A	Nov 18	9	3
Development Test & Evaluation (DT&E)	PMV-L, Trailer and ICS	Mar 17	Sep 17	Sep 17	6	4
Initial Maintenance Evaluation	PMV-L, Trailer and ICS	Oct 17	Jan 18	Jun 18	8	5
Second Maintenance Evaluation	PMV-L, Trailer and ICS	Jan 19	N/A	Jul 19	6	5,6
Acceptance Verification and Validation (AV&V)	PMV-L, Trailer and ICS	Jun 18	Jan 19	Jul 20	25	7,8
Production Reliability Acceptance Test (PRAT)	PMV-L and Trailer	Jun 18	Jan 19	Jun 20	24	8,9
Low-Rate Initial Production (LRIP) Acceptance Last Batch	PMV-L, Trailer and ICS	Jun 18	Jan 19	Oct 19	16	7,8
Full-Rate Production (FRP) Acceptance Last Batch	PMV-L, Trailer and ICS	Oct 20	May 21	Jul 22	21	7,8,10
Notes						
1	The variance is due to the Commonwealth rejecting the first two versions of the Maintenance Demonstration Acceptance Verification Reports (AVR) submitted on 24 January 2017 and 30 March 2017. The approved version of the report was submitted to the Commonwealth on 01 June 2017, with the Notice of Approval signed on 03 July 2017.					
2	RGT was separated into the following three activities: <ul style="list-style-type: none"> RGT Number One was conducted over the period July to December 2016 and provided Thales with the opportunity to resolve any issues with the vehicles ahead of the formal trial activities that commenced under RGT Number Two. 					

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	<ul style="list-style-type: none"> RGT Number Two commenced in November 2016. In January 2017, the pilot Hawkei vehicles had exceeded the seven allowable critical failures under the contract. Identified key root causes include supplier quality issues and immature components affecting hardware and software integration. A six-week corrective action period was implemented to allow Thales to undertake engineering upgrades. RGT Number Three (May to July 2017) followed this, which demonstrated reliability improvements on a number of sub-systems, but a number of recurring failures were evident.
3	The RDT was introduced as a Contract Change to confirm that failures identified during the RGT had been rectified before entering into the Production Readiness Acceptance Test. The RDT will prove that the implemented solutions for Critical Failure and Effective Function Failure described in the Reliability Remediation Plan have been resolved to the Commonwealth's satisfaction. The nine months delay in completing RDT is due to the delay in remediating the outstanding reliability issues.
4	As part of the extension of Stage One (Engineering and Manufacturing Development), DT&E has also been extended to facilitate further development testing and to mitigate against the AV&V activities required under Stage Two (LRIP).
5	The approval of AVR for the Initial Maintenance Evaluation was delayed by seven months due to the initial submission of the report being rejected by the Commonwealth, primarily due to the incompleteness of the Interactive Electronic Technical Publication (IETP) presented by Thales Australia. A second Maintenance Evaluation (ME2) was conducted in September 2018 to ensure the changes requested by the Commonwealth from the Initial Maintenance Evaluation were incorporated into the IETP. The Commonwealth received the final report from Thales supporting the achievement of this activity on 21 June 2019. The Commonwealth approved the ME2 AVR on 03 July 2019.
6	Thales' compliance against the deficiencies identified in the ME2 AVR by the Commonwealth is part of finalising the Hawkei Full-Rate Production baseline and transition to Stage 3 (FRP).
7	AV&V has been delayed by 25 months due to the requirement to extend reliability testing, which impacted on the date that the LRIP vehicle build state was established between the Commonwealth and Thales. The delay in establishing the vehicle build state impacted on vehicle availability to conduct AV&V activities. The reliability issues, design maturity and production delays have further impacted the completion of AV&V. Sea, air and rail Verification and Validation activities were previously delayed by COVID-19 movement restrictions, but were completed prior to the declaration of IOC. The External Airlift Trial demonstrated the Hawkei can be airlifted under a CH-47. Further airlift trials will be conducted in 2021 to characterise the performance of the Hawkei under different operating parameters.
8	As part of the extension of Stage One (Engineering and Manufacturing Development), the start dates of some Stage Two (LRIP) and Stage Three (FRP) activities were delayed.
9	PRAT was finalised on 10 June 2020 with the Commonwealth's approval of the Integrated Reliability Maintainability and Testability Report from Thales Australia.
10	The final FRP batch delivery has been forecast for July 2022 due to vehicle uplift and the integration of interdependent capabilities onto the Hawkei. Misalignment between the Hawkei and interdependent project schedules are expected to delay the rollout to Army.

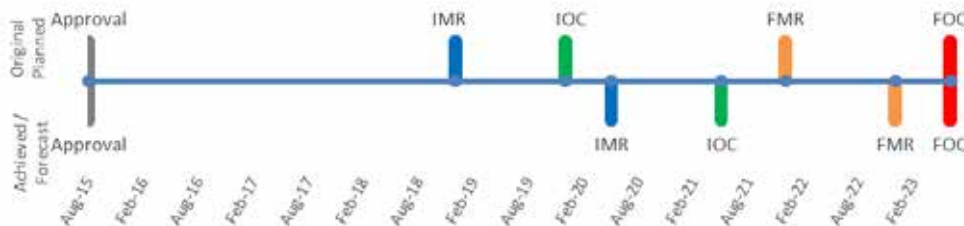
3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 18	May 20	17	1,2
Initial Operational Capability (IOC)	Dec 19	May 21	17	1
Final Materiel Release (FMR)	Dec 21	Dec 22	12	3
Final Operational Capability (FOC)	Jun 23	Jun 23	0	4

Notes

1	IMR was initially deferred by five months to enable the conduct of an additional vehicle reliability demonstration activity (four months) and the extension of Introduction into Service Training and the associated increase in vehicle deliveries (one month). IMR and IOC were re-scheduled by 12 months to May 2020 and December 2020 respectively, due to Hawkei reliability issues, design maturity and production delays caused by Steyr Motors entering voluntary administration. IOC was further deferred until June 2021, pending resolution of the vehicle safety incident. IOC was declared on 20 May 21.
2	IMR was declared with caveats in May 2020. These caveats have now been resolved.
3	FMR has been forecast for December 2022 due to vehicle integration dependencies. Please refer to note 10 of Section 3.2 above.
4	Any impact to FOC will be determined when the Hawkei Full-Rate Production capacity is established and the impact of the COVID-19 pandemic on Thales' global supply chain is understood.

Schedule Status at 30 June 2021

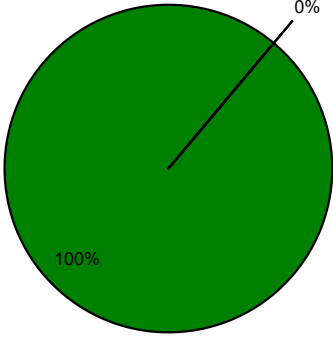


Note

Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

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. IMR was declared with caveats. As at 30 June 2021, all of these caveats have been resolved. IOC was declared in May 2021.
	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 Auditor-General's Independent Assurance Report.	

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR was achieved with caveats in May 2020. As at 30 June 2021, all of these caveats have been resolved. By IMR, the following will be delivered: <ul style="list-style-type: none"> 108 PMV-L and 108 Trailers to be delivered in accordance with the Force Generation Cycle; 22 PMV-L and 22 Trailers for Introduction Into Service Training (increased from 14 PMV-L and 14 Trailers); Eight PMV-L and eight Trailers for the conduct of Verification and Validation (V&V), and PRAT; and Logistics support arrangements, including Training, Supply and Maintenance Systems. 	Achieved
Initial Operational Capability (IOC)	IOC was declared in May 2021. Declaration of IOC was made by the Capability Manager following the conduct of a Battle Group sized Operational Test and Evaluation (OT&E) activity to validate the Hawkei Fundamental Input to Capability components.	Achieved
Final Materiel Release (FMR)	FMR is a future dated milestone projected for December 2022 . By FMR, the following will be delivered: <ul style="list-style-type: none"> 1100 PMV-L and 1058 Trailers; and Introduction Into Service (IIS) Training and transfer of IIS training packages. 	Not yet achieved
Final Operational Capability (FOC)	FOC is a future dated milestone projected for June 2023. Declaration of FOC will be made by the Capability Manager supported by the results of OT&E and confirmation by the Delivery Group (CASG) that the Fundamental Input to Capability components have been delivered as agreed. The FOC criteria are to be defined by the Capability Manager.	Not yet achieved

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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 Army's Directed Training Requirements (DTR) will not be met, affecting capability, cost, schedule and reputation.	<ul style="list-style-type: none"> This risk has been reclassified as an issue.
There is a chance that production delays from vehicle reliability, quality issues, and component availability will further delay the achievement of the Initial Materiel Release and Initial Operating Capability milestones.	<ul style="list-style-type: none"> Lower than expected production rate due to component availability and outstanding reliability issues has resulted in IMR and IOC being re-scheduled by 12 months. This is now disclosed as an issue in Section 5.2. There remains a risk that further issues will cause further delays to IMR and IOC. This risk has been downgraded as a result of the following actions: <ul style="list-style-type: none"> Commonwealth and supplier senior leadership engagement to maintain oversight of critical reliability and quality issues, responding to help needed, and resource requirements / prioritisation. Embed Commonwealth production and quality assurance representatives at the production line. Close engagement between the Project Office and Capability Manager to ensure the milestone requirements and capability delivery priorities are aligned. This risk has been retired following the declaration of IMR and IOC.
There is a chance that the Hawkei Full-Rate Production baseline will not fully meet the user's expectations, due to scope, budget and vehicle design constraints. This will impact on cost, schedule and reputation.	<ul style="list-style-type: none"> Conduct design traceability activities, in conjunction with the Capability Manager to validate scope and manage user expectations. The Commonwealth formally confirmed its position to Thales on the Hawkei Full-Rate Production baseline. The baseline will be submitted to the Commonwealth for approval at Full-Rate Production Readiness Review. This risk has been downgraded as the Hawkei design baseline is nearing finalisation and the user has increased confidence in the system being delivered. This risk has been downgraded and is no longer assessed as a major risk.
There is a chance that disruptions as a result of the COVID-19 pandemic will cause delays in the achievement of all project milestones	<ul style="list-style-type: none"> Project and Branch senior leadership continue to provide oversight and regularly engage with Thales leadership to review action plans. Close engagement between the Project Office and Capability Manager to ensure the milestone requirements and capability delivery priorities are aligned. This risk has been downgraded and is no longer assessed as a major risk.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
There is a chance that misalignment of interdependent project schedules to support Hawkei integration will delay the rollout to Army.	<ul style="list-style-type: none"> Thales Australia to complete an early Long Lead Time Item procurement for LAND4111 and LAND200 components. Establishment of a LAND200 communications suite that can be fitted with T1 or T2 radios.

5.2 Major Project Issues

Description	Remedial Action
Issues have arisen as a result of the IMR declaration with caveats.	<ul style="list-style-type: none"> Sea, air and rail Verification and Validation has been delayed due to COVID-19 movement restrictions. The outstanding activities are considered low-risk for compliance against the specification and will be finalised prior to IOC. The delivery of 30% of spares, consumables and Support and Test Equipment was initially delayed due to COVID-19 global supply chain impacts. Thales will provide internal production and warehouse stocks for any identified component shortfalls. The Hawkei mission system Complete Equipment Schedule (CES) has been published in draft for IMR, this represented a caveat to the IMR declaration. The fully approved CES will be published prior to IOC. An incomplete Hawkei Repair Parts Scale (RPS) has been published for IMR, this represented a caveat to the IMR declaration. The final RPS will be published prior to IOC.

	<ul style="list-style-type: none"> Project and Branch senior leadership continue to provide oversight and regularly engage with Thales leadership to review action plans. These caveats have been remediated and issues resolved.
Issues have arisen with the quantity of personnel required to undertake Hawkei Introduction Into Service Training to achieve Army's Directed Training Requirement (DTR) by FOC	<ul style="list-style-type: none"> Adjustment of training milestones in the MAA, as agreed to between the Project Office and the Capability Manager. Establishment of regional training teams to increase training throughput. Working group convened between the Project Office, Capability Manager and Army Logistic Training Centre to develop solutions to address the issue. Review to be undertaken by Q4 in 2021.
An issue has arisen as a result of the Hawkei safety incident involving brake functionality, which has resulted in a braking system design change to reduce the likelihood of further braking incidents.	<ul style="list-style-type: none"> On 23 November 2020, a Hawkei mission system was involved in a safety incident involving brake functionality. On 25 November 2020, Defence temporarily suspended the use of the Hawkei fleet. Thales Australia has developed a software fix to be incorporated into the Hawkei's 'Vehicle Control System'. Administrative controls have been put in place to prevent the issue from occurring until the software fix is implemented across the fleet by June 2022. With administrative controls in place, operating restrictions have been eased, enabling Hawkei rollout and vehicle acceptance to recommence. IOC was declared on 20 May 2021. This issue has been downgraded and is no longer a major issue.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
<p>Developmental Capability. The PMV-L is a technically complex development project that requires active engagement with the contractor, multiple interagency stakeholders and projects from other domains.</p> <p>Maintaining close collaboration and communication with all stakeholders is critical for understanding the technical requirements for a first-of-type capability, and facilitating proactive risk management and contingency planning.</p>	First of Type Equipment
<p>Adequate Resourcing. First-of-type projects contain significant levels of complexity and require substantial effort to fulfil the right balance of technical, performance, risk, cost and schedule requirements. Appropriate investment is required by projects and the contractor from the outset to ensure such requirements are not over-optimistically represented or underestimated.</p> <p>Projects operating in a developmental environment are to pay greater attention to workforce management and project governance. The project is also to frequently assess contractor resources, capabilities and capacity in the lead up and during project delivery.</p>	Governance Contract Management First of Type Equipment
<p>Support from External Subject Matter Experts. A number of external subject matter experts with vast Defence and commercial experience were engaged during Tender Evaluations and Negotiations, and the Acquisition Phase, for advice and to provide independent assessments of technical, commercial and financial matters.</p> <p>Active participation of external advisors during Tender Evaluations and Negotiations, and the Acquisition Phase, considerably improved the project's understanding and approach towards commercial, industry and programmatic issues. The Project should engage external Subject Matter Expertise during the Sustainment Phase to ensure the ongoing improvement and sustainability of a complex platform, and to seek efficiencies using a programmatic approach.</p>	First of Type Equipment
<p>Integrated ICS Team. The uncertainty in developing the ICS concept would have benefited from having an integrated and centralised team consisting of:</p> <ul style="list-style-type: none"> PMV-L project staff 	Resourcing Contract Management

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<ul style="list-style-type: none"> • Staff from other interrelated communication projects • Capability Manager specialists • External subject matter experts/contractors • Specialist staff such as engineers. 	
Vehicle Acceptance Resourcing and Planning. The early planning and generation of dedicated Commonwealth Production Liaison and Vehicle Acceptance staff (and processes) enables improved planning in conjunction with the OEM for Vehicle Acceptance and QA processes. This improves transition from design into the production and vehicle acceptance stage of the program.	Contract Management Governance Resourcing
Hawkei Reliability Growth. Reliability programs must incorporate sufficient schedule for reliability growth of the capability to set the conditions for a successful outcome. Reliability fixes must be supported by Objective Quality Evidence before proceeding to the next reliability test.	Schedule Management Requirements Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	MAJGEN Andrew Bottrell
Branch Head	BRIG John-Paul Ouvrier

Project Data Summary Sheet¹⁵⁴

Project Number	AIR8000 Phase 2
Project Name	LIGHT TACTICAL FIXED WING
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Apr 12
Government 2nd Pass Approval	Apr 12
Budget at 2 nd Pass Approval	\$1,156.5m
Total Approved Budget (Current)	\$1,426.1m
2020-21 Budget	\$40.7m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project was approved to replace the retired Caribou capability and provide an enhanced intra-theatre and regional airlift capability through acquisition of a fleet of ten new C-27J aircraft.

Project acquisition includes the ten aircraft, a training system, support system materiel elements, and three years of initial training and support services from the aircraft In-Service Date (ISD), through Initial Operational Capability (IOC) and Final Operating Capability (FOC).

The aircraft was operated by 35 Squadron at its Interim Main Operating Base (MOB) at Royal Australian Air Force (RAAF) Base Richmond and is now operated from its Final MOB at RAAF Base Amberley.

To date the project has delivered 10 aircraft, the initial training, **system** support services, an interim training system, and the support system materiel elements.

Government agreed in 2016 to delay FOC to 2019 and accept mature training system and Structural Substantiation Project (SSP) deliverables beyond FOC.

During 2020 Defence completed a capability revalidation activity for the C-27J. The outcomes have resulted in changes to the capability definition which are incorporated into updated arrangements between responsible units. Operational use of the aircraft is pivoting from Battlefield Airlifter to Light Tactical Fixed Wing (LTFW) capability with minor changes to acquisition scope for the simulator. A Missile Approach Warning system study informed the LTFW decision.

Future deliveries include a less complex flight training device simulator, various training aids, contracted training services, and outcomes from the Structural Substantiation Program.

1.2 Current Status

Cost Performance

In-year

The end of financial year **variance of \$5.0m is due to** lower than forecast FMS spend, delays in longer lead time spares deliveries **and reduced contractor support requirements for the project. These cost variances were offset by early achievement of Mode/IFF milestones.**

Project Financial Assurance Statement

As at 30 June 2021, **project** AIR8000 Phase 2 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 of **Defence** 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 revised scope.**

Contingency Statement

The project has not applied contingency in the financial year.

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

AIR8000 Phase 2 was originally approved as Battlefield Airlift – Caribou Replacement. Since Air Force advised of capability change in December 2019 the project has been managed and is reported as Light Tactical Fixed Wing. The remainder of this report will refer to AIR8000 Phase 2 Light Tactical Fixed Wing.

Schedule Performance

Initial Materiel Release (IMR) and IOC were declared with caveats in December 2016. The IOC declaration encompassed the materiel caveats described by the project at IMR. FOC at end of 2017, as originally planned, was unachievable as a result of: Leonardo aircraft production delays associated with the transfer of the fuselage assembly line; the delayed start to US-based training in 2014; reduced training throughput due to aircraft availability; and **commensurate** delays associated with establishing facilities at the Main Operating Base at RAAF Base Amberley. Under a revised schedule agreed by Government in 2016, FOC was to be achieved by December 2019 (24 months behind original schedule), noting the capability would continue to mature beyond FOC, including delivery of the mature training system. Final Materiel Release (FMR) was not achieved in October 2019, and FOC was not declared in December 2019.

The key activities in 2020-21 were approval by Government of a Defence submission proposing an operational capability pivot from Battlefield Airlift to Light Tactical Fixed Wing; and the resulting project re-scoping and rescheduling activities resulting in an updated Materiel Acquisition Agreement (MAA). Government's LTFW decision advised FOC was to be achieved in FY2021-22.

Other activities in 2020-21 included the acceptance into service of a Fuselage Training device (FuT), contract award to Leonardo for a Virtual Maintenance Trainer, and commencement of the Leonardo flight loads test program as part of the Structural Substantiation Project. Contracting for the simulator continues following a revision of simulator scope following the capability pivot to LTFW.

Materiel Capability Delivery Performance

The C-27J aircraft is a relatively mature and well tested **in production aircraft**. Notwithstanding, the project office **has been** working through a number of capability considerations identified post-establishment of the **acquisition arrangements**. These baseline issues are associated with the configuration and certification status of the USAF JCA C-27J program, which were not finalised by the USAF at the time of divestiture. All ten aircraft have been accepted, with the last aircraft accepted in December 2017.

Following Defence's capability revalidation activities in 2020, Air Force and CASG have analysed the outcomes to reshape the materiel delivery program resulting in acquisition of a less complex flight simulator and a change in aircraft operational profile – an option that was forecast at project approval. The capability will continue to mature post a revised FMR in 2021-2022.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

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.

On 10 May 2012 Government announced it had approved the purchase of ten C-27J battlefield airlift aircraft via FMS from the US Government to replace the Caribou aircraft, at a total program cost of up to A\$1.4 billion.

Leonardo manufactured the C-27J Military Industrial Baseline Aircraft configuration which was then flown to the US for modification. **L-3 PID modified the aircraft to the US JCA configuration adding selected military equipment to improve the platform's Battlefield Airlift capabilities.**

The USAF's potential to divest the C-27J was a known consideration that was factored into the business case presented to and approved by Government at project combined First and Second Pass in April 2012. In early 2013 the USAF confirmed its intention to divest their C-27J fleet and accelerated its schedule for withdrawal. Subsequently, in mid-2013, the USAF advised that it would not complete Military Type Certification (MTC) and that L-3 PID was, contrary to earlier advice, required by the Air National Guard to vacate the facilities occupied by the C-27J training school located at Robins Air Force Base, Georgia USA. This resulted in a late notice requirement for relocation of the L-3 training school to L-3 facilities in Arlington and Waco, Texas, which resulted in a three-month delay to ISD (achieved June 2015).

Military Type Certification (MTC) was leveraging the Federal Aviation Authority civilian certification and USAF work completed at the time of its decision to cease its MTC. The USAF decision not to complete MTC has materially increased the cost, effort and schedule risk associated with the project achieving MTC. The Commonwealth has secured significant Intellectual Property licensing rights to technical data from Leonardo and L-3 PID to aid in MTC and through-life support of the C-27J. A MTC **covering basic flight operations** was achieved in June 2020 **albeit with some technical limitations which are the subject of further work.**

Training Systems were impacted by the USAF's inability to acquire a suitable system for the Commonwealth. Consequently, the decision was made to manage and undertake training in Australia and acquire the mature training system via commercial arrangements. The accepted Interim Training System currently offers training to aircrew and maintenance personnel at a dedicated training facility at RAAF Base Amberley and in Italy.

Defence continues to build a close commercial and working relationship with Leonardo S.p.A., the original equipment manufacturer of the C-27J Spartan. In early 2019, Defence established a four-person C-27J Resident Project Team, located in Leonardo's facilities in Turin, Italy. This has contributed to the Project retiring numerous Risks and Issues associated with contracting, delivery of spares and support, Government approved aircraft upgrades, and OEM technical support. **Following the LTFW decision the Resident Project Team was reduced to three persons.**

The project was unable to achieve FOC as planned during 2019. Defence has formally advised Government of the inability to achieve FOC and **provided capability revalidation outcomes to the project for implementation. The capability revalidation outcomes have revised the capability, deliverables, schedule, and substantially reduced the risk profile for the project. The capability is pivoting operationally from Battlefield Airlifter to Light Tactical Fixed Wing capability with redefined aircraft training devices suitable for the LTFW role as it is currently configured.**

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Uniqueness
The C-27J is a mature aircraft acquisition requiring 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 4 IFF system.
The uniqueness of the project can be measured by;
1. 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.
2. The degree of IFF system upgrade activities from Mode 4 to Mode 5 on a delivered in-service sustainment product that are required to meet project outcomes given the limited availability of an off-the-shelf design for the C-27J platform globally.
Major Risks and Issues
The 2012 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.
The current major project residual risks after the Air Force 2020 capability revalidation outcome activities are as follows:
Training System. As a result of the capability revalidation outcomes, delivery of the Fuselage Trainer, the project established and transitioned training management to AMG and 35 Squadron.
COVID-19. To mitigate impact, the project transitioned to video conferencing meetings to connect project personnel working remotely and also implemented video conferencing with Italian and American partners to continue progressing project outcomes and collaborations.
Final Training Systems. The revised training devices and services requirements from the capability revalidation activity may be impacted by delays in contracting, contractor delivery performance, and Defence support organisation performance, impacting training schedule achievement.
Capability Definition. There is a risk that continued uncertainty during 2020 and early 2021 in the required AIR8000 Phase 2 capability will impact project cost, schedule, and scope. Air Force advised submission regarding role change to LTFW supported by Government. Subsequently detailed LTFW capability and deliverables agreed between stakeholders.
Other Current Related Projects/Phases
N/A
Note
Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Apr 12	Original Approved (Second Pass Approval)	1,156.5	
Nov 19	Real Variation - Transfer	(1.0)	4
Jun 21	Exchange Variation	270.5	
Jun 21	Total Budget	1,426.1	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - US Government	(659.5)	1
	Contract Expenditure - Leonardo - Flight Loads Test Program	(7.6)	
	Contract Expenditure - Leonardo - Avionics Risk Reduction Activity	(6.5)	
	Contract Expenditure - Leonardo Intellectual Property and Technical Data	(72.1)	1
	Contract Expenditure - Leonardo - Structural Substantiation Program (Fuselage)	(18.6)	1
	Contract Expenditure - Leonardo - Mode 5 IFF Upgrade	(18.5)	1
	Contract Expenditure - Leonardo - Management of Services	(5.3)	
	Other Contract Payments/Internal Expenses	(119.3)	2
		(907.3)	
FY to Jun 21	Contract Expenditure - Leonardo - Flight Loads Test Program	(6.0)	1
	Contract Expenditure - Leonardo - Avionics Risk Reduction Activity	(9.4)	1
	Contract Expenditure - Leonardo - Mode 5 IFF Upgrade	(3.2)	1
	Contract Expenditure - Leonardo - Management of Services	(6.6)	1
	Other Contract Payments/Internal Expenses	(10.4)	3
		(35.6)	
Jun 21	Total Expenditure	(942.9)	

Jun 21	Remaining Budget	483.1
Notes		
1	The scope of these contracts is explained further in Section 2.3 – Details of Project Major Contracts.	
2	Other expenditure comprises: Support and Test Equipment, spares and global freight costs (\$61.3m), contractor support costs for Structural Substantiation Program, loadmaster seat development, aircraft modification and certification purposes (\$31.3m), training devices related procurement and support costs (\$7.6m), and other project management support and administrative costs (\$19.1m) contribute to the other expenditure.	
3	Other expenditure comprises: Support and Test Equipment, spares and global freight costs (\$2.0m), contractor support costs for Structural Substantiation Program, loadmaster seat development, aircraft modification and certification purposes (\$4.1m), training devices related procurement and support costs (\$0.8m), and other project management support and administrative costs (\$3.5m) contribute to the other expenditure.	
4	Transfer to Defence Science and Technology Group for the provision of ongoing contractor technical support for the Structural Substantiation Program.	

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
66.9	41.7	40.7	PBS - PAES: The variation is primarily due to a combination of adjustments to training device , structural substantiation program, contractor support requirements, aircraft updates, certification and other minor changes. PAES - Final Plan: Variance is due to foreign exchange updates to Project Approval
Variance \$m	(25.2)	(1.0)	Total Variance (\$m): (26.2)
Variance %	(37.7)	(2.4)	Total Variance (%): (39.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	The end of financial year variance of \$5.0m is due to lower than forecast FMS spend, delays in longer lead time spares deliveries and reduced contractor support requirements for the project. These cost variances were offset by early achievement of Mode/IFF milestones.
		(1.1)	Foreign Industry	
			Early Processes	
		(3.5)	Defence Processes	
		(0.4)	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
40.7	35.6	(5.0)	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 21 \$m			
US Government	May 12	882.4	664.1	Reimbursement	FMS	1,2,3
Leonardo IP Technical Data	May 12	62.0	72.1	Firm Price	Standard Defence Contract	1
Leonardo Mode 5 IFF	Sept 17	18.7	24.2	Firm Price	Standard Defence Contract	1,4
Leonardo Aircraft Fuselage Test Article	Dec 17	16.9	18.7	Firm Price	Standard Defence Contract	1,5
Leonardo Management of Services	Feb 19	27.4	27.6	Firm price	Standard Defence Contract	1
Leonardo Flight Loads Test Program	Mar 19	19.8	19.9	Firm price	Standard Defence Contract	1
Leonardo Avionics Risk Reduction	Sept 19	16.2	16.5	Firm Price	Standard Defence Contract	1
Notes						
1	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
2	Amendment 4 to FMS case AT-D-SGU was approved in May 2017 reducing the case value to USD655.5m. 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.					

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3	Amendment 5 to FMS case AT-D-SGU was approved on 2 July 2018 reducing the FMS Case value to USD617.7m. The Amendment releases further management reserve funding no longer required under the case. The amendment also reflects the CoA's intention to close the case early. Amendment 6, was approved in May 19 and has further reduced the FMS case to a value of USD601.9m. There were no amendments to the case in the 2020-21 financial year. The change to the contract value from the prior year is due to foreign exchange movements.			
4	Mode 5 IFF upgrade contract. Contract Change 1 was approved in October 2018 updating the milestone payment schedule introducing new maintenance related activities and DASR certification requirements.			
5	Aircraft Fuselage Test Article Contract Change 1 was approved November 2019 adding additional production requirements to address shortfalls found in initial reviews of the test article deliverables.			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 21		
US Government	10	10	10 C-27J Aircraft and associated training, training equipment, spares, ground support equipment and initial support	
Leonardo-IP Technical Data	N/A	N/A	C-27J Intellectual Property and Technical Data	
Leonardo Mode 5 IFF	10	10	Mode 5 IFF modification for 10 C-27J aircraft	
Leonardo Aircraft Fuselage Test Article	1	1	Aircraft Fuselage procurement in support of C-27J Structural Substantiation Program	
Leonardo Management of Services	N/A	N/A	Provision of Project Management Services in support of the Enduring Leonardo Contract (ELC)	
Leonardo Flight Loads Test Program	1	1	Provision of a Flight Loads Test Program in support of the C-27J Structural Substantiation Program	
Leonardo Avionics Risk Reduction	N/A	N/A	Provision of risk reduction activities in support of development of the C-27J Avionics Block Upgrade.	
Major equipment accepted and quantities to 30 Jun 21				
Ten aircraft including supplies, support and test equipment, a fuselage trainer, SSP fuselage and wing test articles have been accepted plus a substantial amount of the IP rights and Technical data including Avionics Risk Reduction information. The six month long SSP Flight Loads Test Program to obtain data for static testing commenced in Italy for completion in FY 2021-22.				
Notes				
1	N/A			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Flight Training Device	TBA	TBA	TBA	TBA	1,2
Preliminary Design	Flight Training Device	TBA	TBA	TBA	TBA	1,2
Critical Design	Flight Training Device	TBA	TBA	TBA	TBA	1,2
Notes						
1	Contracts for the acquisition of the Operational Flight Trainer device have yet to be established. Training devices are not included in the revised FOC definition approved by Government in May 2016. Work was completed for the installation and maintenance for the Fuselage Trainer through L-3 Oceania. No design process is required for the Fuselage Trainer as a decommissioned US-based system was acquired for refurbishment by the Commonwealth from L-3 Oceania.					
2	The project completed tender evaluation of the Leonardo Full Flight Mission Simulator and advised Leonardo the proposal was unsuitable. As of 30 June 2021 and as a result of the capability revalidation outcomes, collaborative development of detailed requirements for a reduced scope Flight Training Device acquisition has resulted in a refined Statement of Work submission to Leonardo S.p.A. Final contract negotiations are anticipated by March 2022.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved /Forecast	Variance (Months)	Notes
System Integration	Flight Training Device	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	May 20	N/A	Dec 20	7	1,6,7
Acceptance	C-27J Aircraft 1 (A34-001)	Jul 14	N/A	Nov 14	4	
	C-27J Aircraft 2 (A34-002)	Sep 14	N/A	Dec 14	3	
	C-27J Aircraft 3 (A34-003)	Nov 14	N/A	Aug 15	9	3
	C-27J Aircraft 4 (A34-004)	Feb 15	N/A	Mar 16	13	4
	C-27J Aircraft 5 (A34-005)	Aug 15	N/A	Aug 16	12	5
	C-27J Aircraft 6 (A34-006)	Oct 15	N/A	Nov 16	13	5

	C-27J Aircraft 7 (A34-007)	Dec 15	N/A	Mar 17	15	5
	C-27J Aircraft 8 (A34-008)	Feb 16	N/A	Aug 17	18	3,5
	C-27J Aircraft 9 (A34-009)	Apr 16	N/A	Oct 17	18	3,5
	C-27J Aircraft 10 (A34-010)	May 16	N/A	Dec 17	19	3,5
	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	May 20	N/A	Dec 20	7	1,6,7

Notes

1	The acquisition contract for the Fuselage Trainer was established on 29 July 2019. The Fuselage Trainer was a commercial off the shelf purchase, no design reviews were required. Contracts for the acquisition of the remaining training devices are under development.
2	See Section 3.1 Note 2.
3	Delivery of Aircraft was delayed due to the requirement for repair of the life raft door following damage sustained during the acceptance test flight, and the requirement for delivery of minor waiver data to support aircraft acceptance (later rectified through a contract change proposal).
4	Delivery of Aircraft 4 was delayed due to availability of required spares from Leonardo to rectify a number of discrepancies and the prioritisation of aircraft components for use on other aircraft.
5	Leonardo's decision to close its Naples fuselage production facility and consolidate all C-27J production at its Turin facility resulted in a delay to delivery of Aircraft 5 through 10. However, Leonardo's production consolidation was beneficial to the overall production of aircraft. From Aircraft 5, there were considerable improvements in aircraft build quality and the project was able to recover some lost production schedule. Improvements continued as a result of Leonardo's consolidation decision and management of its supply chain.
6	Variance due to delays in shipment of the Fuselage Trainer from the United States (e.g. quarantine delays), and delayed completion of installation activities and documentation. Acceptance was planned to be completed by May 20 prior to COVID-19.
7	COVID-19 travel restrictions came into force in March 20 immediately prior to the commencement of formal acceptance testing which was paused subject to interstate travel restrictions. Once travel restrictions were lifted, there was 2 months of activity to achieve acceptance.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

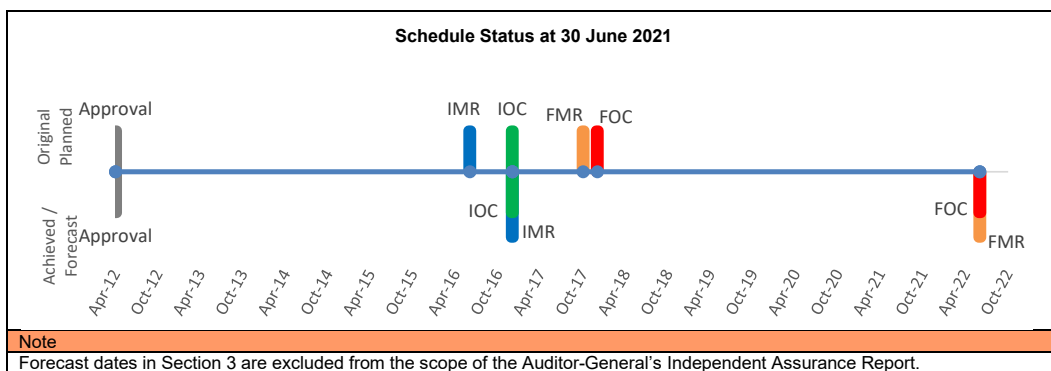
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Mar 15	Jun 15	3	1
Initial Materiel Release (IMR)	Jun 16	Dec 16	6	2
Initial Operational Capability (IOC)	Dec 16	Dec 16	0	3
Final Materiel Release (FMR)	Oct 17	Jun 22	57	4,5
Final Operational Capability (FOC)	Dec 17	Jun 22	54	4,5

Notes

1	Variance due to delays in establishing FMS support and training arrangements in the US.
2	Variance due to delay in delivery of Aircraft and adequate support. IMR was declared with caveats relating to deficiencies in supply support and training courseware.
3	IOC was declared with caveats in December 2016 with four aircraft delivered to Australia. The IOC caveats encompassed the limitations described by the project at IMR, which have been resolved.
4	Variance due to delays in aircraft production and construction of facilities at RAAF Amberley. In 2016 and in 2020 Government agreed to delay Final Operating Capability (FOC) which is now set to be achieved in FY 2021-22. In 2020 Air Force advised CASG of the capability revalidation outcomes for the project which re-defined FMR and FOC. The project is progressing in accordance with the revised MAA.
5	Defence formally proposed revised C-27J capability options and FMR/FOC schedule to Government after reviewing available options during 2020. The revalidated FMR and FOC requirements are; 10 aircraft modified with an upgraded IFF system; all supplies; all support, test and role equipment; all publications; a fuselage trainer; a landing gear and a propeller training aid; aircrew training services; acceptance of Structural Substantiation Program items; updated Type Certificate; and ability to conduct revised capability roles and missions. Post FOC scheduled deliveries include; a flight training device; an engine training aid; a Virtual Maintenance Training system; Mode 5 IFF software update; Avionics Safety of Flight update; an updated Type Certificate; and final Structural Substantiation Program outcomes. Progress as of 30 June 2021 is; 10 aircraft delivered; all support, test and role equipment; all publications; accepted the fuselage trainer and the Structural Substantiation Program test articles. The project continues activities to complete all outstanding requirements.

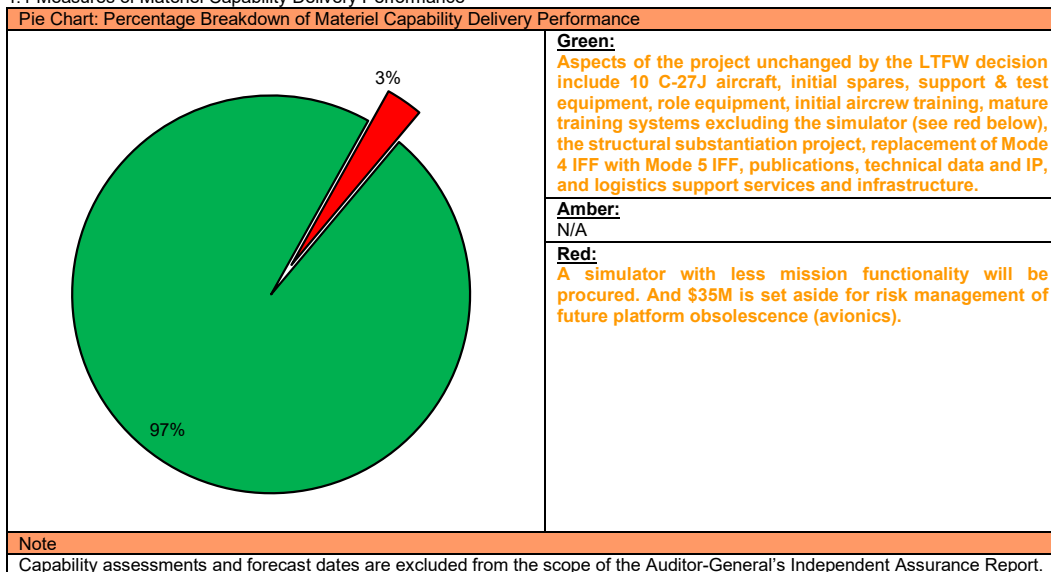
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Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

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. Caveats were resolved Quarter 2 2017.	Achieved
Initial Operational Capability (IOC)	Initial operations from interim Main Operating Base (MOB) (RAAF Richmond). Three C-27J aircraft delivered to the Interim MOB with sufficient operational crews, maintenance teams, training, and support infrastructure. The squadron will conduct air logistics support and airborne operational roles.	Achieved
Final Materiel Release (FMR)	The project was unable to achieve FMR was forecast for October 2019. Defence will inform Government of a revised schedule and requirements after reviewing available options during 2020.	Not yet achieved

	The project is executing activities towards the revised FMR date of June 2022. Key FMR requirements include delivery of all 10 aircraft delivered to RAAF Amberley with the upgraded Mode 5 IFF fitted, all supplies identified in FMS/DCS, all S&TE and role equipment, publications and technical data/IP, the Fuselage Trainer and selected training aids and training service contracts, and acceptance of test article and flight loads plans to support SSP.	
Final Operational Capability (FOC)	<p>The project was unable to achieve FOC as forecast for December 2019. Defence has formally advised Government of the inability to achieve FOC and proposed a revised FOC schedule to Government after reviewing available options during 2020.</p> <p>The project is executing activities towards the revised FOC capabilities and schedule of June 2022.</p> <p>The ability to conduct effective and sustained Operations, Roles and Missions. 10 C-27J Aircraft operating from RAAF Amberley. All 10 aircraft fitted with Mode 5 IFF. Mature operational support, maintenance and training system. Infrastructure to support LTFW operations.</p>	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
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. Specific challenges included Avionics Upgrade and the Full Flight Mission Simulator which impacted project budget and schedule.	Following Air Force advice in relation to capability revalidation outcome, and approval of an updated MAA, the risk to the project regarding scope, schedule, and cost is very low. A simpler simulator will be procured on an accelerated timeframe, and a smaller avionics upgrade focused on reducing operational risk will be investigated. Clarity has also been provided in relation to the additional training aids and training services required as part of the final training system. Accordingly, this risk is downgraded to Medium.
Training. Delays in establishment of contracts between the US Government and L-3 has impacted the training schedule and student throughput. The courseware standard delivered required active involvement by the Commonwealth to implement ongoing improvements and meet perceived gaps in US based training.	<p>The project transitioned training from the USA to RAAF Richmond in July 2017, with the simulator element undertaken in Italy. Continuity of training leading up to cessation in the US was actively managed, planned and tested to ensure continuity without impact to capability.</p> <p>During 2016-17 the Government agreed that alternative approaches to FMS were required. The project continues to investigate opportunities to deliver a mature training system at RAAF Amberley. Work is in progress to procure the Operational Flight Trainer through the Enduring Leonardo Contract. An opportunity to procure a Fuselage Trainer was entered into with L-3 Oceania for delivery in 2019-20. These activities will form the basis of mature training system delivery post-FOC.</p> <p>The Estate and Infrastructure Group has completed construction of the Training Support Facility at RAAF Amberley, and the facility was accepted by the project in February 2018.</p> <p>As a result of the capability revalidation outcomes, delivery of the Fuselage Trainer, the project established and transitioned training management to AMG and 35 Squadron. The mitigations have been effective in managing this risk.</p>
COVID-19. Project Engineering, Training, SSP, contracting, and IFF Mode 5 activities will be affected by the COVID-19 pandemic (control orders, isolations, shut downs) leading to an impact on achievement of project milestones.	<p>The project transitioned to a series of routine video conferencing meetings to connect project personnel working remotely and also implemented video conferencing with Italian and American partners to continue progressing project outcomes and collaborations.</p> <p>The project explored COVID-19 impacts with contractors and addressed schedule and milestone expectations with contractors in an attempt to reduce the COVID-19 impact.</p>

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	As a result of implemented management and business routines COVID-19 impacts have been minimised so far a reasonably practical and addressed as business as usual criteria to consider, this overall profile of this risk has reduced.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
Final Training Systems. The revised training devices and services requirements from the capability revalidation activity may be impacted by delays in contracting, contractor delivery performance, and Defence support organisation performance, impacting training schedule achievement.	The capability revalidation activity has provided clarity on the scope of training devices and services needed for the final training system. Medium risks remain in relation to supplier contracting and delivery schedule performance; and in achieving Defence approvals for IT systems and support to hardware procurement. These are being actively managed by the project.
Capability Definition. There is a risk that continued uncertainty during 2020 and early 2021 in the required AIR8000 Phase 2 capability will impact project cost, schedule, and scope.	Air Force advised submission regarding role change to LTFW supported by Government. Detail definition of LTFW capability agreed with Air Mobility Group and Air Force Head Quarters stakeholders, as a result this risk will be closed.

5.2 Major Project Issues

Description	Remedial Action
USAF Divestiture of C-27J. The USAF C-27J divestiture has had a greater than anticipated impact on project budget and schedule. Accelerated USAF divestiture resulted in incomplete Military Type Certification (MTC) by the USAF with unanticipated impact on airworthiness and training outcomes.	Completion of MTC has required additional Project resourcing to achieve FOC on schedule. MTC was achieved in June 20. The delayed start to training in the US translated to a three month delay to achievement of the planned In-Service Date at 35 Squadron. Finalisation and closure of the US-based initial training system has occurred and the interim training system was established in Australia in July 2017. The capability revalidation activity has provided clarity to remaining project scope, schedule, and cost. Thus this issue is retired.
FMR/FOC requirements. The C-27J Capability will be affected by the inability to complete all requirements on schedule (MTC, IFF mode 5 and spares).	The capability revalidation activity has provided clarity to remaining project scope, schedule, and cost. Thus this issue is retired.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
The level of risk and complexity contained in an FMS Letter of Offer and Acceptance is often understated and poorly understood. Whilst an FMS program for in production equipment and associated support affords a number of advantages, the transfer of a significant amount of project and technical management to the US Government implementing agency, and the weak bargaining position of the Commonwealth, increases the project's exposure to technical, schedule and cost risk. For an FMS program the level of Commonwealth contract and financial management involvement and oversight of industry is very low in comparison to that mandated for Direct Commercial Sale contracts, yet both procurement methods confront similar issues. This accords the FMS customer a 'Best Endeavours' approach to business. Adequate Commonwealth participation in key project management and technical oversight activities in the US, as provided for in the Government Combined First and Second Pass submission, is critical to providing the necessary level of project and contract management. In the case of C-27J, divestiture has further accentuated project risk and complexity, increasing the need for ongoing engagement of the USAF FMS program office and L-3 PID to ensure Commonwealth requirements and risks are adequately understood and managed. The planned downsizing and closing of the USAF's project office and cessation of USAF C-27J activities and contracts further reduces the ability of the USG to achieve customer requirements normally delivered under the FMS system. This drives the Commonwealth's approach to deliver certain outputs via Direct Commercial Sales.	Contract Management

<p>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 counterproductive 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 AIR8000 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.</p>	Resourcing
<p>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 AIR8000 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.</p>	Off-The-Shelf Equipment
<p>Contracting with commercial entities that have had no previous experience with how the Commonwealth contracts, manages, controls, and reviews contract performance requires significant awareness, education and adjusting by both parties. Commonwealth acknowledgement that outcomes can be achieved without following the Commonwealth's usual or embedded processes requires substantial effort by Commonwealth personnel to accept the change, mentor and educate other Commonwealth entities, and to act with restraint towards the contractor. Commonwealth personnel having largely only worked with or in one system, the Commonwealth system, and are challenged to accept other ways to achieve the same outcome.</p> <p>Similarly, processes judiciously established in Defence are not always easily mapped to a civilian entity's system. This requires substantial detailed communication and time commitment to map dissimilar system outcome points between the two organisations' systems by Subject Matter Experts in that field - this takes time and effort that may not have been foreseen.</p>	Contract Management
<p>Although C-27J is a mature in production aircraft the project was required to update a number of systems to achieve the directed outcomes for FMR/FOC.</p> <p>Where a project has a challenging acquisition and implementation period, the Sponsor and Capability Manager must be closely engaged to ensure the requirements set maintains relevance over time, especially leading up to key capability milestones.</p>	Requirements Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	AVM Gregory Hoffmann
Branch Head	AIRCDRE Graham Edwards

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Project Data Summary Sheet¹⁵⁵

Project Number	LAND19 Phase 7B
Project Name	SHORT RANGE GROUND BASED AIR DEFENCE
First Year Reported in the MPR	2020-21
Capability Type	Replacement
Capability Manager	Chief of Army
Government 1st Pass Approval	Feb 17
Government 2nd Pass Approval	Feb 19
Budget at 2nd Pass Approval	\$1,274.3m
Total Approved Budget (Current)	\$1,201.0m
2020-21 Budget	\$167.5m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

<p>LAND19 Phase 7B Short Range Ground Based Air Defence (SRGBAD) Project will introduce into service the Army-operated component of the Integrated Air and Missile Defence (IAMD) capability to achieve an enhanced Ground-Based Force Protection system.</p> <p>The primary objectives of the project are to deliver a scalable SRGBAD capability that can sense, warn, manage and counter weapons and sensor effects of fixed and rotary wing platforms, unmanned aerial systems (UAS), stand-off weapons, Rocket Artillery Mortar (RAM) and missiles within the required environments.</p> <p>The capability being acquired is an enhanced version of the jointly developed Raytheon-Kongsberg National Advanced Surface to Air Missile System (NASAMS), which is currently in-service with a number of nations. The capability is being acquired through a contract with Raytheon Australia.</p> <p>Two NASAMS Batteries are being acquired, each consisting of three Fire Units, with additional sub-systems for training purposes. A single Fire Unit consists of missile launchers, sensors, and a command & control centre, and is capable of protecting a specified area from a range of airborne threats. A single battery is capable of meeting the operational requirements, with the second battery being used for training purposes.</p>
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1.2 Current Status

<p>Cost Performance</p> <p><u>In-year</u></p> <p>As at 30 June 2021, financial year 2020-21 expenditure was \$172.3m against a budget of \$167.5m. The EOFY expenditure is in line with the forecast, with only minor variations.</p> <p><u>Project Financial Assurance Statement</u></p> <p>As at 30 June 2021, project LAND19 Phase 7B has reviewed the approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations of Defence, 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.</p> <p><u>Contingency Statement</u></p> <p>The project has not applied contingency funds in the financial year.</p>
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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 Review Report by the Auditor-General* in **Part 3** of this report.

Schedule Performance

The project has completed the design phase for NASAMS during 2020, with successful completion of the Detailed Design Review on schedule in December 2020.

There have been delays in the provision of some items of Government Furnished Materiel (GFM) to Raytheon Australia, primarily due to longer than anticipated export approvals. Despite mitigation strategies, these delays have created a risk of future schedule delays and associated cost increases.

The project is also facing a high risk of future delays to major program milestones (notably Initial Operating Capability (IOC), due to the impact of COVID-19. The international travel restrictions in place between industry partners in Australia, Norway and the US have prevented effective collaboration, integration and test activities throughout 2020 and into 2021. When combined with GFM delays, this has transferred technical risk to later parts of the project, compressing planned activities and increasing the likelihood of rework.

The Final Operating Capability (FOC) remains on schedule, despite the risk of delays to IOC.

Materiel Capability Delivery Performance

The project is on track to deliver against all agreed capability outcomes for the Final Operating Capability.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

LAND19 Phase 7B was one of the first projects to be considered under the new Capability Life Cycle, and the Smart Buyer framework was still being defined at this time. The project participated in a pilot Smart Buyer workshop, and the principles identified in this were applied as part of the First Pass Approval process. This workshop identified risk in financial, requirements, integration, and schedule components of the project. These risks were subsequently considered as part of the project's acquisition strategy, and addressed in the Risk Mitigation Activity (RMA) between First Pass and Second Pass.

The project received First Pass Approval from Government in February 2017. This approval included release of a Single Supplier Limited Tender to Raytheon Australia as Prime Systems Integrator (PSI) for the acquisition and sustainment of the SRGBAD capability, as well as for the conduct of a RMA between First Pass and Second Pass to reduce technical risks associated with system integration and assess the environmental durability of key sub-systems. This approval also included direction to investigate the Canberra-based company CEA Technologies' (CEA) sensors for use in a ground-based air defence environment between First Pass and Second Pass.

The preferred capability option presented at Second Pass was based on the NASAMS baseline but with significant enhancements. This option provided an enhanced capability, addressed obsolescence risks, provided greater Australian industry content, and as a result was assessed as being better value for money. This option was approved by Government in February 2019. The following major procurement activities have since occurred:

- Contract signature was achieved with Raytheon Australia as PSI in June 2019;
- Contract signature was achieved with CEA Technologies for the provision of operational and tactical radars in November 2019;
- The Foreign Military Sales (FMS) offer for the purchase of missiles was accepted by the Commonwealth in March 2020;
- Contract signature was achieved with Raytheon Australia as the Support Contractor in December 2020.

Uniqueness

NASAMS is an established and mature ground based air defence capability, however under LAND19 Phase 7B, Defence is undertaking a number of enhancements, which make it unique. The most significant of these is replacing the standard NASAMS radar with radars from Australian company CEA Technologies. Other modifications, which are not common across the international user base, include integration with Army in-service vehicles and radios and interfacing with existing Land and Joint information networks.

Major Risks and Issues

The project is currently managing the following major risks:

- Inability to conduct integration and test activities due to COVID-19 international travel restrictions, resulting in technical faults during acceptance testing, schedule variation and increased cost; and
- A heavily constrained operational test and evaluation timeline.

Other Current Related Projects/Phases

LAND121 Phase 4 will acquire and deliver into service Protected Mobility Vehicles – Light (PMV-L) and companion trailers for command, liaison, reconnaissance and utility roles; and the associated training and support systems. Elements of LAND19 Phase 7B tactical radar and high mobility launcher system being acquired for this capability will be integrated onto the Hawkei mission system.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

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Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
May 17	Original Approval (First Pass Approval)	25.9	
Jun 19	Government Second Pass Approval	1,248.4	
	Total at Second Pass Approval	1,274.3	
Jun 21	Exchange Variation	(73.4)	
Jun 21	Total Budget	1,201.0	
Project Expenditure			
Prior to Jul 20	Contract Expenditure – Raytheon Australia	(192.7)	
	Contract Expenditure – CEA Technologies	(57.9)	
	Contract Expenditure – US Government (AT-D-YAI)	-	1
	Other Contract Payments / Expenses	(25.3)	2
		(275.9)	
FY to Jun 21	Contract Expenditure – Raytheon Australia	(118.4)	
	Contract Expenditure – CEA Technologies	(44.7)	
	Contract Expenditure – US Government (AT-D-YAI)	-	2
	Other Contract Payments / Expenses	(9.2)	
		(172.3)	
Jun 21	Total Expenditure	(448.2)	
Jun 21	Remaining Budget	752.8	
Notes			
1	Price and expenditure related to missile procurement is classified. This expenditure has been reported as part of Other Contract Payments / Expenses.		
2	Other Contracts Payments/Internal Expenses comprises: Risk Mitigation Activities, operating expenditure, contractors, consultants, 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	171.5	167.5	PBS-PAES: Forecast expenditure is in line with the 2020-21 Budget Estimate with only minor variation. PAES-Final Plan: Forecast expenditure is in line with the 2020-21 PAES with only minor variation.
Variance \$m	(2.9)	(4.0)	Total Variance (\$m): (6.9)
Variance %	(1.7)	(2.3)	Total Variance (%): (4.0)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		1.7	Australian Industry	The variance is primarily due to early delivery of some milestones, minor cost increases due to design changes, and higher than estimated escalation costs.
		(0.8)	Foreign Industry	
			Early Processes	
		3.8	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
167.5	172.3	4.8	Total Variance	
		2.8	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Raytheon Australia	Jun 19	680.1	730.7	Fixed Price	Standard Defence Contract	1, 2
CEA Technologies	Nov 19	137.1	153.1	Fixed Price	Standard Defence Contract	1, 2
US Government (AT-D-YAI)	Mar 20	-	-	Reimbursement	FMS	3
Notes						
1	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
2	The price increase since contract signature is primarily due to escalation and foreign exchange rate variation.					
3	Pricing related to missile procurement is classified.					
Contractor	Contracted Quantities as at		Scope		Notes	
	Signature	30 Jun 21				
Raytheon Australia	7	7	NASAMS Fire Units plus training equipment			
CEA Technologies	Tactical Radars Operational Radars	Tactical Radars Operational Radars	Radars plus training and support equipment			
US Government	Classified	Classified	Missiles			
Major equipment accepted and quantities to 30 Jun 21						
Nil.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Requirements	NASAMS	Oct 19	N/A	Oct 19	0	
	CEA Radars	Apr 20	N/A	Apr 20	0	
Preliminary Design	NASAMS	May 20	N/A	May 20	0	1
Detailed Design	NASAMS	Dec 20	N/A	Dec 20	0	
	CEA Radars	Jul 21	N/A	Jul 21	0	
Notes						
1	Preliminary Design aspects for CEA Radars were covered in the NASAMS PDR.					

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3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Integration	First of Type (FoT) Canister Launcher Factory Acceptance Test (FAT)	Jan 22	N/A	Jan 22	0	1
	FoT Fire Distribution Centre FAT	Apr 22	N/A	Apr 22	0	1
	Flight Trial	Jun 22	N/A	Jun 22	0	1
Acceptance (NASAMS Fire Units)	Fire Unit 1 (first)	Mar 23	N/A	Mar 23	0	1, 2
	Fire Unit 7 (final)	May 24	N/A	May 24	0	
Acceptance (CEA Radars)	Tactical Radar (first)	Mar 23	N/A	Mar 23	0	
	Tactical Radar (final)	Jun 24	N/A	Jun 24	0	
	Operational Radar (first)	Mar 23	N/A	Mar 23	0	
	Operational Radar (final)	Apr 24	N/A	Apr 24	0	
Notes						
1	This milestone is at risk of delay, however the magnitude of the delay is still to be determined. COVID-19 restrictions on international travel have prevented effective collaboration, integration and test activities throughout 2020 and into 2021. There have also been delays to provision of Government Furnished Materiel, which are expected to further impact forecast dates.					
2	Fire Unit composition varies per Fire Unit (i.e. number and type of launchers and other major systems).					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	May 23	May 23	0	1
Initial Operational Capability (IOC)	Jun 23	Jun 23	0	1
Final Materiel Release (FMR)	Sep 25	Sep 25	0	
Final Operational Capability (FOC)	Jun 26	Jun 26	0	
Notes				
1	This milestone is at risk of delay, however the magnitude of the delay is still to be determined. COVID-19 restrictions on international travel have prevented effective collaboration, integration and test activities throughout 2020 and into 2021. There have also been delays to provision of Government Furnished Materiel, which are expected to further impact forecast dates.			

Schedule Status at 30 June 2021

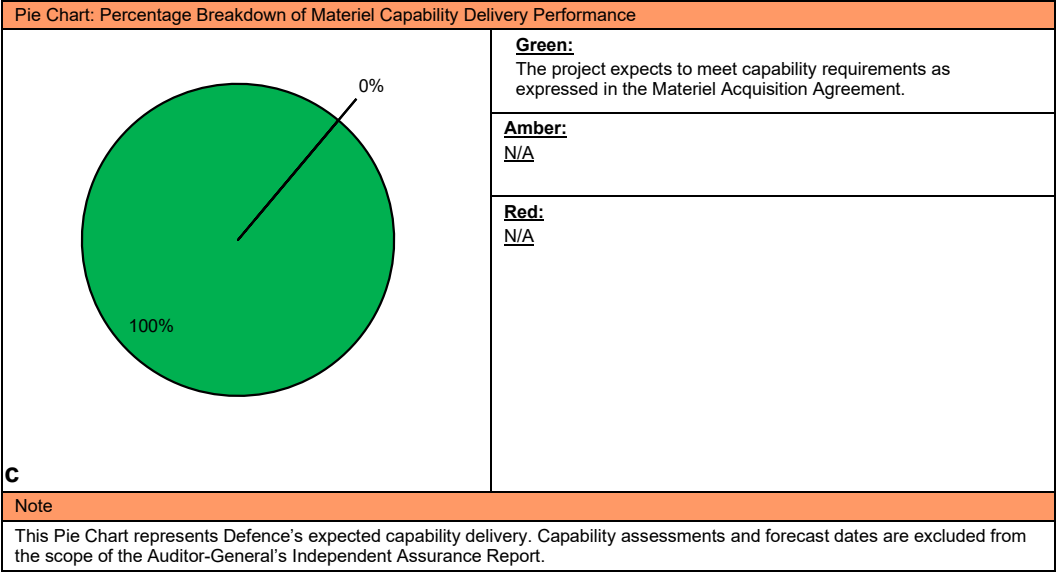
The Gantt chart illustrates the schedule status for various milestones as of 30 June 2021. The timeline spans from February 2019 to June 2026, with labels every six months. Milestones are represented by vertical bars: 'Approval' (grey) at Feb-19, 'IMR' (blue) at May-23, 'IOC' (green) at Jun-23, 'FMR' (orange) at Sep-25, and 'FOC' (red) at Jun-26. A blue line with a dot at each milestone indicates the current status. The chart shows that IMR and IOC are achieved, while FMR and FOC are forecast. The timeline is divided into quarters: Feb-19, Jun-19, Oct-19, Feb-20, Jun-20, Oct-20, Feb-21, Jun-21, Oct-21, Feb-22, Jun-22, Oct-22, Feb-23, Jun-23, Oct-23, Feb-24, Jun-24, Oct-24, Feb-25, Jun-25, Oct-25, Feb-26, Jun-26.

Note

Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none">Fire Unit with Tactical RadarClassroom Trainer installed)Basic Support EquipmentInitial SparesSystems accepted and certifiedSupport Contract in operation IMR is expected to be achieved in May 2023.	Not yet achieved
Initial Operational Capability (IOC)	<ul style="list-style-type: none">One operationally deployable Fire UnitVehicles to support Fire UnitOperator and maintainer trainingCompletion of Operational Test & Evaluation IOC is expected to be achieved in June 2023.	Not yet achieved
Final Materiel Release (FMR)	<ul style="list-style-type: none">AllFire UnitsAll RadarsAll spares and support equipment FMR is expected to be achieved in September 2025.	Not yet achieved
Final Operational Capability (FOC)	<ul style="list-style-type: none">Complete mission system comprising all materiel elements defined in IMR and FMRDoctrine publishedAll certification and accreditation completeFacilities complete FOC is expected to be achieved in June 2026.	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
<p>There is a chance that COVID-19 impacts (including international travel restrictions) will continue to prevent effective collaboration between subcontractors, resulting in delays to critical integration and test events.</p> <p>This will increase the technical risk during acceptance testing and compress the schedule, leading to an increased risk of defects and schedule delays in the lead-up to IOC.</p>	<p>Some critical integration and test activities have been able to be conducted remotely over networks, and this will continue.</p> <p>International travel (with quarantine at each end) has occurred for certain integration activities, however this is not always possible or practical (and varies with each country/state's COVID situation).</p> <p>Some resequencing of the schedule is occurring, including reduced review times for contract deliverables. Air freight in lieu of sea freight is also under consideration.</p> <p>The schedule and ongoing test and integration activities are being assessed throughout 2021, with a decision to be made in Q4 2021 as to the feasibility of retaining the current IOC date.</p>
<p>There is a chance that there will be insufficient time for Army to conduct Operational Test and Evaluation (OT&E), following acceptance of equipment, and completion of initial training.</p> <p>Noting the complex introduction into service for this capability, and potential for corrective actions following acceptance testing, there is insufficient time in this schedule.</p>	<p>The IOC footprint is the minimum for an effective operational capability, to allow for a scaled introduction into service through to FOC.</p> <p>A number of opportunities have been identified to increase Army involvement in activities leading up to introduction into service, thereby reducing the emphasis on the final OT&E.</p> <p>Further detailed planning on OT&E will confirm opportunities such as placement of Army personnel in the Raytheon team, Army participation in acceptance testing, and combining training exercises with OT&E.</p>

5.2 Major Project Issues

Description	Remedial Action
No issues to report.	
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
<p>The COVID shutdown provided an opportunity to improve the use of ICT collaboration tools. This has seen an increase in productivity and reduced reliance on travel. However, there are still limitations in what can be achieved between Defence systems and industry systems, primarily due to security and accreditation issues.</p> <p>The project team is now able to work collaboratively from multiple remote locations. This would be further improved by extending ICT collaboration tools to our industry partners. While this presents significant security accreditation issues to resolve, an investment now would yield much improved collaboration in future.</p> <p>Plan for future ICT collaboration tools to be extended to trusted industry partners.</p>	Resourcing
<p>Mandated System Reviews (MSRs) in large projects can cover many complex issues, over several days. They require review of large amounts of data in advance. Lead-in reviews are a great way to focus attention of relevant stakeholders on particular issues. They can be conducted months in advance of the MSR.</p> <p>A lead-in review is a separate meeting or workshop held to discuss a particular MSR agenda item. They can often be used to gain concurrence on a particular issue, thereby saving time in the MSR, and giving stakeholders a chance to consider. They also help focus reviewers on key issues prior to the MSR.</p> <p>Conduct lead-in reviews as a standard part of preparation for large MSRs.</p>	Contract Management
<p>Risk Mitigation or Risk Reduction activities are often completed during First Pass to Second Pass, usually to investigate technical feasibility or capability definition. Extending these activities to include formal requirements development and system definition can place the project in a much more mature state at Contract Signature.</p> <p>Contracts can sometimes be established with immature requirements, and requirements definition completed post effective-date may result in cost, schedule or capability adjustments post-Second Pass.</p> <p>By focusing on system specification refinement between First Pass to Second Pass, this risk can be mitigated.</p> <p>Include formal and funded system definition activities between First Pass to Second Pass.</p>	Requirements Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	MAJGEN Andrew Bottrell
Branch Head	BRIG Shaun Hoffmann

Project Data Summary Sheet¹⁵⁶

Project Number	AIR2025 Phase 6
Project Name	JINDALEE OPERATIONAL RADAR NETWORK (JORN) MID-LIFE UPGRADE
First Year Reported in the MPR	2020-21
Capability Type	Upgrade
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Dec 15
Government 2nd Pass Approval (or key Government pre-Second Pass Approval)	Dec 17
Budget at 2 nd Pass Approval (or key Government pre-Second Pass Approval)	\$1,117.9m
Total Approved Budget (Current)	\$1,128.5m
2020-21 Budget	\$48.7m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The Jindalee Operational Radar Network (JORN) is a long-range over-the-horizon radar that supports the Australian Defence Force's air and maritime operations, strategic surveillance, and search and rescue operations. Project AIR2025 Phase 6 delivers a major mid-life redesign and upgrade by modernising JORN, including the Command and Control system operated from the Battlespace Surveillance Centre at RAAF Base Edinburgh and the three radar sites located at Longreach in Queensland, Laverton in Western Australia and Alice Springs in the Northern Territory. Other vital supporting infrastructure including the extensive ionospheric sounder network will also be upgraded.

The project addresses obsolescence, improves system performance, provides a more contemporary system architecture and reduces the Total Cost of Ownership. The four tranches of execution are systems engineering and design (Tranche 1); upgrade of the first radar and delivery of a new Command and Control system (Tranche 2); and serial upgrade of the remaining two radars (Tranches 3 and 4).

1.2 Current Status

Cost Performance

In-year

As at 30 June 2021, financial year 2020-21 expenditure is \$45.8m against the forecast planned expenditure of \$48.7m. The variation is mainly due to lower than forecast Prime Contractor spend.

Project Financial Assurance Statement

As at 30 June 2021, Project AIR2025 Phase 6 has reviewed the approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

¹⁵⁶ Notice to reader

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

Schedule Performance

While good progress has been made in software development and receiver hardware, the Project experienced persistent lag in execution of the systems engineering program. Delays were first identified when the Systems Requirements Review (SRR) and Systems Definition Review (SDR) were not achieved as planned in January 2019. The delays are considered unrecoverable and will impact the schedule to Initial Operational Capability (IOC) and Final Operational Capability (FOC). As a result of the delays, the project was declared a 'Project of Interest' in September 2019.

The key drivers for the delays are predominantly attributed to the underestimation of JORN systems engineering complexity and required design effort. In addition, the ability for industry to recruit, prepare and organise a sufficiently technically capable team to execute the systems engineering program within the contracted timeframes has also contributed.

To address the delays, Defence and BAE Systems Australia (BAESA) commenced a series of workshops and agreed in June 2020 on a revised incremental program delivery strategy (known as the 'Alternative Delivery Strategy (ADS)'). The ADS seeks to capitalise on the good progress in software development and receiver hardware by rolling out product incrementally onto the live radar system, which will better address technical risk. This approach sees elements of the upgrade introduced as soon as they are ready rather than awaiting the slowest element of the system design to be completed.

From May 2020, Defence has supported a series of workshops to capture the new approach and develop new project cost and schedule baselines. A draft Contract Change Proposal, reflecting the revised delivery schedule, cost and risk baseline has been delivered to Defence in late April 2021, reflecting changes to both Acquisition and Support contracts to support the ADS. The proposal is currently being considered by Defence and is expected to be signed later in 2021.

Materiel Capability Delivery Performance

This project has not delivered any materiel capability to date.

The current JORN capability remains fully operational while the project is progressing. As part of the ADS, elements of the system will be introduced incrementally, designed to accelerate the delivery of upgraded capability to Air Force. The strategy will see the JORN Battlespace Surveillance Centre located at RAAF Base Edinburgh upgraded first, and a series of prototype receiver systems progressively delivered culminating in the upgrade of the radar receiver systems.

The scope of this project is planned to increase in future Government approvals, to allow for further JORN enhancements and to expand surveillance to Australia's eastern approaches.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

Whilst a number of countries have over-the-horizon radar technology, JORN is the most sophisticated and capable over-the-horizon radar system in the world. A similar capability cannot be acquired as an off-the-shelf system. The ongoing development of JORN by Defence in partnership with Industry represents a long term national investment in a unique capability.

The Smart Buyer Process was introduced to Defence during 2016 and became a mandatory requirement for Defence projects during 2017. As the new process was introduced after AIR2025 Phase 6 approached the market and the project adequately captured the acquisition, sustainment and project management strategies, a formal Smart Buyer review was not conducted.

AIR2025 Phase 6 achieved Second Pass Government approval in December 2017. Government approved a core system upgrade, plus eleven separate capability enhancements. Six of these enhancements were negotiated into the contract at signature, with the remaining five to be deferred until the technology is sufficiently mature. The prime contractor is BAE Systems Australia (BAESA) with Lockheed Martin Australia (LMA) providing additional specialist engineering services to Defence.

As a complex sovereign development program requiring integration of Defence Science and Technology Group (DSTG) developed technology, a collaborative relationship between Defence and the prime contractor, BAESA, is critical to success. Despite the ongoing positive client-supplier relationship, the project has experienced significant schedule challenges, particularly within the systems engineering program (other key streams of activity including hardware and software development remain on track).

As a result of the persistent delays, AIR2025 Phase 6 became a Project of Interest in September 2019.

Following completion of a bottom-up re-baseline of the schedule in late 2019 which indicated a potential significant delay to IOC, Defence and BAESA agreed to collaboratively undertake an analysis to understand the cause of additional effort estimates and identify a new approach to deliver the project.

As a result, the Alternative Delivery Strategy (ADS) was developed which retains an optimisation of the systems engineering artefacts under the original delivery approach; however, it also takes advantage of:

- Mature and proven product development completed to date
- Rolling out elements of the system as they are developed for early feedback from the end-user and to progressively retire risk, prior to formal acceptance
- Design decisions and justification based on actual performance.

Implementation of the ADS is being complemented by organisational change (structure, plans, processes and culture) given the significant tailoring of the development approach and to ensure key lessons of the past are appropriately addressed.

Following approval of the Options Paper in May 2020, BAESA and Defence determined how to put the broad aims of the ADS into practice. This was subsequently guided by a Heads of Agreement Deed (signed December 2020) which defined the key commercial and remediation principles for the revised strategy, which:

- address and support the revised delivery approach to the Project;
- help reduce the likelihood of future delivery problems; and
- develop and foster a greater whole of enterprise approach to optimising capability outcomes and sustainment

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performance.
BAESA delivered its costed Acquisition and Sustainment Contract Change Proposals (CCPs) to incorporate the ADS as the new program Performance Measurement Baseline into the Contracts on 30 th April 2021. A formal evaluation of the delivery plans, costs, schedule and risks is currently being undertaken against evaluation criteria derived from a considerable body of review and lessons learned material. CCP signature is anticipated to occur late September.
An interim schedule, aligned to the ADS is in place to progress the delivery of the project.
Uniqueness With initial experimentation and development commencing over 50 years ago within the Defence Science and Technology Group (DSTG), a world-leading Over The Horizon Radar (OTHR) capability has been established in collaboration with Australian industry, providing significant Defence capability and economic value to the nation. Project AIR2025 Phase 6 relies on a highly skilled and specialised workforce to design and develop HF-Radar technology. The ability to attract and retain a skilled Industry and Defence workforce is a key enabler to successful project delivery. Defence, rather than BAESA, retains responsibility for key aspects of the JORN system-level performance under the project arrangement due to Defence providing to BAESA specific hardware and software elements that directly impact the performance of the JORN System.
Major Risks and Issues The current major project risks subject to remedial action are: <ul style="list-style-type: none"> - Attraction and retention of staff in the High Frequency Radar Enterprise - Continued delays during execution of the project - Increased material costs across Tranches 3 and 4 - Integration of future phases of AIR2025 (subject to future Government approval) and High Powered Amplifiers (HPA) into the AIR2025 Phase 6 baseline
Other Current Related Projects/Phases 1. N/A
Note
Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Jan 16	Original Approved (Government First Pass Approval)	49.4	
Dec 17	Government Second Pass Approval	1,068.5	1
	Total at Second Pass Approval	1,117.9	
Apr 20	Real Variation – Transfer from E&IG	2.5	2
Jun 20	Real Variation – Scope JORN Enhancement	8.2	3
Jun 21	Exchange variation	0	4
Jun 21	Total Budget	1,128.6	
Project Expenditure			
Prior to Jul 20	Contract Expenditure – BAE Systems Australia (Prime Acquisition)	(100.3)	
	Contract Expenditure – Lockheed Martin Australia Limited (ESC)	(10.4)	
	Contract Expenditure – Jacobs (IWP) Contract Expenditure	(6.4)	
	Other Contract Payments / Internal Expenses	(26.6)	5
		(143.7)	
FY to Jun 21	Contract Expenditure – BAE Systems Australia (Prime Acquisition)	(31.2)	
	Contract Expenditure – Lockheed Martin Australia (ESC)	(3.2)	
	Contract Expenditure – Jacobs (IWP)	(6.4)	
	Other Contract Payments / Internal Expenses	(4.9)	6
		(45.8)	
Jun 21	Total Expenditure	(189.5)	
Jun 21	Remaining Budget	939.1	
Notes			
1	Government Second Pass Approval includes an \$18.3m adjustment to be funded from the unspent portion of the previously approved First Pass funding.		
2	Estate and Infrastructure Group (E&IG) received funding to support AIR2025 Phase 6, which included replacing a facility at Radar 3 Transmit site. It was agreed that the replacement facility is best delivered by the JORN Prime Contractor, as it involves specialist fit-out and coordinated delivery within JORN operational constraints.		
3	Early access to funding to enable early capability planning and de-risking activities for the JORN Enhancement scope.		
4	The zero value is due to rounding of exchange variation as the majority of the contracts are in AUD		
5	Other expenditure of \$26.6m consists of \$14.6m expenses for JORN support program extension, \$5.9m for		

	integrated support contract, \$0.95m for project management overhead, and the remaining for operating expenditure.
6	Other Expenditure of \$4.9m consists of \$3.8m for expenditure incurred under AIR2025 Phase 6A of the project and the remaining expenditure for other operating expenses.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
53.5	48.7	48.7	PBS – PAES: The variation is primarily due to the delays in the Prime Contractor's systems engineering program resulting in lower than anticipated material and labour spend. PAES – Nil Variation.
Variance \$m	(4.8)	(-)	Total Variance (\$m): (4.8)
Variance %	(9.1)	(-)	Total Variance: (9.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(3.6)	Australian Industry	The forecast in-year variance (-\$3.6m) is due to Prime Contractor (BAESA) lower than planned Direct Cost spend due to resources being focused on the reprogramming work, labour for which cannot be charged to the Project. Planned procurement (\$0.7m) spend brought forward from FY 21/22.
			Foreign Industry	
		0.7	Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
48.7	45.8	(2.9)	Total Variance	
		(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 21 \$m			
Lockheed Martin Australia	Mar 18	15.1	28.1	Variable	Standard Defence Contract	1,2
BAE Systems Australia	Mar 18	455.9	456.4	Variable	Standard Defence Contract	1
Jacobs Australia – Integrated Work Package	Dec 18	25.0	33.0	Variable	Integrated Work Package	3

Notes

1	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current budgeted exchange rates, and includes adjustments for indexation (where applicable).
2	The price at 30 June has increased by \$12.5m because the contract was extended by two years. The contract price at signature was initially based on contract expiry date of April 2018. The expiry date may be extended one more time but it cannot be extended beyond 10 years.
3	Contract value is the estimated Project share of the Branch IWP contract and is based on the estimate of project expenditure to the end of December 2023.

Contractor	Contracted Quantities as at		Scope	Notes
	Signature	30 Jun 21		
Lockheed Martin Australia	N/A	N/A	Provide specialist engineering resources to facilitate Defence's execution of AIR2025 Phase 6.	
BAE Systems Australia	N/A	N/A	AIR2025 Phase 6 Prime Contractor that includes (but not limited to) the replacement of obsolescent systems, a new human-machine interface and new diagnosis and management systems.	
Jacobs Australia – Integrated Work Package	N/A	N/A	Service based integrated work package.	
Major equipment accepted and quantities to 30 June 21				
Nil.				

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Section 3 – Schedule Performance

3.1 Design Review Progress

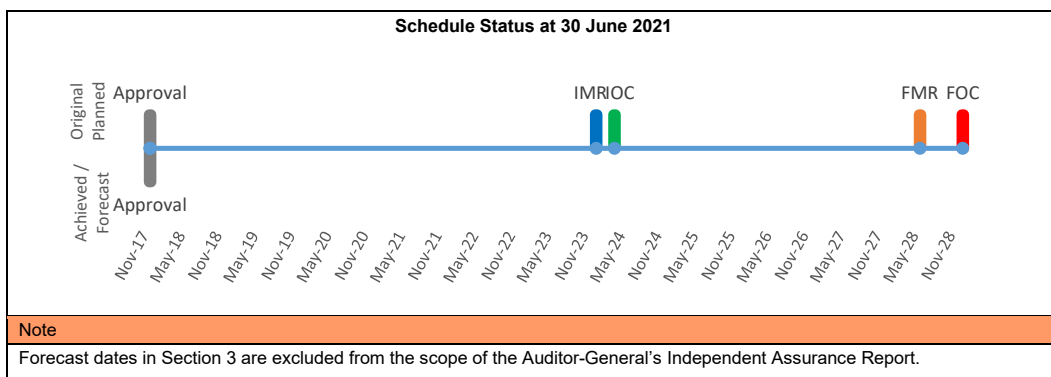
Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved /Forecast	Variance (Months)	Notes
System Requirements Review	JORN Mission and Support System	Jan 19	N/A	Sep 19	8	1, 2
System Definition Review	JORN Mission and Support System	Jan 19	N/A	Jun 20	17	1, 2
Preliminary Design Review	JORN Mission and Support System	Oct 19	N/A	TBA	N/A	3
Detailed Design Review	JORN Mission and Support System	Jun 20	N/A	TBA	N/A	3
Support System Detailed Design Review	JORN Mission and Support System	Dec 20	N/A	TBA	N/A	3
Notes						
1	The original schedule included a Combined System Requirements Review and System Definition Review scheduled for January 2019. These were agreed to be de-coupled in December 2018 and finalised through a Contract Change Proposal. The original contracted date of January 2019 did not change.					
2	The Project experienced persistent lag in execution of the systems engineering program. Key drivers for the delays are predominantly attributed to the underestimation of JORN systems engineering complexity and required design effort.					
3	A Contract Change Proposal to reflect the Alternative Delivery Strategy, including an updated schedule was delivered by BAESA in April 2021 and is currently being evaluated by Defence. A revised forecast will be provided upon signature of the Reprogram CCP anticipated to occur by the end of September 2021. However, the delays are anticipated to be several years.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
Modification Readiness Review 1	Radar 1 & Operations Centre	Sep 21	N/A	TBA	N/A	1
System Acceptance	Radar 1 & Operations Centre	Jan 24	N/A	TBA	N/A	1
Modification Readiness Review 2	Radar 2	May 24	N/A	TBA	N/A	1
System Acceptance	Radar 2	Mar 26	N/A	TBA	N/A	1
Modification Readiness Review 3	Radar 3	May 26	N/A	TBA	N/A	1
System Acceptance	Radar 3	Jun 28	N/A	TBA	N/A	1
Notes						
1	A Contract Change Proposal to reflect the Alternative Delivery Strategy, including an updated schedule was delivered by BAESA in April 2021 and is currently being evaluated by Defence. A revised forecast will be provided upon signature of the Reprogram CCP anticipated to occur by the end of September 2021. However, the delays are anticipated to be several years.					

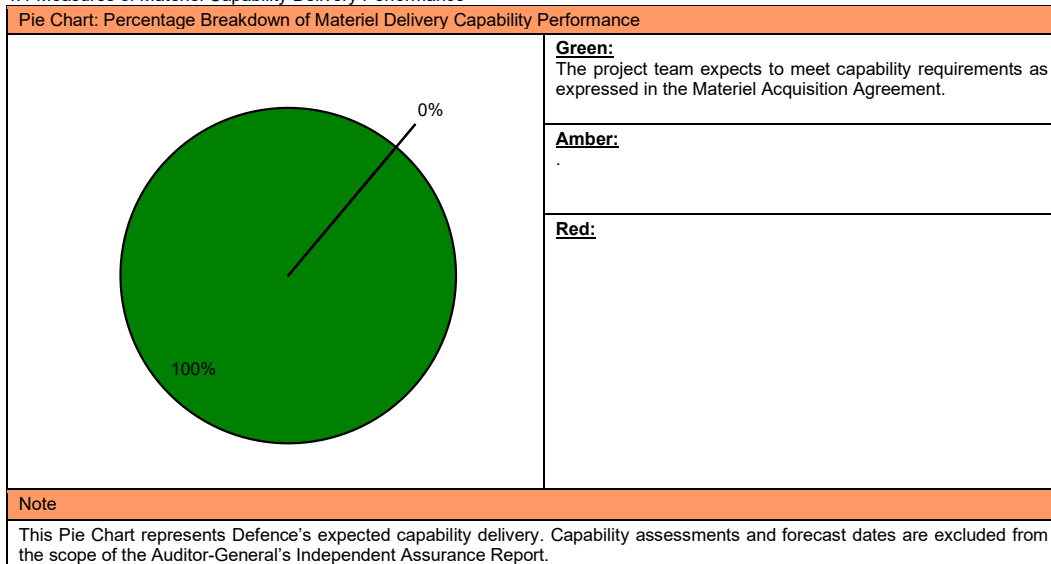
3.3 Progress toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jan 24	TBA	N/A	1
Initial Operational Capability (IOC)	Apr 24	TBA	N/A	1
Material Release 2 (MR2)	Mar 26	TBA	N/A	1
Operational Capability 2 (OC2)	May 26	TBA	N/A	1
Final Materiel Release (FMR)	Jun 28	TBA	N/A	1
Final Operational Capability (FOC)	Jan 29	TBA	N/A	1
Notes				
1	A Contract Change Proposal to reflect the Alternative Delivery Strategy, including an updated schedule was delivered by BAESA 30 th April 2021 and is currently being evaluated by Defence. A revised forecast will be provided upon signature of the Reprogram CCP anticipated to occur by the end of September 2021. However, the delays are anticipated to be several years.			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<ul style="list-style-type: none"> - The first JORN radar (Radar 1) and supporting systems upgraded with new hardware and software; - New Operations Centre that supports operation of the upgraded Radar and legacy systems - Forecast completion dates to be confirmed upon execution of Reprogram CCP and execution of revised MAA. 	Not yet achieved
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> - The first JORN radar (Radar 1) and supporting systems upgraded with new hardware and software; - New Operations Centre that supports operation of the upgraded Radar and legacy systems ; - Training to enable sufficient personnel to conduct operations has been provided; - Sufficient sparring and support arrangements are in place to sustain operations; - Support contracts are established for all upgraded and existing JORN systems, radar sites and the JORN Coordination Centre; - Forecast completion dates to be confirmed upon 	Not yet achieved

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	execution of Reprogram CCP and execution of revised MAA.	
Materiel Release 2 (MR2)	- The second JORN radar (Radar 2) and supporting systems upgraded with the new hardware and software.	Not yet achieved
Operational Capability 2 (OC2)	- The second JORN radar (Radar 2) and supporting systems upgraded with new hardware and software; - Training to enable sufficient personnel to conduct operations has been provided; - Sufficient sparing and support arrangements; - Support contracts are established for all upgraded and existing JORN systems, radar sites and the JORN Coordination Centre; - Forecast completion dates to be confirmed upon execution of Reprogram CCP and execution of revised MAA.	Not yet achieved
Final Materiel Release (FMR)	- The third JORN radar (Radar 3) and supporting systems upgraded with new hardware and software; - Ionospheric sounder network is upgraded; - Forecast completion dates to be confirmed upon execution of Reprogram CCP and execution of revised MAA.	Not yet achieved
Final Operational Capability (FOC)	- The third JORN radar (Radar 3) and supporting systems upgraded; - Achievement of all Capability Enhancement Elements; - Achievement of the operational parameters as defined in the Operational Concept Document; - Training to enable sufficient personnel to conduct operations in accordance with the defined level of capability and preparedness requirements is provided; - Sufficient sparing and support arrangements are in place to sustain operations in accordance with the defined level of capability and preparedness requirements; - Support contracts are established for all upgraded and existing JORN systems, radar sites and the JORN Coordination Centre; - Forecast completion dates to be confirmed upon execution of Reprogram CCP and execution of revised MAA.	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 resources required to execute the program cannot be applied due to the Contractor's inability to attract and retain staff.	Defence and BAESA have been collaboratively working together to better understand the resourcing challenges in the defence market, particularly in South Australia. These improved insights are being incorporated into the current program workforce profile (this obligation is in accordance with the Heads of Agreement negotiated in December 2020 with BAESA). A series of workforce metrics have been established under a Workforce System Health Indicator to monitor the recruitment, development and retention of personnel. Improved management of the workforce at a more holistic enterprise level is a key objective of the HF radar enterprise road map that is being developed between BAESA and Defence.
There is a risk of further delays post execution of the re-baselined schedule in the Reprogram CCP.	The new Performance Measurement Baseline (PMB#3) is informed by a number of critical lessons learned from the original program. The revised delivery approach will serve to retire program risk progressively and earlier by rolling out elements of the system as they are developed. A newly established, collaborative-based governance framework will ensure early visibility and elevation of performance issues to enable pro-active remediation.

	Additional contract mechanisms will also be incorporated and importantly the escalation steps prior to these events.
There is a risk of significant hardware cost increases associated with the upgrade of the remaining two radars (Tranches 3 & 4) post IOC, caused by material costs being higher than originally anticipated and the Heads of Agreement excluding the re-estimation of Tranches 3 and 4.	A technical contingency allocation has been identified for mitigation strategies that relate to design to cost and manufacture. Effective use of a competitive supply chain approach.
There is a risk of delays to the start and integration of future phases of AIR2025 Phase 6 (subject to future Government approval) and HPAs into the Phase 6 Baselines due to resource pressures.	Stakeholder prioritisation required to ensure effective allocation of finite resources from the HF Radar enterprise. Early funding approvals will support workforce certainty and mobilisation. Development of an Integrated master schedule will underpin effective cost and risk planning.
Emergent Risks (risk not previously identified but has emerged during 2020-2021)	
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 Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Maintaining collaboration, transparent communication and disciplined engagement with all stakeholders is critical for managing technical requirements and facilitating risk management.	First of Type Equipment
An aggressive schedule developed by industry under competitive pressure resulted in compressed timeframes which exacerbated requirements management and delivery issues.	Schedule Management / Governance
While over-the-horizon radar (OTHR) is technically complex, subject matter experts in Defence and industry were not optimally utilised to supplement and advise inexperienced program personnel and leadership.	First of Type Equipment
Traditional waterfall approaches rely on a single 'big bang' integration event close to the Initial Materiel Release (IMR) milestone which is difficult to mitigate using sequential top-down design phase analysis. More agile approaches to program delivery allow the parties to learn together and adjust to overcome emergent technical issues within schedule and cost parameters.	Schedule Management
Adopting a holistic "enterprise" approach to project delivery, sustainment, future development, requirements and export opportunities ensures that limited resources (including technical expertise) are optimised and waste and capability impacts minimised.	Governance
Sovereign projects of this complexity require dedicated strategic leadership (at SES Band One equivalent) to manage and lead the project to ensure appropriate priority and effective relationships with key stakeholders are maintained.	Governance

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Mr Shane Fairweather
Branch Head	Mr Rodney Hislop

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Project Data Summary Sheet¹⁵⁷

Project Number	SEA1654 Phase 3
Project Name	Maritime Operational Support Capability (Replacement Replenishment Ships)
First Year Reported in the MPR	2017-18
Capability Type	Replacement
Capability Manager	Chief of Navy
Government 1st Pass Approval	Apr 14
Government 2nd Pass Approval	Apr 16
Budget at 2 nd Pass Approval	\$1,004.6m
Total Approved Budget (Current)	\$1,082.6m
2020-21 Budget	\$208.1m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The SEA1654 Phase 3 Maritime Operational Support Capability (MOSC) Project will replace both HMA Ships *Success* and *Sirius* with a single class of two Auxiliary Oiler Replenishment (AOR) Ships to sustain deployed maritime forces.

The primary role of the AOR Ships is the provision of afloat-support capability to fleet units. Afloat support is the underway replenishment of liquid and solid cargo, including high-flashpoint marine diesel fuel and aviation fuel, potable water, explosive ordnance, fresh and frozen provisions and general stores, utilising ship fitted systems or helicopters. The secondary role of the AOR Ships is to provide limited resupply in support of operations ashore.

1.2 Current Status

Cost PerformanceIn-year

As at end of June 2021, the project **spent by \$150.4m against an in-year budget of \$208.1m. The variance of \$57.7m is primarily due to the prime contract (Navantia), associated with the transfer of additional works from Spain to Australia, and delays to the Contract Change Proposal (CCP) relating to final sparing deliveries.** Due to delays in the prime contract of approximately six months, the end of financial year forecast is an expected underspend of **\$57.7m** with affected milestones reprogrammed to the next financial year.

Project Financial Assurance Statement

As at 30 June 2021, the SEA1654 Phase 3 Project has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget including contingency remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

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

Schedule Performance

Production of the AOR Ships continued in Spain until the shipyard was shut down for 12 weeks from 14 March 2020 to 08 June 2020 in response to the COVID-19 pandemic and the nationwide lockdown. On return to work, productivity was reduced by the need to meet strict post-COVID work procedures limiting workforce numbers, additional cleaning and social distancing. The overall forecast delay to Ship 1 **was** 6 months. Consequently, Initial Materiel Release (IMR) **was** similarly delayed, however Initial Operational Capability (IOC) **was** delayed by only 5 months. Final Materiel Release (FMR) and Operational Capability (OC) for Ship 2 have also been delayed by approximately 8 months as a result of the shutdown and production delays.

Major SEA1654 Phase 3 Project milestones achieved in **2020-21** include:

- **Ship 1 Supply achieved Ship Acceptance (SA1) 18 December 2020;**
- **Ship 1 Supply Initial Materiel Release (IMR) was declared 18 December 2020;**
- **Ship 1 Supply Commissioned into the Royal Australian Navy (RAN) and achieved Initial Operational Readiness in April 2021;**
- **Ship 2 Stalwart arrived at Fleet Base West June 2021.**

The achievement of Final Operational Capability (FOC) remains forecast in December 2022. This is within the original schedule approved by Government at Second Pass.

Materiel Capability Delivery Performance

The SEA1654 Phase 3 Project **delivered Ship 1 Supply to the RAN 26 April 2021, and the ship is currently at sea undertaking Naval operational test and evaluation program. Ship 2 Stalwart arrived in Fleet Base West on the 21 June 2021 and is expected to achieve Ship Acceptance 27 August 2021.**

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

The Royal Australian Navy (RAN) currently has two afloat-support ships to conduct Replenishment at Sea (RAS) operations. HMAS *Success* was commissioned in 1986 and is based on the French designed Durance class AOR. HMAS *Sirius* was commissioned in 2006 and is a Korean built commercial product tanker acquired and converted to an Auxiliary Oiler (AO).

The Defence White Paper 2013 (DWP 2013) identified the requirement for the RAN to resupply its deployed ships as an essential capability given the size of the area over which its Naval forces operate and the extended periods they may be required to remain at sea. It advised the Government's intention to replace the capability currently provided by *Success* and *Sirius* at the first possible opportunity; which would include the examination of options for local, hybrid and overseas build, or the leasing of an existing vessel.

In light of the urgent need to forestall a capability gap in this crucial area, and supported by value for money considerations, the Government provided First Pass approval in April 2014 for Defence to conduct a limited competitive tender process between Navantia S.A. (Navantia) of Spain and Daewoo Shipbuilding and Marine Engineering (DSME) of South Korea for two replacement replenishment ships based on existing Military-Off-the-Shelf (MOTS) designs.

The SEA1654 Phase 3 Project entered into contracts with DSME and Navantia on 7 and 10 October 2014 respectively, for the Risk Reduction and Design Studies (RRDS). The primary RRDS deliverable was the Mission System Specification (MSS) for the AOR Ship design solution, as well as an indicative support strategy.

The Government provided Second Pass approval in April 2016 to acquire two AOR ships and associated support systems from Navantia, including an initial period of five years in-service support. On 5 May 2016, the \$640 million acquisition contract was signed with Navantia to build the two AOR Ships in Spain, with delivery contracted to occur in 2019 and 2020 respectively.

Although the new AOR Ships will be built overseas, Australian Industry participation is estimated to be in excess of \$120 million. In addition, the initial \$250 million five-year sustainment contract also signed with Navantia, will be undertaken in Australia (note this contract is not included within Section 2.1 of this PDSS given it refers to the funding of sustainment).

On 17 November 2017, the Minister for Defence announced the AOR Ships would be named HMAS *Supply* and HMAS *Stalwart*.

Uniqueness

The acquisition and support contracts were both signed on the same date and with the same Contractor, Navantia, with linkages between the acquisition and initial transitional five year in-service support Conditions of Contract.

While the AOR Ships are based on the existing MOTS design, based on the Spanish *Cantabria* class design, the minimal changes incorporated into the MSS have been limited to those required to meet the RAN's essential requirements, environmental obligations and statutory requirements.

The AOR Ships will be built and delivered in Spain, before transit to Australia for completion of an Australian fit-out period prior to the introduction into service of each AOR Ship.

Major Risks and Issues

There is only one major risk remaining in this project which relates to the certification of explosive ordnance and armament. The majority of major risks disclosed in the 2019-20 PDSS have been closed due to the SEA1654 Phase 3 Project achieving IOR/ IMR in April 2021. The project also has only one active issue relating to the delays and deficiencies associated with the supplies of Integrated Logistics Support and the delivery of training.

Other Current Related Projects/Phases

Project N2262 - Facilities to Support SEA1654 Phase 3 MOSC: The SEA1654 Phase 3 Project Second Pass Approval also included the approval of scope for, and a significant percentage of the capital acquisition cost allocated to, the delivery of the facility requirements for the MOSC under the Estate and Infrastructure Group (E&IG) Project N2262. The supporting facilities and infrastructure works being delivered at Stirling, Garden Island Defence Precinct and Randwick Barracks under N2262 will be critical to the successful introduction and sustainment of the MOSC. Note the total approved budget and expenditure history included within this PDSS only includes Capability Acquisition and Sustainment Group (CASG) allocated funding and therefore Project N2262 budget and expenditure is excluded from the scope of this report.

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Note
Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Apr 14	Original Approved (Government First Pass Approval)	13.2	1
Apr 16	Government Second Pass Approval	991.4	2
	Total at Second Pass Approval	<u>1,004.6</u>	
Jun 16	Real Variation – Transfer	69.1	3
Apr 19	Real Variation – Transfer	0.3	5
Jan 20	Real Variation – Transfer	12.0	6
Jun 21	Exchange Variation	(3.4)	
	Total Budget	<u>1,082.6</u>	
Project Expenditure			
Prior to Jul 20	Contract Expenditure – Navantia S.A	(602.8)	
	Contract Expenditure – Raytheon Australia	(37.2)	
	Other Contract Payments/Internal Expenses	(27.7)	4
		<u>(667.7)</u>	
FY to Jun 21	Contract Expenditure – Navantia S.A	(131.5)	7
	Contract Expenditure – Raytheon Australia	(6.4)	
	Other Contract Payments/Internal Expenses	(12.5)	4
		<u>(150.4)</u>	7
Jun 21	Total Expenditure	<u>(818.1)</u>	
Jun 21	Remaining Budget	<u>264.5</u>	
Notes			
1	This project's original budget amount is that prior to achieving Second Pass Government approval.		
2	The Government Second Pass Approval transfer amount only includes funding transferred to CASG, including contingency. It does not include approved capital funding transferred to Navy and other Defence Groups.		
3	Transfer of funding for Training under the acquisition contract Not To Exceed (NTE) price for Training delivery and development CCPs from Navy.		
4	Other expenditure comprises operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts.		
5	Transfer of funding is for Materiel Data Exchange Specification (MDES) CCP under the acquisition contract from Navy.		
6	Transfer of funding from Estate and Infrastructure Group (E&IG) project N2262 – Facilities to Support SEA1654 Phase 3 MOSC. Funding will cover additional costs expected in Australian fit-out activities, engineering and ILS costs associated with CCPs and additional project support costs to cover the period of delay.		
7	This amount includes \$0.6m paid from Navy (outside CASG) which relates to the project. This was for work completed regarding the Materiel Data Exchange Specification.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
231.3	214.4	208.1	PBS-PAES: The forecast variation is primarily due to delays in Spain due to the COVID pandemic . PAES-Final Plan: Foreign exchange movements
Variance \$m	(16.9)	(6.3)	Total Variance (\$m): (23.2)
Variance %	(7.3)	(2.9)	Total Variance: (10%)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	In-year variance of \$57.7m to date is primarily due to the prime contract (Navantia), associated with the transfer of additional works from Spain to Australia, and contract change proposals delays relating to final sparing deliveries.
		(57.7)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
208.1	150.4	(57.7)	Total Variance	
		(27.7)	% Variance	

2.3 Details of Project Major Contracts

3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	June 2021 \$m			
Navantia S.A.	May 16	646.8	796.4	Fixed with indices escalation	Standard Defence Contract	1, 2, 3
Raytheon Australia	Nov 16	45.8	44.8	Fixed	Standard Defence Contract	3, 4
Notes						
1	This relates to the acquisition contract with Navantia only. The responsibility for the scope and funding of support contract is under the AOR Systems Program Office (AORSPPO).					
2	The increase in the acquisition contract price with Navantia predominantly relates to CCPs that have been implemented since the end of June 2019 for the provisioning of spares, training delivery and other deliverables.					
3	Contract value as at end June 2021 is based on actual expenditure to end June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
4	The decrease in the contract price with Raytheon Australia is due to minor fluctuations in foreign exchange and a reduction in escalation.					
Contractor	Contracted Quantities as at		Scope	Notes		
	Signature	30 Jun 21				
Navantia S.A.	2	2	AOR Ships Mission and Support Systems			
Raytheon Australia	2	2	Phalanx Block 1B Baseline 2 Close-In Weapon System (CIWS) and ancillary equipment	1		
Major equipment accepted and quantities to 30 Jun 21						
1 AOR Ship – HMAS Supply was accepted 18 December 2020 and achieved IOR 26 April 2021.						
Notes						
1	The CIWS will be delivered with one Remote Control Station (RCS) and one Local Control Station (LCS) per AOR Ship.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirement	Mission System	May 16	N/A	May 16	0	1
	Support System	Jul 16	N/A	Jul 16	0	
Preliminary Design	Mission System and Support System	Dec 16	N/A	Dec 16	0	
Critical Design	Mission System and Support System	Jun 17	N/A	Jun 17	0	2
Notes						
1	The key objectives of the System Requirements Review (SRR) and System Definition Review (SDR) for the Mission System, primarily establishing and validating the functional baseline contained in the contracted MSS, were achieved prior to the acquisition contract Effective Date (ED) as part of the First Pass RRDS contract and subsequent Request for Tender (RFT) Offer Definition and Improvement Activity (ODIA).					
2	Production on the AOR Ships commenced following Critical Design Review (CDR) with cutting steel occurring on 19 June 2017.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration	AOR Ship 1	Aug 19	N/A	Aug 20	12	1,2,5
	AOR Ship 2	May 20	N/A	Mar 21	9	1,2,5
Acceptance	AOR Ship 1	Sep 19	Jun 20	Dec 20	15	3,4,5
	AOR Ship 2	Jun 20	Dec 20	Aug 21	14	3,4,5,6
Notes						
1	System integration planned and forecast dates, including the installation, set-to-work, and testing of all systems on-board the AOR Ships by Navantia, are based on the completion of the Sea Acceptance Trials (SATs) for each AOR Ship.					
2	The integration of some systems such as the torpedo-self-defence (NIXIE), CIWS, Integrated Broadcast System (IBS), and remaining Information Communications Technology (ICT) Networks are required to take place in Australia after delivery of each AOR Ship from Spain.					
3	The current contracted dates for Acceptance are based on the current contract with Navantia.					
4	The Support System Acceptance is a prerequisite for the Acceptance of both AOR Ships Mission Systems. This includes the successful completion of the Provisioning Preparedness Review (PPR), Long Lead Times Item (LLTI) Review, and Facilities Readiness Review (FACRR), Training Readiness Review (TNGRR), Functional Configuration Audit (FCA), Physical Configuration Audit (PCA), crew Training and the Support System Effectiveness Demonstration (SSED).					
5	The forecast dates for System Integration and Acceptance of the AOR Ships are based on the latest agreed forecast dates, which will be included in the next Contract Master Schedule (CMS), delivered by Navantia in July 2021. The Project Integrated Master Schedule reflects this forecast. Delays to System Integration and Acceptance for AOR Ship 1 and Ship 2 against all milestones result from Navantia's shutdown of Shipyard during the Alarm State Covid-19 pandemic crisis.					
6	A Contract Change Proposal (CCP133) was signed on 30 July 2021 which resulted in the AOR Ship 2 contracted Acceptance date change to 31 August 2021.					

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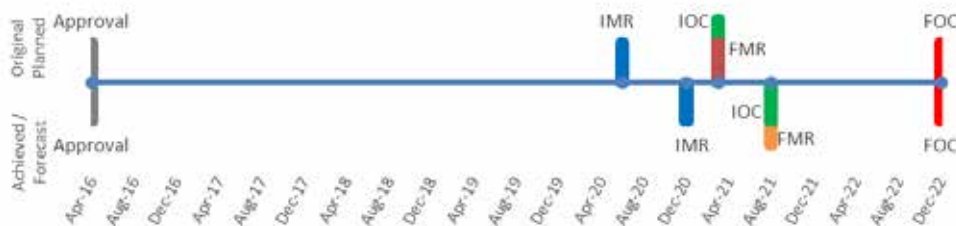
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Q2 2020	Dec 20	6	2
Initial Operational Capability (IOC)	Q1 2021	Aug 21	5	2, 3
Final Materiel Release (FMR)	Q1 2021	Aug 21	8	2, 3
Final Operational Capability (FOC)	2022	Dec 22	0	1

Notes

- 1 Current forecast achievement of FOC aligns with the latest SEA 1654 Phase 3 Integrated Project Management Planning documentation. This integrated planning has matured the project's understanding of FOC activities since the 2017/18 MPR, which previously forecast an early achievement of FOC.
- 2 The variance is mostly due to the Contractor's shipyard shut down in March 2020 in response to the COVID-19 pandemic and the nationwide lockdown and partly due to the production and test delays for both AOR Ships.
- 3 Initial Operational Capability (IOC) and Final Materiel Release (FMR) has been delayed. The affected contractual milestones dates were revised and formally updated via Contract Change Proposal (CCP133). CCP133 was signed on 30 July 2021, demonstrating the revised dates.
- 4 Further clarification of milestones will be reflected in Section 4.2

Schedule Status at 30 June 2021



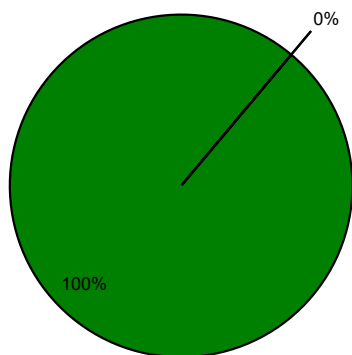
Note

Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

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 (MAA).

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 Auditor-General's Independent Assurance Report.

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	AOR Ship 1 delivered ready for training, work-up and Operational Test and Evaluation (OT&E). Those CASG Fundamental Inputs to Capability (FIC) elements including transition into sustainment as defined by the AOR Support System sufficient to support OT&E. IMR was achieved in December 2020.	Dec 20.
Initial Operational Capability (IOC)	IOC is defined as the ability for an AOR Ship to conduct replenishment at sea for existing Navy Major Fleet Units by demonstrating the capacity to operate two replenishment stations concurrently with helicopter replenishment. IOC is currently forecast to be achieved in August 2021	Not yet achieved.
Final Materiel Release (FMR)	AOR Ship 1 and AOR Ship 2 complete in accordance with the Government Approved scope. FMR is currently scheduled to be achieved in August 2021 .	Not yet achieved.
Final Operational Capability (FOC)	FOC is defined as: a. both new AOR Ships being able to deploy with a Navy Task Group to an operational area, major exercise or activity and conduct fully-integrated Task Group replenishment operations including multi-ship replenishment of liquids, solids and explosive ordnance, including by embarked helicopter; and b. achievement of the full scope of the project including delivery and acceptance into operational service of the Mission System, Support System and training systems and required facilities. FOC is currently scheduled to be achieved in December 2022.	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
<p>Shortage of CoA Resources at Ferrol</p> <p>There is a chance that SA for Ship 1 will be affected by the Commonwealth not having enough suitable resources to witness the remainder of Harbour Acceptance Trials (HATs) and SATs during the Australian fit-out period for Ship 1 at Fleet Base West (FBW), initially due to delays in Navantia's construction program causing a conflict/overlap between ship 01 Australian fit-out, and subsequently further impacted by Covid-19 restrictions.</p>	<ol style="list-style-type: none"> 1. The SEA1654 Phase 3 Project will continue to make best use of the CoA's onsite representatives, TEEKAY, for production's surveillance activities, and utilise these resources to provide assurance over the Builders Dock Trials (BDTs), Builders Sea Trials (BSTs), selected HATs and selected SATs. 2. Lloyds Register is contracted to appraise the design, conduct surveillance over the Production activities, and some aspects of assurance, and certification. 3. Detailed mapping of the Functional Baseline requirements to HATs and SATs test procedures that are reviewed and approved by the CoA are used by TEEKAY to confirm proper conduct of the tests and recording of results. <ul style="list-style-type: none"> • This risk has been closed as IMR was achieved in December 2020.
<p>Production progress Ship 1 Supply</p> <p>There is a chance that the SEA1654 Phase 3 Project may not meet Navy's forecast date for introduction into service for AOR Ship 1, <i>Supply</i>, as a result of delays associated with the production and test program in Ferrol Spain prior to the ship transit to Australia.</p>	<p>Implementation of risk response strategies by Navantia including engagement of additional workforce and prioritisation of engineering publishing activities, as well as active management by the SEA 1654 Phase 3 Project.</p> <p>These strategies have only been partially effective. The delivery of the ship will be delayed somewhat, however this delay is not expected to affect introduction of the ship into service.</p> <ul style="list-style-type: none"> • This risk has been closed as IMR was achieved in

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	December 2020.
<p>State Mandated Travel Restrictions</p> <p>There is a chance that Ship Acceptance (SA2) will be affected by state mandated travel restrictions leading to an impact on the project's cost and schedule.</p>	<p>1. Impact of State Mandated Travel Restrictions have been mitigated by providing letters of support cleared by FAS SHIPS for domestic and international contracted prime and subcontractor staff and AS-SASS for CoA and local contracted support.</p> <ul style="list-style-type: none"> This risk has been closed as IMR was achieved in December 2020.
<p>Procurement, Delivery and Installation of Long Lead Time Part Task Trainers (PTT)</p> <p>There is a risk that PTTs may not be available for training due to lack of on-site Navantia resources caused by travel restrictions.</p>	<p>1. Schedule training to meet availability of PPTs, and on a case by case basis seek alternate subcontract providers to undertake works when original providers unavailable due to travel restrictions.</p> <ul style="list-style-type: none"> This risk has been closed as IMR was achieved in December 2020.
<p>EO and Armament Certification</p> <p>There is a chance that certification of the AOR Explosive Ordinance (EO) facilities will not be awarded by the Materiel Acquisition Review Board (MARB) leading to an inability to achieve Initial Operational Release (IOR).</p>	<p>1 - The Project has engaged an SME to coordinate all EO certification activities in the lead-up to the MARB.</p> <p>2 - Preliminary MARB working groups have commenced, which involves close, collaborative working arrangements with RAN stakeholders. The have been progressing well to date.</p> <p>3 - The Project has sought input from Navantia to link design evidence of compliance against ARM-TC requirements, to speed progression of magazine certification.</p>
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action

5.2 Major Project Issues

Description	Remedial Action
<p>Delays and deficiencies with ILS deliverables</p> <p>Delays and deficiencies associated with a range of Integrated Logistic Support (ILS) Supplies. Incorporating the necessary Technical Data (TD) furnished from subcontracted vendors, as well as the long lead times for the development and delivery of Training (including Training Facilities, Equipment and Aids), are impacting the delivery of the acquisition Support System, contractor Transition/Phase-In activities, and achievement of the OD of the Support Contract.</p>	<p>The SEA1654 Phase 3 Project has agreed corrective actions with Navantia prior to submission of future ILS deliverables for Commonwealth review. This mitigation is ongoing and has seen a significant increase in the quality of ILS deliverables due to the implementation of a number of steps including improved quality processes and engagement of experienced local Australian industry by Navantia.</p> <p>Regular meetings, communication and proactive engagement on Training development and delivery between Navantia, the N2262 Project, Commodore Training - COMTRAIN and the CASG senior management.</p> <p>This issue currently has no realised impact on the forecast schedule for the Materiel Release and Operational Capability Milestones of the AOR Ships.</p> <ul style="list-style-type: none"> This issue is only relevant for Ship 1 as the suite of in-service and product documentations are applicable for both AORs.
<p>COVID-19 induced delays to Ship deliveries</p> <p>There is a chance that the Commonwealth will not have enough suitable resources to witness the remainder of HATs and SATs for ship 1, the Australian fit-out period for Ship 1 at FBW and HATs and SATs for Ship 2 in Ferrol Spain, initially due to delays in Navantia's construction program causing a conflict/overlap between Ship 1 Australian fit-out and Ship 2 testing in Ferrol, and subsequently further impacted by Covid-19 restrictions. As a result, the V&V program may be compromised.</p>	<p>Augment TEEKAY resources to provide adequate test witnessing during the BDTs, HATs, BSTs, and SATs, with management oversight by a CoA appointed site representative on site.</p> <ul style="list-style-type: none"> This issue has been closed as IMR was achieved in December 2020.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
There is a requirement to recognise that projects on an accelerated schedule will have areas of ill-defined scope. Consequently, there needs to be some level of contingency added for these known unknowns (over and above those for standard projects) which can be readily accessed within compressed timeframes and thus avoiding negative impacts on schedule.	Schedule Management
Limitations exist with MOTS purchases when a significant amount of time has passed since the last unit was produced. The MOTS Strategy is most effective when procurement of a system can occur so that it is the next unit on a production run and there is little to no time lapsed in between units being produced. This would minimise the need for subsequent re-design as a result of changes to legislative requirements and or obsolescence issues that occurred during the time interval between production runs. Alternatively, planning needs to consider timeframes for re-design processes.	Off-the-shelf Equipment
<p>Paradigm shifts occur in requirements for which project capability managers may not be fully ready to action. This was experienced with respect to the navigation display systems to be installed on the AOR Ships. This has led to an inability to agree specific scope boundaries and impact a project's ability to manage its suppliers delivering the scope.</p> <p>A faster process for the adoption of new technology and management of paradigm shifts in requirements, including security, would ensure the scope can be agreed and projects can progress towards delivery quicker.</p>	Requirements Management
<p>Conducting an offshore build program has cost and management implications associated with travel and attendance requirement as well as impacts of convenience that should be factored in the development of the project throughout the capability life cycle.</p> <p>Travel and associated costs related to attendance at project meetings, enlisting public servant and/or contracted support for production monitoring and time zone inefficiencies should be factored within the project cost model prior to Gate 2 approval and will continue to require active management during the acquisition phase. Projects managing offshore builds would benefit from having an allowance for a 'permanent' project team local to where the build is taking place.</p>	Contract Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	Mr Peter Croser

Project Data Summary Sheets

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Project Data Summary Sheet¹⁵⁸

Project Number	AIR5431 Phase 3
Project Name	Civil Military Air Traffic Management System (CMATS)
First Year Reported in the MPR	2016-17
Capability Type	Replacement
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Nov 11
Government 2nd Pass Approval	Dec 14
Budget at 2 nd Pass Approval	\$731.4m
Total Approved Budget (Current)	\$974.5m
2020-21 Budget	\$135.5m
Complexity	ACAT I



CMATS

Part 3. Project Data Summary Sheets

Section 1 – Project Summary

1.1 Project Description

AIR5431 Phase 3 seeks to replace the current Fixed Base Defence Air Traffic Management and Control Systems at 12 Australian Defence Force (ADF) fixed base locations with a new harmonised system, referred to as the Civil Military Air Traffic Management System (CMATS). The CMATS component of 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, are being delivered under separately funded works through the Estate and Infrastructure Group, the Chief Information Officer Group and Air Force.

1.2 Current Status

Project Status

AIR5431 Phase 3 was removed from the Project of Concern list on May 2018 but remains a Project of Interest.

Cost Performance

In-year

In-year expenditure to 30 Jun 2021 is \$121.5m against a budget of \$135.5m. The variation is due to delays in Air-Ground-Air Radios contract milestones (\$4m), contractor delay on Site Preparation and Support Costs (\$4m), less than forecast achievement on the On-Supply Agreement (OSA) prime contract (\$4m), and less than forecast requirement for contracted workforce due to delays in the Thales schedule (\$2m).

Project Financial Assurance Statement

As at 30 June 2021, project AIR5431 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 contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining, including contingency, for the project to complete against the agreed scope, noting currently unrealised risks carry some cost risk.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Thales continues to experience challenges in progressing parallel streams of work under the prime contract, which has been further affected by work impacts arising out of COVID workplace restrictions.

Thales was provided conditional approval to exit the Release Zero (Rz) Critical Design Review (CDR) in December 2020 with the signing a side deed with Airservices, which required the completion of identified deficiencies at a later date. CDR commencement was delayed due to a delay in the Preliminary Design Review (PDR) and the difficulty in completing all technical work required to exit the review. There will still be CDR design related work underway until early 2022 and this may impede the ability to commence test activities. The Support System review has been delayed to September 2021 as it is dependent on outputs from the CDR.

Work also continues on the Preliminary Design Review (PDR) for Release 1 (R1 batch 1), which was exited with minor outstanding items in June 2021, as well as the Detailed Design Review (DDR) arising out of the Contract Change Proposal (CCP) 5, which introduced the collaboration options of including Darwin and Townsville approaches into Brisbane Centre and Oakley Approach into Amberley, into the CMATS scope. Note that this DDR is not part of the contracted Major systems Reviews under the contract, but specific to CCP 5 scope only.

158 Notice to reader

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

Defence has agreed with Thales to limited early installation activities at a number of sites where the systems to be installed were assessed to be mature. Thales retains the risk of rework at these sites, should any design changes be identified in any remaining design work.

In December 2020 following a detailed schedule review, Thales declared delays to milestones on which IOC and FOC are based. Defence is still analysing the impact of these delays on the IOC and FOC schedule. The primary reasons for the delays were an underestimation of the complexity of the project and difficulties recruiting the required workforce. COVID-19 also contributed to declining schedule performance, due to state border restrictions, however the full impact is still being investigated.

In late 2020 Defence and Airservices, via the overarching On Supply Agreement, agreed on the final requirements of the alternate tower solution known as the Airservices Defence OneSKY Tower System (ADOTS). Airservices signed contracts with both SAAB and Frequentis who will deliver the Supplies to Defence.

Material Capability Delivery Performance

This program has not delivered any materiel capability to date. As a result of affordability constraints, Defence has accommodated a number of CMATS scope changes to deliver an equivalent capability more cost effectively. The most significant changes are:

- Airservices supplying alternative, non-CMATS Tower Air Traffic Management systems at four locations – Edinburgh, Richmond, Gingin and Oakey via separate contractor;
- Relocating Darwin and Townsville Approach from Darwin and Townsville to the Airservices Approach Centre in Brisbane; and
- Relocating Oakey approach from Oakey to Amberley.

The majority of changes to the CMATS contract with Thales to affect the above changes have now been signed by the contractor. Thales is still finalising flow down of these changes to all of its subcontractors.

Related Materiel Capability is also being managed by Defence and delivered by BAE Systems Australia for the Air Ground Air (AGA) transition solution, Raytheon for the ADATS life-of-type extension and Defence site preparation and support. Delivery of materiel capability associated with these procurements are delivered outside the On-Supply Agreement.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

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 elements necessary for successful integration of the CMATS into the broader Defence ATM system.

The strategic objectives of Airservices and Defence for the CMATS program include:

- To harmonise Australia's civil and military air traffic management systems so as to deliver improvements in safety, efficiency, flexibility, economy and business continuity and accords with the Australian Government's policy to maximise the efficiency of Australian airspace through increased cooperation and collaboration between Airservices and Defence; and
- To successfully acquire, transition, support and operate the CMATS across Australia's national airspace and every major civil and military aerodrome in Australia within agreed schedule, cost and performance constraints.

Consistent with the Government's 2013 Policy for Aviation, Defence will work jointly with Airservices as the lead agency for the CMATS, to establish a harmonised national air traffic system.

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.

AIR5431 Phase 3 achieved Second Pass approval in December 2014 on the basis of tender agnostic capability, schedule and cost data provisioned by Airservices in the form of a Not-to-Exceed (NTE) price for the Defence share of the common and Defence unique elements of the CMATS. After a period of complex negotiations, AIR5431 Phase 3 formally returned to Government in February 2018 and was granted a real cost increase (RCI) of \$243.0m (including contingency) to cover additional CMATS costs, a transition radio solution (AMACCS), Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation. Approval of the RCI for AIR5431 Phase 3 included a requirement that Defence provide 6 monthly updates to Government.

The CMATS offer and negotiation process was protracted, primarily due to the difficulties experienced by Thales in producing an acceptable offer that represented value for money for Defence and Airservices, an underestimation of the time required to settle the requirements, total cost and cost attribution of a harmonised capability and alignment of customer approval processes through two separate governance structures. Notwithstanding, Airservices signed both acquisition and support contracts with Thales in February 2018.

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The joint civil-military acquisition originally intended to procure a principally commercial off-the-shelf (or military off-the-shelf) system; however, the only compliant and viable solutions tendered all required significant development and integration effort to deliver the specified capability. Furthermore, there were no similar civil-military Air Traffic Management systems fielded elsewhere in the world. Due to this, Thales priced a large portion of risk into the fixed price offer to cover uncertainty in software development and site implementation. To better manage this risk, Airservices and Thales agreed to move from a Fixed Price to a Target Price Incentive contract, in order to incentivise Thales to deliver the capability at the lowest price possible. Defence is not subject to the risks or benefits associated with the Target Price Incentive arrangement. The Target Price Incentive model, along with improved relational governance arrangements, provide Defence and Airservices stakeholders confidence that challenges presented during contract execution can be overcome collaboratively through transparency of technical, schedule and cost risk between the parties.

Airservices' management of the contracts with Thales and on-supply to Defence will be governed by an On-Supply Agreement (OSA) executed in February 2018. In addition to defining the on-supply to Defence of the Defence supplies and services delivered to Airservices by Thales, the OSA is underpinned by a principles-based governance framework, aligned to that established between Airservices and Thales for the CMATS acquisition and support contracts.

The CMATS program organisation is structured to ensure Defence provides an equitable contribution towards the delivery of the CMATS. This is achieved through the implementation of a Joint Program Team consisting of both Airservices and Defence subject matter experts, a CMATS Review Group (CRG), consisting of Defence and Airservices senior representatives, and higher level forums above the CRG consisting of the Program Sponsors including CEO Airservices, Chief of Air Force and Deputy Secretary CASG. Whilst the parties have opted for a lead agency construct, the organisation is underpinned by embedded staff and decision-makers to assure that both parties' interests and requirements are addressed in terms of management of the project. However, the dual sponsorship, and the governance and stakeholder management that arises, does lead to challenges where there is a variation between the timelines of approval or organisational direction.

On 18 August 2017, the Ministers for Defence and Defence Industry announced this project as a Project of Concern **based on the Project's difficulties in finalising negotiations with Thales as well as concerns over cost and schedule risk.** AIR5431 Phase 3 was subsequently removed from the Project of Concern list on 8 May 2018 **as a result of the contract being signed in February 2018.** In recognition that AIR5431 Phase 3 will remain complex and require significant governance to ensure capability, cost and schedule risks are adequately managed, AIR5431 Phase 3 will continue to be managed as a Project of Interest **with six monthly updates to Government.**

Uniqueness

CMATS represents the first time that a Defence project is contributing to a major national infrastructure project. The December 2009 National Aviation White Paper identified the need to implement a harmonised national civil and military air traffic management system. The activities identified in the White Paper for the implementation of a comprehensive, collaborative approach to nation-wide air traffic management included the procurement of a single solution air traffic management (ATM) platform between civil and military agencies.

At the time of decision to enter into a joint project arrangement there was no history of a similar governance structure in operation that aligned with the scope of this project. As a consequence, Airservices and Defence have established and continued to refine the CMATS joint delivery structure without the benefit of adapting from proven existing models.

Major Risks and Issues

While both organisations have risk policy and practices in place, Airservices and Defence manage risk separately in accordance with their respective risk management frameworks. The CMATS joint program risk register is maintained and managed by Airservices on behalf of the CMATS program and considers risks that may collectively impact both Defence and Airservices. The joint project risks and issues (those that affect the risks and obligations Airservices and Defence jointly share under the On-Supply Agreement) are managed using the Airservices risk matrix. AIR5431 Phase 3 operates a separate risk register for Defence specific/unique risks and issues, such as resourcing and delivery of items to the joint project. All major risks that have an impact on AIR5431 Phase 3 delivery of the scope of the Materiel Acquisition Agreement (MAA) have been disclosed, regardless of where they are managed.

During the reporting period, the risks identified for AIR5431 Phase 3 and the CMATS joint program have shifted as a result of progress through the system design milestones and a maturing of the agreed Defence scope changes. **The following risks remain under management:**

- Consolidation of approach services into Amberley approach centre and removal of four Defence towers from CMATS scope in absence of detailed definition and planning.
- Delays to the procurement of the Air Ground Air Transition (AGAT) solution may result in insufficient radio assets to enable CMATS and Four Alternate Tower Solution (FATS/**ADOTS**) transition within the agreed contract schedule.
- Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues.
- Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources for the **ADOTS**.
- The functional availability of external Defence delivered systems on CMATS implementation within the Defence ATM environment.
- Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW.
- Inadequate levels of appropriately trained Verification and Validation (V&V) personnel to support V&V activities.
- Availability of the Joint Software Support Facility in time for Rz system of systems readiness demonstration for Rz transition.
- Delayed delivery of the Support System Specification (SSS).
- Insufficient Defence and Airservices project resources to oversight system design work.
- CMATS system maturity and residual **CDR technical work to be completed.**
- Alignment of the maturity-based engineering approach with the software design model and design assurance activities.
- Composition and flexibility of Thales' resource profile.
- Onerous, long-term and ongoing travel obligations associated with site acceptance integration and verification activities.
- If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose.
- Poor provision of Customer Furnished Materials, Supplies and Services including non-compliance of, deficiencies in, or unavailability of CIOG and E&IG infrastructure and networks, will result in the customer impacting the contracted schedule.

<ul style="list-style-type: none"> A failure of the Prime System Integrator (PSI) to align parallel system engineering activities, such as identification and management of interfaces, dependencies and system of systems deliverables may result in omissions or rework in the development and delivery a system of systems solution. <p>The key issues impacting Airservices and Defence have remained relatively stable and continue to be actively managed, these include:</p> <ul style="list-style-type: none"> Insufficient dependent AGAT system assets during CMATS introduction into service will impact current operations. A procurement related risk associated with this issue that has the potential to impact transition activities for CMATS and FATS. Delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2 may impact development and transition into service of CMATS due to the requirement to have data from those radars available to the CMATS system prior to on site testing. Sustained COVID-19 international and domestic restrictions are impacting Thales productivity and their ability to bring specialist resources into country. <p>Other Current Related Projects/Phases AIR5431 Phase 1 – Deployable Air Traffic Control (ATC) Capability will introduce Deployable Air Traffic Management (ATM) command and control systems into the ADF inventory. This phase has no impact on the ability of AIR5431 Phase 3 to deliver its outcomes. AIR5431 Phase 2 – Fixed Base ATC Replacement Capability will replace the existing fixed base defence ATC surveillance radars. AIR5431 Phase 3 is highly reliant on AIR5431 Phase 2 to deliver ATC surveillance capabilities at some sites.</p> <p>Note Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Dec 14	Original Approved (Second Pass Approval)	731.4	1
Dec 17	Real Variation – Budgetary Adjustment	(6.8)	2
Feb 18	Real Variation – Real Cost Increase	247.5	3
Jun 21	Exchange Variation	2.4	
Jun 21	Total Budget	974.5	4
Project Expenditure			
Prior to Jul 20	Contract Expenditure - Airservices Australia	(213.4)	5
	Contract Expenditure - Jacobs Australia - Integrated Support Contract	(27.0)	
	Contract Expenditure - Jacobs Australia - Integrated Work Package		
	Contract Expenditure - BAE	(15.2)	
	Other Contract Payments/Internal Expenses	(8.1)	
		(34.5)	
		(298.2)	
FY to Jun 21	Contract Expenditure - Airservices Australia	(73.4)	6
	Contract Expenditure - Jacobs Australia - Integrated Work Package	(12.9)	
	Contract Expenditure - BAE		
	Other Contract Payments/Internal Expenses	(27.5)	
		(7.8)	
		(121.6)	
Jun 21	Total Expenditure	(419.9)	
Jun 21	Remaining Budget	554.6	
Notes			
1	In addition to these direct project costs, Defence received approximately \$175m for Major Capital Facility costs and enabling ICT costs.		
2	This variation is due to administrative decisions to temporarily harvest funds from the project. These funds were returned to the project as part of the RCI approved in February 2018. These funds were part of the original Second Pass approval budget.		
3	A RCI of \$249.7m was approved by Government in February 2018 to cover additional costs related to the acquisition. This includes \$2.2m for Air Force to relocate the current Tindal Australian Military Airspace Control Communications System (AMACCS) air traffic control radio equipment site, leaving \$247.5m for CASG related costs (additional CMATS costs, AGAT radio solution, Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation). This figure includes the \$6.8m returned to the project to correct the Budgetary Adjustment which occurred in December 2017. Given this, the total approved RCI above Second Pass approval is \$242.9m including the \$2.2m for Air Force.		
4	The total budget included planned expenditure for the Air Ground Air Transition Solution, ADATS life-of-type extension and Defence site preparation and support. These procurements have been incorporated into Section 2.3 as each agreement was reached.		

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5	Other contract payments/internal expenses to 30 Jun 2020 include \$16.3m expenditure on Autotrac II with the remainder being Operating expenditure, contractors, minor contract expenditure and other capital expenditure not attributable to the listed contracts.
6	Other Contract Payments in FY 20/21 include \$5.7m expenditure on site preparation, \$1.7m on Autotrac II Procurement and the remaining \$0.4m being other contract payments/internal expenses.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
93.7	136.3	135.5	PBS - PAES: The variation is primarily due to a change in the phasing of expected On-Supply Agreement costs with Airservices Australia. PAES - Final Plan: Exchange Rate Variation
Variance \$m	42.6	(0.8)	Total Variance (\$m): 41.8
Variance %	(45.5)	(0.6)	Total Variance (%): 44.6

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		13.9	Australian Industry	The variation is due to slippage in Air-Ground-Air Radios contract milestones (\$4m), contractor delay on Site Preparation and Support Costs (\$4m), less than forecast achievement on the OSA prime contract (\$4m), and less than forecast requirement for contracted workforce due to delays in the Thales schedule (\$2m).
			Foreign Industry	
			Early Processes	
		0.1	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
135.5	121.5	14.0	Total Variance	
		10.3	% Variance	

2.3 Details of Project Major Contracts

Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Jacobs Australia – Integrated Support Contract	Dec 14	107.7	27.0	Variable	Modified Standard Defence Contract	1,2
Airservices Australia	Feb 18	521.0	551.4	Fixed	On Supply Agreement	1,3
Jacobs Australia – Integrated Work Package	Dec 18	47.0	78.9	Variable	Integrated Work Package	1,4
BAE – Air-Ground-Air Communications Solution	Nov 19	67.4	67.2	Fixed	Support Contract Survey and Quote	1
Notes						
1	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current budgeted exchange rates, and includes adjustments for indexation (where applicable).					
2	This contract is closed following the transition to a Branch wide Integrated Work Package (IWP) contract.					
3	CMATS will be procured via the Contracts (Acquisition) and (Support) between Airservices and Thales. Airservices manages both Contracts with Thales on behalf of Defence through the OSA. Due to exchange rate variance, the addition of Defence approved scope and the inclusion of Contract (Support), the price of the OSA will increase over time.					
4	The project workforce structure is based on the CASG First Principles Review with 80% of the project staff being delivered under the IWP contract. Contract value is the estimated Project share of the Branch IWP contract and is based on the estimate of project expenditure for 10 x 6 monthly work packages to the end of December 2023. The increase in contract price from the original is not a reflection on Jacobs' contract performance. It is mainly due to a combination of the increase in length of the project due to delays by Thales, and the incremental strategy in CDRL delivery and the increase in resources required to support the extra parallel activities as a result of the aggressive schedule Thales adopted.					
Contractor	Contracted Quantities as at		Scope	Notes		
	Signature	30 Jun 21				
Jacobs Australia	N/A	N/A	Service based integrated support.			

Airservices Australia	N/A	N/A	Through the OSA, delivery of CMATS control tower and approach centres at Amberley (including Oakey approach), East Sale, Williamtown, Tindal and Nowra, consolidated Darwin and Townsville approach services at Airservices Brisbane approach centre, CMATS control towers at Darwin, Townsville and Pearce and a simulator system at SATC.	1
Jacobs Australia	N/A	N/A	Serviced based integrated work package.	
BAE Systems	N/A	N/A	Procurement, design, integration and installation of a new Air Ground Air Communications system across the twelve Defence Sites. This includes the procurement and integration of radio communications equipment that will replace the existing AMAAC System (currently sustained by BAE).	
Major equipment accepted and quantities to 30 Jun 20				
Nil.				
Notes				
1	This was a result of revised schedule Control tower systems for Oakey, Gingin, Richmond and Edinburgh (also referred to as the Four Alternate Tower Solution (FATS)) will be delivered within the agreed fixed-price cap of \$521.0m. The obligation for Airservices to provide FATS was established through the OSA signed 22 February 2018. The FATS Statement of Work and Functional Performance Specification are the subject of negotiations between Defence and Airservices.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	CMATS System Requirements Analysis	Aug 17	N/A	Jan 18	5	1
Preliminary Design Rz	CMATS	Oct 19	N/A	Dec 19	2	3, 5
Critical Design Rz	CMATS	Apr 20	Sep 20	Dec 20	8	3,6
Design Release Baseline Review Rz batch 1	CMATS	Apr 21	Jun 21	Jun 21	2	9,6
Support System Critical Design Review Rz	CMATS	Apr 20	Jun 21	Sep 21	17	
Preliminary Design Review R1 final	CMATS	Jan 22	Mar 22	TBA	2	4,10
Critical Design Review R1	CMATS	Sep 22	Jan 23	TBA	4	4,10
Preliminary Design Review R2	CMATS	Jun 23	Nov 23	TBA	5	4,10
Critical Design Review R2	CMATS	Feb 24	Jul 24	TBA	5	4,10
System requirements	Alternate Towers Via Airservices	not yet agreed				7
Notes						
1	Airservices entered into contact with Thales for the acquisition of the CMATS in February 2018; System Requirements Analysis was achieved later than expected due to an underestimation of the effort required to develop the Functional Baseline.					
2	Not used					
3	Rz is the initial Defence system build for the first five Defences sites and represents the minimum software functionality for safe air traffic services at Defence sites. R1 is a software release that represents the minimum functionality required for Airservices to operate Brisbane and Melbourne Air Traffic Centres. R2 is a software release that represents the full CMATS functionality.					
4	Thales is currently conducting a significant schedule replan of the CMATS deliverables. This will also affect the timing of when the ADOTS sites can be delivered. The project expects this replan to be complete by November 2021 and the project will then update this table. The variance column has been retained to track the last reported variances					
5	Although the design review was exited in December 2019, a number of technical issues were not resolved but were due to be completed by August 2020. This was not achieved and the issues rolled into CDR activities.					
6	CMATS CDR was exited with a number of significant deficiencies. These are being managed through a new process called a design release baseline review (DRBR). DRBR was completed in June 2021 but the specifications at DRBR still require updating to meet the entry criteria for Test Readiness Review (TRR) Rz.					

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7	Airservices signed contracts with SAAB and Frequentis in December 2020, These contractors have yet to provide a schedule for the system engineering milestones for ADOTS that can be agreed by the customer
8	Not used.
9	This milestone is not part of the original contract milestones and is specific to the Deed negotiated with Thales to complete the significant number of outstanding actions arising from CDR Rz. However, the DRBR in June 2021 was for an interim Specification and did not meet the entry criteria for entry into TRR Rz.
10	Thales have provided schedule analysis for dates associated with IMR, IOC, FMR and FOC, based on a 90% probability of achieving those dates. These Intermediate milestones have not yet been through that process and will need to be updated when that information is available.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved / Forecast	Variance (Months)	Notes
Rz System verification	CMATS	N/A	Mar 22	TBA	0	
System Acceptance	SATC - CMATS	Jan 22	Oct 22	TBA	8	4
	RAAF Base East Sale - CMATS	May 22	Jan 23	TBA	7	4
	RAAF Base Amberley - CMATS	Jun 22	Feb 23	TBA	7	4
	RAAF Base Edinburgh - FATS	Jun 22	TBA	TBA	0	1,4
	RAAF Base Pearce - CMATS	Oct 22	Jul 23	TBA	8	4
	RAAF Base Gingin - FATS	Oct 22	TBA	TBA	0	1
	RAAF Base Tindal - CMATS	Nov 22	Jul 23	TBA	7	4
	Army Aviation Centre Oakey - FATS	Nov 22	TBA	TBA	0	1,4
	RAAF Base Townsville - CMATS	Nov 23	Sep 24	TBA	10	4
	Naval Air Station Nowra - CMATS	Mar 24	Nov 24	TBA	8	4
	RAAF Base Williamtown - CMATS	Apr 24	Oct 24	TBA	6	4
	RAAF Base Darwin - CMATS	Apr 24	Sep 24	TBA	5	4
	RAAF Base Richmond - FATS	May 24	TBA	TBA	0	1
Rz System Acceptance	CMATS	Aug 22	Mar 23	TBA	7	2
R1 System Acceptance	CMATS	Jul 24	Dec 24	TBA	6	4
R2 System Acceptance	CMATS	Feb 25	Jul 25	TBA	6	4
Final Acceptance	CMATS	Aug 25	Feb 26	TBA	6	4
Notes						
1	The planned date was based on the original contract before these sites were de-scoped from the Thales contract. Forecast dates are expected to be updated once the ADOTS schedules have been agreed					
2	Rz System Acceptance includes East Sale Tower and Approach (including the School of Air Traffic Control (SATC)), Amberley Tower and Approach including consolidated Oakey Approach and Edinburgh ADOTS Tower. The selected sites constitute the AIR5431 Phase 3 IOC, as the combination of these sites demonstrates all possible system variants for Defence's portion of the CMATS system.					
3	Not used.					
4	Thales is currently conducting a significant schedule replan of the CMATS deliverables. This will also affect the timing of when the ADOTS sites can be delivered. The project expects this replan to be complete by November 2021 and the project will then update this table. The variance column has been retained to track the last reported variances					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Aug 22	TBA	7	1,4
Initial Operational Capability (IOC)	Jun 20	TBA	48	2,3,4
Final Materiel Release (FMR)	Aug 25	TBA	6	1,4
Final Operational Capability (FOC)	Jun 23	TBA	46	2,4
Notes				
1	The IMR and FMR milestones reflect the advice provided to Government in December 2019 and are included in MAAv3. The timing between IMR to IOC and FMR to FOC are constant. The apparent differences in variance between IMR/IOC and FMR/FOC is the result of using a different basis for the original date. The original date for IOC/FOC is the tender documentation whereas the original date used for IMR/FMR is the February 2018 Thales contract date for those milestones. The IMR/FMR dates are only for the Thales contract.			

2	The initial delay to IOC and FOC is due to a protracted period of complex negotiations between the customer and Thales. Previously reported delay to IOC and FOC against the original planned dates were 29 and 28 months respectively. Additional delay was reported during the last reporting period and was 7.2 months to IOC and 6 months to FOC. The IOC slippage was due to delays in executing, and additional design work resulting from, CCPs 4 and 5. The slippage of FOC was due to the incorporation of additional system automation requirements arising from CCP2. In December 2020, Thales announced additional delays which are likely to delay the IOC and FOC milestones further; the implications to IOC/FOC remain under analysis by Defence.
3	IOC also includes RAAF Base Edinburgh ADOTS. There is no firm date for RAAF Base Edinburgh delivery. The IOC date assumes that the delivery date will be no later than the other IOC sites.
4	Thales is currently conducting a significant schedule replan of the CMATS deliverables. This will also affect the timing of when the ADOTS sites can be delivered. The project expects this replan to be complete by November 2021 and the project will then update this table. The variance column has been retained to track the last reported variances
<p align="center">Schedule Status at 30 June 2021</p>	
<p>Notes</p> <p>Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>	

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	<p>Green: The project expects to meet the capability requirements as expressed in the Joint Project Directive, Materiel Acquisition Agreement and relevant Technical Regulatory Authority. While a number of Defence related scope changes have been agreed (i.e. Airservices supplying an alternate non-CMATs Tower solution at four Defence sites – Edinburgh, Richmond, Gingin and Oakey; relocating Darwin and Townsville approach from Darwin and Townsville to the Airservices Approach Centre in Brisbane; and relocating Oakey Approach from Oakey to Amberley) these will not impact on the safe delivery of Defence air traffic services.</p> <p>Amber: N/A</p> <p>Red: N/A</p>
<p>Note</p> <p>This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>	

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Amberley, East Sale (including SATC) and Edinburgh transitioned from ADATS. Forecast achievement date March 2023.	Not yet achieved
Initial Operational Capability (IOC)	Amberley, East Sale, SATC and Edinburgh have been accepted into Operational service. Forecast achievement date June 2023.	Not yet achieved

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Final Materiel Release (FMR)	Delivery of all CMATS material system elements configured to the final system build. Forecast achievement date February 2026.	Not yet achieved
Final Operational Capability (FOC)	All Defence Sites have been accepted into operational service. Forecast achievement date April 2026.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)		
Description	Remedial Action	
Poor provision of Customer Furnished Materials, Supplies and Services including non-compliance of, deficiencies in, or unavailability of CIOG and E&IG infrastructure and networks, will result in the customer impacting the contracted schedule.	The project continues to conduct effective and regular engagement with service providers and suppliers, building confidence through working groups and configuration change boards. However, sustained COVID-19 international and domestic restrictions are likely to continue to affect this risk, particularly in relation to foreign sourced long lead time equipment and cross border travel for personnel for site based services.	
Delays to the Air Ground Air (AMACCS) transition solution, which includes any modifications to existing gantries, may result in the AGA capability not available to enable CMATS and FATS transition within the agreed contract schedule.	Contract with BAE signed in November 2019. Strategies such as progressive delivery and concurrent build, installation and testing are being considered to meet site schedule constraints. However, now site work has started, this has exposed some additional issues that affect this risk area.	
There is a risk that the new digital radio interface may not be compatible with the current remote radios provided by Airservices.	The project is working with the System Program Office (SPO) to transition the remote radios to an IP based solution.	
Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues.	Implement recommendations articulated in the plan developed by the INFOSEC Registered Assessors Program (IRAP) assessor, outcomes from this activity will be input into the joint security working group to develop the CMATS accreditation plan. This risk has now been downgraded to medium based on a greater understanding of the system design.	
Agreement to consolidate Darwin and Townsville approach services into the Airservices Brisbane approach centre, Oakey approach services into Amberley and removal of four Defence towers (Richmond, Edinburgh, Gingin and Oakey) from CMATS scope in absence of detailed definition and planning creates dependency complexity.	This risk has been downgraded to Medium, through the mitigations below. Ensure that no extant rights and protections are watered down through subsequent variations to the OSA. And ensure the Defence team understand how the OSA applies to their role and the work they do. Ensure that CMATS ECPs, subsequent FATS agreement and other requirements/scope (outside of CMATS) are clearly articulated and agreed to obligate Thales/AsA to deliver CCP5 signed and initial engineering work commenced on the changes to the extant design. Project resources have been identified / delegated to closely manage the requirements and AsA's delivery performance.	
Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources, may impact the delivery of the Four Alternate Tower Solution (FATS) at Richmond, Edinburgh, Gingin and Oakey.	Defence is working closely with Airservices in the requirements and contracts and has engaged additional resources to provide closer engagement.	
Implementation of CMATS within the Defence ATM environment may be impacted by the functional availability of external Defence delivered systems, potentially limiting the ability of the Defence portion of the ATM solution to meet regulatory and licencing requirements.	Air Force are engaged through the Stakeholder Working Group (SWG) to analyse each function end-to-end to establish those systems that don't meet the availability requirements and identify possible mitigation options for shortfalls.	
Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW, this may lead to schedule delay and cost transfer from Thales to the customer.	Defence are closely monitoring the CMATS design process to raise areas of concern early, as well as ensure the Systems Engineering Management Plan includes customer constraints.	
An inadequate level of appropriately trained personnel to support V&V activities, may lead to system acceptance of test results non-compliant with JFPS requirements, resulting in delays and rework.	Action is being taken to source additional resources through the Major Service Provider (Jacobs) and suitable courses identified to ensure personnel are trained in the conduct of V&V activities.	
The Joint Software Support Facility may not be available or operationally effective in time for demonstrating Rz system of systems readiness for Rz transition, this may cause delays to commissioning at Rz sites.	This risk is being addressed via a provisional acceptance process through each functional baseline validation and regression testing. Identification of alternate acceptance strategies for Defence sites may be required.	

Delivery of the Support System Specification (SSS) has been delayed; this is a key product for the determining the Allocated Baseline (ABL) for CDR and may result in schedule delays to the SSCDR deliverables that influence the support system design.	This risk has been downgraded to Medium, through the mitigations below. Technical Review Meeting (TRM) to verify and drive alignment Thales SoS Maturity Plan to ensure no gaps between FBL & ABL and is confirmed by Internal System Reviews (ISR) Pursue alignment through PRM / TRM / IBR.
A lack of Defence and Airservices project resources may impact oversight of system design work as it relates to PDR unresolved technical issues and the Critical Design Review (CDR) milestone, and impact on system design.	Improvement in the Joint project organisational structure, and resource allocation to work packages, to enhance flexibility within the CMATS program, which have been tailored to focus on strategic elements against maturity goals.
CMATS system maturity and outstanding technical activities not yet resolved may impact the progression of the ABL through the PDR, CDR and Test Readiness Review (TRR) milestones, resulting in schedule impacts to R2 sites, with the potential for flow on effects to R1 and R2 implementation.	Post PDR planning identified a need for the customer to focus on oversight and assurance of the system maturity profiles, areas of outstanding technical activities not yet resolved and reinforce Thales' role as the Prime System Integrator.
The maturity-based engineering approach adopted for CMATS requirements analysis may not align with the software design model and design assurance activities prescribed by the relevant industry standard.	A plan to satisfy the software design assurance objectives has been jointly developed between the Customer and Thales.
Thales' resource profile lacks flexibility and the necessary composition of skills to concurrently deliver the requirements for the Mandated System Review milestones and cater for ECPs and CCPs. This risk is compounded by staff turnover, leading to productivity inefficiencies and potential schedule delay.	Ongoing monitoring of Thales' progress to address resourcing composition is occurring through the Program Review Board. Independently, Thales are implementing an aggressive recruitment and retention activity to address the high staff turnover/ staff shortages .
Site acceptance and the quality of site integration and verification activities, may be impacted by a requirement to support onerous, long-term and ongoing travel obligations. State based COVID-19 restrictions may also impact these activities.	Strategies that focus on the recruitment of suitably skilled resources within proximity of each sites is being undertaken.
Delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2 may impact development and transition into service of CMATS.	This risk has now been realised and is reported as an issue of section 5.2 in this PDSS.
If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose.	Defence teams will undertake conformance checks between key documents, and specifically assess the service delivered over interfaces as part of the test and evaluation program prior to final delivery.
The increased cost of the project Major Service Provider resources supporting testing and the introduction into service of new systems as a result of potential delays to the Thales delivery schedule.	Project to on board resources at timings which align as far as possible with revised Thales schedules to minimise any additional costs
Sustained COVID-19 international and domestic restrictions are impacting Thales productivity and their ability to bring specialist resources into country with a potential consequence of schedule delays.	Thales have commenced a recruitment campaign to recruit the additional resources and are reporting regularly to the Joint Project Team on its progress towards its goals.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
N/A	

5.2 Major Project Issues

Description	Remedial Action
AIR5431 Phase 3 is unable to introduce CMATS into service without impacting current operations due to insufficient dependent AMACCS system assets.	While the Air Ground Air (AGA) transition solution is now in contract there is still uncertainty on the availability of new generation radio assets and viable fall-back options for ongoing delays in execution of the AGA transition contract with BAE.
Delays to the delivery of the Fixed Base Radar system under AIR5431 Phase 2 has impacted development and transition into service of CMATS due to the need to have sensor data from those radars available for interface testing prior to CMATS installation at sites.	Alternate sources of radar data required to enable CMATS design, test and evaluation and verification and validation activities are being investigated. Options for live data sources to support operations are also being considered. Close coordination with AIR5431 Phase 2 is occurring to determine the best strategic way to manage this risk.
Premature exit of the Critical Design Review with major deficiencies in the Release Zero Design still to be addressed.	The lead agency, Airservices Australia, have accepted the risks and liabilities of the decision to exit Critical Design Review with major deficiencies in the Release Zero design still to be addressed.

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The increased cost of the project Major Service Provider resources supporting testing and the introduction into service of new systems as a result of potential delays to the Thales delivery schedule.	Project to effectively on-board resources at timings which align as far as possible with revised Thales schedules to minimise any additional costs. However, as noted in Section 2.3, Note 4, the likely cost of this issue would put it into the high to extreme category
The joint program has not yet finalised remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities.	This risk has been retired now that Aircservices have completed the transition to SharePoint and it is now the system in use for managing data and correspondence.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Set up the Governance structure earlier in the process – the decision regarding lead agency and harmonisation was determined at a strategic level without detailed analysis of the nuances between the two organisations. Although there is now a robust governance structure in place, there are still areas of disunity that are now difficult to change.	Governance
Better communication with Stakeholders - although the establishment of joint project was at the direction of a harmonisation initiative of the Government, the joint project has been slow to re-engage with stakeholders, up to and including Government, to seek refined direction based on prevailing and emerging risks and issues.	Contract management/Governance
A lack of resources at the initiation stage of the project, and during the preparation of the Request For Tender, can create a significant technical and stakeholder management debt that will affect the ability to agree on requirements, forecast a realistic schedule and determine future workforce requirements.	Resourcing
Whilst waiting to initiate dependant projects (i.e. facilities) 'just in time' increases the risk of delays to the delivery of the prime mission system, starting dependant projects too early can result in them being delivered so far in advance of the prime mission system, that the outputs of the dependant project no longer satisfy the 'evolved' mission system intent.	Schedule Management
As a result of long-running schedule maturity issues, it is recommended that long-term planning beyond the nearest major milestone is essential to reducing program risk and sub-optimal short-term planning, and furthermore schedule logic applied to the Contract Master Schedule (CMS) must reflect the logic identified in the contract to ensure activities are sequenced according to precedence and priority.	Schedule Management
Aggressive timeframes to meet schedule milestones often results in compressed timeframes to engage stakeholders (operational, engineering/technical and strategic), leading to compromises to proper requirements management. Consequently, a schedule needs to be developed to include opportunities for specified periods of stakeholder consultation and alignment during the capability delivery life-cycle.	Schedule Management/Governance

Section 7 – Project Line Management

7.1 Project Line Management as at 30 Jun 2021

Position	Name
Division Head	Mr Shane Fairweather
Branch Head	AIRCDRE David Scheul

Project Data Summary Sheet¹⁵⁹

Project Number	LAND200 Tranche 2
Name	BATTLEFIELD COMMAND SYSTEM
First Year Reported in the MPR	2019-20
Capability Type	Upgrade
Capability Manager	Chief of Army
Government 1st Pass Approval	Aug 13
Government 2nd Pass Approval	Sep 17
Budget at 2 nd Pass Approval	\$930.0m
Total Approved Budget (Current)	\$962.3m
2020-21 Budget	\$116.6m
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

LAND200 is delivering the Battlefield Command System (BCS) capability that provides Army with a Battle Management System (BMS) and an integrated Tactical Communications Network (TCN) that is transforming command and control of Land forces into a modern networked system. The BCS will provide fast, accurate, secure and reliable digital communications that will enable tactical Land forces to make better informed decisions, by distributing the right information to the right people at the right time, increasing the likelihood of operational success and soldier safety via friendly force tracking.

LAND200 Tranche 2 (LAND200-2) is: expanding and evolving the LAND200 Tranche 1 (LAND200-1) capability across Army with new collaborative planning, control and monitoring tools for Brigade and Divisional-level headquarters; integrating the BCS into an additional 540 platforms: including M1A1 tank, M88 armoured recovery vehicle, Hawkei, Bushmaster and Medium Heavy Cargo trucks; and the Program will embed BCS training into Army's training institutions to evolve from a paper based to a digital based learning capability.

The Commonwealth is the LAND200-2 Program's Prime System Integrator (PSI) supported by two prime contractors: Elbit Systems (Israel) Ltd (Elbit) is the contractor for the BMS; and Harris Communications (Australia) Pty Ltd (L3Harris) is the contractor for the TCN.

1.2 Current Status

Cost Performance

In-year

For financial year 20/21 the project spent \$67.5m against a planned budget of \$116.6m, resulting in a variance of -\$49.1m. The variation is due to the BMS contract experiencing significant delay. The delay is a result of the Project being unable to achieve the exit criteria associated with the Release 1.1 Software Release Review milestone and the Commonwealth being unable to provide some items of Government Furnished Materials (GFM)). The Commonwealth is working with Elbit to address these delays.

Project Financial Assurance Statement

As at 30 June 2021, project LAND200-2 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget, including contingency, remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

LAND200-2 has established contracts with Elbit for the delivery of the BMS and L3Harris for delivery of the TCN. Elbit has completed the integration and installation of the Tranche 1 components onto the Medium Heavy Cargo trucks and has delivered BMS training systems and Release 1 of the BMS software. L3Harris has completed Preliminary Design and Detailed Design, however Stop Payments were invoked with L3Harris in October 2020, due to an inability to achieve the exit criteria associated with the Detailed Design Review milestone. The Commonwealth worked with L3Harris to achieve the exit criteria and the Stop Payment condition was lifted in late October 2020.

159 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.

<p>LAND200-2 has experienced schedule delays under both the Elbit contract for the BMS and the L3Harris contract for the TCN. The delays have resulted from the Commonwealth's inability to provide all the required Government Furnished Material (GFM) and contractor delays in meeting contract milestones.</p> <p>A Contract Change Proposal (CCP) was finalised with L3Harris in financial year 19/20 that recognised a 10 month delay to the L3Harris contract, with costs shared between the Commonwealth and L3Harris.</p> <p>A CCP is currently being workshopped with Elbit to remove the integration and installation scope from the PMV-M, M1A1 and M88.</p> <p>A CCP for the integration of the Mission Partner Environment (MPE) in lieu of the Defence Secret Network has been finalised with the introduction of a new milestone, covering BMS Release 1.1.</p> <p>The progress of BMS Release 1.1 has been delayed because of an inability to exit the Software Release Review milestone. The Commonwealth and Elbit are continuing to work through known issues. Defence and Elbit are undertaking a technical review to consider the remaining scope to be delivered under the BMS Contract.</p> <p>In June 2021, Elbit advised that completion of the BMS Contract's Final Acceptance milestone would occur no earlier than February 2024, due to a number of issues including availability of GFM and the inability to meet milestone exit criteria. The Commonwealth is assessing the impact of this delay and continues to work with Elbit to progress delivery of capability</p>
<p>Material Capability Delivery Performance</p> <p>LAND200-2 has delivered: 150 Medium Heavy Cargo trucks fitted with the Tranche 1 BCS node; Foundation Training Classroom requirements, and new and retrofitted BMS Training Assemblages, BMS C2 Software Release 0 and BMS C2 Software Release 1. LAND200-2 will deliver a further 390 vehicle BCS node integrations and installations with the M1A1, M88, PMV-M and PMV-L platforms. Additionally, LAND200-2 will deliver the BMS-HQ software hosted on the MPE, Syndicate Room/Tactical Exercise Without Troops (TEWT) training requirements, BMS simulator systems and L3Harris AN/PRC-158 multi-channel multi-band radios.</p> <p>The remaining node design descriptions are being updated to accommodate network architecture changes requested by the Army Program Sponsor.</p> <p>Limited availability of required Government Furnished Data in support of the Weapons Integrated BMS (WINBMS) for the M1A1 has resulted in a request from Army to remove this scope item from the Elbit contract. Based on direction from the Army program sponsor, the project does not expect to deliver the Hawkei GSV node: this is offset by the direction from the Army Program Sponsor to increase the delivered quantities of Hawkei C2V and MNV nodes.</p> <p>Defence and Elbit are undertaking a technical review to consider the remaining scope to be delivered under the BMS contract.</p>
<p>Note</p> <p>Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>

1.3 Project Context

<p>Background</p> <p>The LAND200 program is a core program that fundamentally influences the way Land Forces plan, command and control operations from frontline soldiers and combat vehicles up to and including deployed Joint Force Headquarters. LAND200 systems provide war-fighters with common battlefield awareness and information superiority through a highly capable, mobile and secure networked environment.</p> <p>In August 2013, LAND200-2 was presented to Government as a federation of two projects; JP2072 Phase 3 and LAND75 Phase 4. At this time, LAND200-2 received Government Combined Pass Approval for the continuation of LAND75 Phase 3.4, LAND125 Phase 3A and JP2072 Phase 1 (approved as LAND200-1) and First Pass Project Approval for new work to be delivered under LAND200-2.</p> <p>LAND200-1 and LAND75 Phase 4 Work Package A delivered the Battle Group and Below Command, Control and Communications System (BGC3) for approximately one-third of the Land force. The BGC3 was primed by Elbit which integrated Raytheon and L3Harris radios acquired by JP2072 Phases 1 and 2. LAND200-1 and LAND75 Phase 4 Work Package A:</p> <p>Installed the BGC3 into dismounted commanders, Bushmaster PMV, Unimog, G-Wagon and Armoured Personnel Carrier M113AS4.</p> <p>Delivered a Track Management System (TMS) as the primary interface between the BMS and Joint and US Coalition systems providing an exchange of situational awareness data and the Land Forces common operational picture.</p> <p>LAND75 Phase 3.4 and LAND125 Phase 3A achieved Initial Operating Capability (IOC) in April 2012 and Final Operating Capability (FOC) in March 2015.</p> <p>Final Materiel Release (FMR) for LAND75 Phase 4 Work Package A (the final deliverable for the project) was achieved in December 2017.</p> <p>LAND200-2 put forward a procurement decision for the further development of the BMS, which commenced under LAND75. No Military Off-The-Shelf BMS product was available that provided all of the Army requirements.</p> <p>In September 2017, Second Pass Government Approval was provided for LAND200-2. This Government Approval draws together both projects to formulate under the name LAND200 Tranche 2 (Phase 2) Battlefield Command Systems. Under this approval, LAND200-2 will deliver:</p> <p>An integrated Battle Management System – Command and Control (BMS-C2) with a supporting TCN into new vehicle platforms as part of the digitised land force. In addition to this, a modernised TCN with a new vehicle mounted communications system solution will be acquired by current and future LAND200 platforms programs.</p> <p>Institutionalised BMS-C2 and TCN training and simulation across land forces.</p> <p>Expanded functionality of the BMS-C2 to incorporate additional decision and planning tools for use at the Joint Task Force and Brigade Headquarters level.</p>

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<p>The project was not approved under the revised Capability Life Cycle model and therefore did not undergo a Smart Buyer review. The project was subsequently the subject of a Smart Buyer workshop in September 2019, in order to consider the architecture changes requested by Army. The Project has not been considered by a Smart Buyer assessment this financial year.</p> <p>The project was listed as a Project of Interest in September 2018 due to issues associated with vehicle integration and the drawdown of 30% of the Project's contingency to treat the issues.</p>	
<p>Uniqueness</p> <p>LAND200 is delivering the core of Army's digital Command, Control and Communications capability. It is a highly complex project in part due to the integration of new leading edge technologies but also of programmatic interdependencies associated with the BCS being integrated into all the Land Forces deployable headquarters from Platoon to the Division and nearly all of Army's Land platforms and several Naval amphibious capabilities.</p>	
<p>Major Risks and Issues</p> <p>The project is currently managing the following major risks:</p> <ul style="list-style-type: none"> • Incorporation of PMV-L modifications with the LAND 121 Phase 4 deliveries. • Contract impacts resulting from delayed Land Data Model development. • Funding for the combined implementation of LAND200-2 modifications with PMICA. • Delay to the security accreditation of TCN software. • A delay to the BMS SIM TTP Capability resulting from issues with external interdependencies. <p>The project is also managing the following project issues:</p> <ul style="list-style-type: none"> • PMV-M installation delay. • Delayed implementation of the M1A1 and M88 modifications, and necessary de-scoping of Elbit contract. • Node design architecture changes. • Funding pressure associated with the procurement of Vehicle Installation Kits for PMV-M Gateway. • Delayed delivery of BMS Release 2. • BMS Release 1.1 is yet to satisfy the release criteria associated with the Software Release Review 1.1. • Delay to TCN System Acceptance. 	
<p>Other Current Related Projects/Phases</p> <p>LAND200-2 has direct BCS integration interdependencies with several other Defence Projects and Products, including: LAND 121 Phase 4 Protected Mobility Vehicle (Light) Hawkei; Mounted Combat System Program Office (Product CA01 M1A1 Tank and M88 Armoured Recovery Vehicle); and Commercial and General Service Vehicle Systems Program Office (Product CA-04 Protected Mobility Vehicle – Medium Bushmaster).</p>	
<p>Note</p> <p>Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>	

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Sep 17	Original Approved (Second Pass Approval)	930.0	1
	Total at Second Pass Approval	930.0	
Jun 21	Exchange Variation	32.3	
	Total Budget	962.3	
Project Expenditure			
Prior to Jul 20	Contract Expenditure – L3Harris Communications	270.7	2
	Contract Expenditure – Elbit Systems	276.3	
	Contract Expenditure – Downer EDI Engineering Power Pty Ltd ¹⁶⁰	8.3	
	Contract Expenditure – Thales Australia Limited	0.0	
	Other Contract Payments / Internal Expenses	18.7	
		574.0	
FY to Jun 21	Contract Expenditure – Elbit Systems	2.0	3
	Contract Expenditure – L3Harris Communications	39.3	
	Contract Expenditure – Downer EDI Engineering Power Pty Ltd	12.7	
	Contract Expenditure – Thales Australia Limited	2.9	
	Other Contract Payments / Internal Expenses	10.6	
		67.5	
Jun 21	Total Expenditure	641.5	
Jun 21	Remaining Budget	320.8	

¹⁶⁰ This is the Team Downer Major Service Provider (MSP) arrangement for the provision of a multi-discipline workforce to deliver the LC4S Branch Integrated Works Package (IWP).

Notes	
1	The Second Pass budget excludes First to Second Pass Approval funding for Work Packages B, C and D (these prices were combined with the Combined Pass Approval for Work Package A captured within the JP2072 Phase 3 and LAND75 Phase 4 projects).
2	Other expenses for prior years includes \$8.7m for Technical Services, \$3.2m for Specialist Military Equipment, \$2.3m for Operational Plant & Equipment, \$1.6m for Travel, \$1.6 for Software Licenses and \$1.2m for Miscellaneous.
3	Other expenses for FY 20/21 include \$5m for Technical Services, \$3.2m for Specialist Military Equipment, \$0.7m for Operational Plant & Equipment, \$0.5m for Freight, \$0.4m for Project Maintenance Contracts, \$0.3m for General Stores Inventory and \$0.5m for Miscellaneous.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
216.5	118.5	116.6	PBS to PAES: The variation is primarily due to the need to finalise a number of contract change proposals, which will update the payment and delivery schedules for both the BMS and TCN prime contracts. PAES to Final Plan: A stronger Australian dollar has resulted in a minor variance to the \$AUD equivalent planned Budget for 20/21.
Variance \$m	(98.0)	(1.9)	Total Variance (\$m): (99.9)
Variance %	(45.3)	(1.7)	Total Variance (%): (46.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		49.1	Australian Industry	The variance is a result of the inability to achieve the exit criteria for the Release 1.1 Software Release Review milestone and the inability to finalise Contract Change Proposals (CCP) to the Elbit BMS contract.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
116.6	67.5	49.1	Total Variance	
		(42.1)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Elbit Systems Limited	Sep 17	365.2	406.7	Fixed	Standard Defence Contract	1,3
L3Harris Communications Australia	Sep 17	330.0	356.7	Fixed	Standard Defence Contract	1,2
Downer EDI Engineering Power Pty Ltd	Aug 19	17.7	47.3	Variable	Integrated Work Package	4
Thales Australia Limited	May 21	12.7	12.5	Fixed	Standard Defence Contract	5

Notes

- Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
- Contract value at 30 Jun 2021 includes the cost of CCPs to address changes in system requirements.
- The value of this contract may be adjusted, via negotiation and agreement of a contract change proposal with Elbit to remove the integration and installation from some platforms.
- Provision of multi-discipline workforce to deliver the LC4S Branch Integrated Work Package via the CASG Major Service Provider Arrangement. In addition the directed establishment of a PSI and improved governance measures lead to an increase in the contracted workforce.
- This procurement occurred via CCP078 to the LAND121 Phase 4 Acquisition Contract with Thales. LAND200-2 will pay Thales to produce the LAND200-2 BCS integration design solution within Hawkei vehicles.

Contractor	Contracted Quantities as at		Scope	Notes
	Signature	30 Jun 21		
Elbit Systems Limited	N/A	N/A	Development of BMS software and integration and installation of systems into the M1A1, M88 and PMV-M.	1,3
L3Harris Communications Australia	N/A	N/A	Development TCN software and provision of AN/PRC-158 radios.	2

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Downer EDI Engineering Power Pty Ltd	N/A	N/A	Provision of multi-discipline workforce to deliver the LC4S Branch Integrated Work Package via the CASG Major Service Provider Arrangement.	4
Thales Australia Limited	N/A	N/A	Delivery of the design solution for integration of the LAND200-2 BCS within Hawkei vehicles.	5
Major equipment accepted and quantities to 30 Jun 21				
150 x MHC vehicles have been modified with BMS				
162 x New and 50 x Upgraded BMS Training Assemblages.				
36 x Foundation Training Classroom Kits.				
Notes				
1	This contract is for the provision of BMS systems for installation in the following: GSV Node PMV-L x 108, MNV Node M1A1 x 59, MNV Node M88 x7, MNV Node PMV-L x126, GSV Node MHC x 150, C2V Node PMV-M x 57, C2V Node PMV-L x33, BMS-HQ hosted on MPE x 33, BMS Training System and BMS SIM.			
2	The contract is for the provision of TCN systems for installation in the following: GSV Node PMV-L x 108, MNV Node M1A1 x 59, MNV Node M88 x7, MNV Node PMV-L x126, GSV Node MHC x 150, C2V Node PMV-M x 57, C2V Node PMV-L x33.			
3	The scope of this contract is expected to change, via negotiation and agreement of a contract change proposal with Elbit to remove the installation and integration from some platforms.			
4	As a Project within LC4S Branch, LAND200-2 pays for its share of the workforce provided via this arrangement.			
5	Installation of the LAND200-2 BCS within Hawkei vehicles will be the subject of a separate procurement.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirements	TCN Systems Requirement Review	Jul 18	N/A	Aug 18	1	8
	BMS Systems Requirements Review	N/A	N/A	N/A	N/A	1
Preliminary Design	TCN Preliminary Design Review	May 19	N/A	Sep 19	4	2
	BMS Preliminary Design Review (Various Reviews)	N/A	N/A	N/A	N/A	1
	Preliminary Design Review M1A1/M88	Jan 20	N/A	N/A	N/A	5
	Preliminary Design Review PMV-L	Oct 21	N/A	Oct 21	0	4
	Preliminary Design Review PMV-M	Sep 19	N/A	Jun 21	21	6
	BCS Preliminary Design Review	Feb 21	N/A	Oct 21	8	11
Detailed Design	TCN Detailed Design Review	Sep 19	Aug 20	Oct 20	13	3
	BMS R1 Detailed Design Review	Nov 19	N/A	Mar 20	4	9
	BMS R1.1 Detailed Design Review	Aug 20	N/A	Aug 20	0	10
	BMS R2 Detailed Design Review	Nov 20	N/A	Oct 22	23	7
	Detailed Design Review M1A1/M88	Jul 20	N/A	Dec 20	5	5
	Detailed Design Review PMV-L	Jan 22	N/A	Jan 22	0	4
	Detailed Design Review PMV-M	Feb 21	N/A	Feb 22	12	6
	BCS Detailed Design Review	Jun 21	N/A	Mar 22	9	11
Notes						
1	There is no discrete BMS Systems Requirements Review. BMS software does not follow the traditional Systems Engineering Review process. The Commonwealth has implemented a series of Software specific agile reviews.					
2	TCN Preliminary Design Review variance resulted from the late entry into and exit from the Systems Definition Review.					
3	The TCN Detailed Design Review contract date was updated with the approval of TCN CCP021. Stop Payments were invoked in October 2020 due to an inability to achieve the exit criteria associated with the Detailed Design Review milestone. The Commonwealth worked with L3Harris to achieve the exit criteria and the Stop Payment condition was lifted in late October 2020.					
4	Contract Change Proposal Number 078 (CCP078) to the LAND121 Phase 4 Acquisition Contract with Thales was signed in May 2021. LAND200-2 will pay Thales to produce the LAND200-2 BCS integration design solution within Hawkei vehicles. Installation of the BCS nodes within Hawkei vehicles will be the subject of a separate procurement.					
5	This scope item was originally planned to be delivered under the under the Elbit contract, however, this was not able to be progressed because of an inability to obtain original design information from the US OEM to allow for WINBMS development. Instead of a formal PDR/DDR, a tailored TCN Node will be installed in the M1A1/M88 in response to an immediate obsolescence and risk mitigation request from AHQ, to replace the current radios. This work will be performed as an internal CASG Engineering Change Proposal (ECP), supported by HCA. The full BCS node functionality will be realised in the M1A1/M88 by FMR. A tailored design review was conducted to confirm the functional baseline into the platform.					
6	This scope item will not be performed under the Elbit contract. Instead, alignment of the LAND200-2 and the Protected Mobility Integration and Capability Assurance (PMICA) Non-Recurring Engineering (NRE) design requirements and installation will be performed by Thales. HCA will be engaged as a subcontractor to Thales.					
7	The Commonwealth implemented a change to the hosting for the secure environment from the Defence Secret Network to the Mission Partner Environment, requiring revised work requirements Delay of Release 2 Detailed Design Review is linked to the delay in delivery of Release 1.1, as well as issues with external interdependencies. Concurrent work has continued in the development and design of software to minimise further delay.					

8	System Requirements Review was delayed due to the rejection by the Commonwealth of the System Specification when first submitted for approval and the need for revisions by the contractor.
9	BMS R1 Detailed Design Review milestone event was delayed due to delayed completion of key design artefacts that were required to accurately describe the R1 capability.
10	A BMS software Release 1.1 was required due to a change in requirements requested by the Commonwealth. This was confirmed at BMS CCP004. The Commonwealth noted a number of Action Items requiring remediation at the conclusion of the Detailed Design Review milestone. The Commonwealth endorsed progress to commence T&E activities in order to provide Elbit with an opportunity to meet the exit criteria of SWRR 1.1.
11	The Commonwealth is the Prime Systems Integrator (PSI) responsible for the integration of the BMS and the TCN to realise the Battlefield Command System (BCS). This is not supported by a contract because this is an internal to Commonwealth responsibility. The achievement of this milestone is not dependent upon the achievement of platform Design Reviews.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration	TCN Acceptance Test & Evaluation	May 21	N/A	Sep 21	4	1
	BMS R1 Acceptance Test & Evaluation	Jun 19	N/A	Mar 20	9	7
	BMS R1.1 Acceptance Test & Evaluation	Aug 20	N/A	Jun 21	10	9
	BMS R2 Acceptance Test & Evaluation	Dec 20	N/A	Nov 22	23	6
	M1A1/M88 Platform Integration Acceptance Test & Evaluation	Apr 21	N/A	Mar 21	(1)	5
	PMV-L Acceptance Test & Evaluation	Jan 22	N/A	Jan 22	0	3
	PMV-M Acceptance Test & Evaluation	Feb 20	N/A	Dec 22	34	4
Acceptance	BCS Acceptance Test & Evaluation	Oct 21	N/A	Jul 22	9	10
	TCN System Acceptance	Jun 20	Aug 21	May 22	23	2
	BMS Acceptance R1	Jan 20	N/A	Mar 20	2	8
	BMS Acceptance R1.1	Sep 20	N/A	Jun 21	9	9
	BMS Acceptance R2	Mar 21	Aug 21	Mar 23	24	6
	M1A1 Tank	Feb 22	N/A	Jul 21	(7)	5
	M88	May 22	N/A	Jul 21	(10)	5
	PMV-L	May 22	N/A	May 22	0	3
	PMV-M	Apr 21	N/A	Mar 23	23	4
	BCS Acceptance	May 22	N/A	Mar 23	10	10
Notes						
1	TCN System Integration delay is directly driven from delays to progress through the Test Readiness Review (TRR).					
2	TCN System Acceptance has been affected by delays in the availability of some GFM and further delays in milestones. The TCN System Acceptance milestone was updated with CCP021. TCN System Acceptance has been further delayed because of contractor delays in the completion of test procedures required for entry into Acceptance Test and Evaluation.					
3	Contract Change Proposal Number 078 (CCP078) to the LAND121 Phase 4 Acquisition Contract with Thales was signed in May 2021. LAND200-2 will pay Thales to produce the LAND200-2 BCS integration design solution within Hawkei vehicles. Installation of the BCS nodes within Hawkei vehicles will be the subject of a separate procurement.					
4	This scope item will not be performed under the Elbit contract. Instead, alignment of the LAND200-2 and the Protected Mobility Integration and Capability Assurance (PMICA) Non-Recurring Engineering (NRE) design requirements and installation will be performed by Thales. HCA will be engaged as a subcontractor to Thales.					
5	This scope item will not be performed under the Elbit contract. Instead, a Tailored TCN Node will be installed in the M1A1/M88 in response to an immediate obsolescence and risk mitigation request from AHQ to replace the current radios. This work will be performed as an internal CASG ECP, supported by HCA. The full BCS node functionality will be realised in the M1A1/M88 by FMR.					
6	The Commonwealth implemented a change to the hosting for the secure environment from the Defence Secret Network to the Mission Partner Environment, requiring revised work requirements. Delay of Release 2 Acceptance Test & Evaluation (AT&E) is linked to the delay in delivery of Release 1.1 achievement, as well as issues with external interdependencies. Concurrent work has continued in the development of software to minimise further delay.					
7	The BMS AT&E delay flows from the delay to the Detailed Design Review.					
8	The delay to the Software Release Review and associated acceptance for BMS Release 1 resulted from delays in achieving the Release 1 Software Design Review/Test Readiness Review (DD/TRR).					
9	Issues were identified during Acceptance Test and Evaluation activities. Elbit has provided a Resolution Plan aimed at resolving the technical issues impeding the Commonwealth's ability to accept the Release 1.1 capability. The Commonwealth has yet to accept Release 1.1. As at 30 June 2021, the Commonwealth and Elbit continue to work to achieve the exit criteria of SWRR 1.1.					
10	The Commonwealth is the Prime Systems Integrator (PSI) responsible for the integration of the BMS and the TCN to realise the Battlefield Command System (BCS). This is not supported by a contract because this is an internal to Commonwealth responsibility. The achievement of this milestone is not dependent upon the achievement of platform acceptance.					

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3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved / Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Sep 20	Aug 22	23	1,2
Initial Operational Capability (IOC)	Sep 21	Apr 23	19	1,2
Final Materiel Release (FMR)	Jan 22	Jan 23	12	1,2
Final Operational Capability (FOC)	Jun 22	Oct 23	16	1,2

Notes

- IOC and FOC delays are being driven by time taken to establish new contracts for platform integration; availability of GFM; materiel and data from interdependent projects that are in separate, but parallel delays and contractor performance.
- The forecast achievement of these milestones is expected to change as a result of delays to design and acceptance milestones. The magnitude of this delay is being considered.

Schedule Status at 30 June 2021



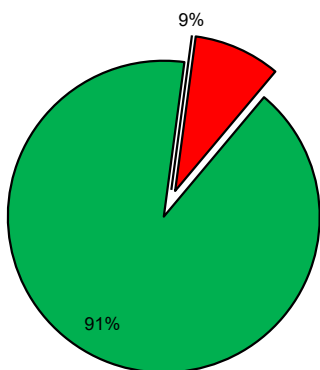
Note

Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

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:

Based on direction from the Army program sponsor, the project does not expect to deliver the WINBMS capability within the M1A1. Further, also based on direction from the Army program sponsor, the project does not expect to deliver the Hawkei GSV node: this is offset by the direction from the Army Program Sponsor to increase the delivered quantities of Hawkei C2V and MNV nodes. This approach is expected to be confirmed following Government consideration.

Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	<p>IMR comprises the delivery of:</p> <ul style="list-style-type: none"> • Foundation Training Classroom requirements • Training Integration Syndicate Rooms • BMS HQ hosted on MPE • BGC3 Training Assemblage • BMS Simulator • MNV Nodes fitted to 16 x M1A1 Tanks • MNV Nodes fitted to 2 x M88 Hercules • C2V Nodes fitted to 11 x PMV-L Hawkei • MNV Nodes fitted to 42 PMV-L Hawkei • GSV Nodes fitted to 36 PMV-L Hawkei • GW Nodes fitted to 19 PMV-M Bushmaster • GSV Node fitted to 50 MHC Trucks <p>IMR is forecast to be achieved in Aug 22.</p>	Not yet achieved
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> • IOC incorporates the components of FIC sufficient to constitute an operational capability. • Commander and staff in a Brigade Headquarters are able to use the BMS to support the planning and conduct of operations. • The data network includes sufficient material to support a BG sized force to plan and conduct operations using the BMS and weapons integrated BMS. • The TCN is established using Tranche 1 and Tranche 2 solutions to support a BG deployment. • The BMS is able to interface with JCATS and VBS systems to establish an initial simulation system. <p>Capability Manager sign-off of IOC.</p> <p>IOC is forecast to be achieved in Apr 23.</p>	Not yet achieved
Final Materiel Release (FMR)	<p>FMR comprises the delivery of:</p> <ul style="list-style-type: none"> • Foundation Training Classroom requirements • Training Integration Syndicate Rooms • BMS HQ hosted on MPE • BGC3 Training Assemblage • BMS Simulator • MNV Nodes fitted to 59 M1A1 Tanks • MNV Nodes fitted to 7 M88 Hercules • C2V nodes fitted to 33 PMV-L Hawkei • MNV Nodes fitted to 126 PMV-L Hawkei • GSV Nodes fitted to 108 PMV-L Hawkei • GW Nodes fitted to 57 PMV-M Bushmaster • GSV Node fitted to 150 MHC Trucks <p>FMR is forecast to be achieved in Jan 23.</p>	Not yet achieved
Final Operational Capability (FOC)	<ul style="list-style-type: none"> • FOC incorporates the components of FIC sufficient to constitute full operational capability. • Each of Army's three Combat Brigades has one digitised BG and a small number of combat support vehicles. • Defence will be able to deploy a digitised BG and Brigade HQ. • Defence could also configure and group all three BG under the digitised BHQ, all at the same readiness notice. • Capability Manager sign-off of FOC. <p>FOC is forecast to be achieved in Oct 23.</p>	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that the BMS software version V9.1 may not be available in time for Army to conduct its planned confidence testing at the LNIC in September 2020 causing a delay to the release of the software and to the achievement of IMR and IOC.	<p>A Contract Change Proposal CCP4 was developed to integrate the revised scope into the Elbit contract. A further Contract Change Proposal was developed with the supplier of the BMS-C2 Enclave to provide support to additional CoA confidence testing activities.</p> <p>This risk has been retired due to further testing which took place in November 2020.</p>
There is a schedule risk that the design solution for integrating BCS nodes within PMV-L will be delayed because of coordination problems between AHQ, LAND200-2, LAND121 Phase 4 and Thales resulting in a delay to the achievement of IMR.	<p>Close coordination between all stakeholders will be maintained through the conduct of fortnightly Integrated Project Team (IPT) meetings and adherence to the Contract's schedule of Mandated System Reviews.</p>

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There is a risk that the PSI function will not be fully functional in time to address the systems integration requirements for the BMS and the TCN for full operation within the modified vehicles.	This risk has been retired because CASG has established a dedicated team to serve as the Commonwealth PSI across both the BMS and TCN capability scope and to work with Army to deliver BCS as a single integrated system.
There is a risk that the required updates to the Australian Land Data Model will be released by LNIC after the Elbit and L3Harris contract development gates have passed resulting in additional costs and schedule delay to delivering the FOC capability.	Coordinated briefings have been established with the LNIC, the LAND200-2 Project Office and the two major contractors. Future updates to the Australian Land Data Model will involve negotiation between the LAND200-2 Project Office and the LNIC regarding the required level of compliance and the schedule for implementation so that commercial considerations can be addressed with the contractors. Defence may need to seek additional contingency and inform Government of the new schedule to incorporate new requirements that have a significant capability realisation benefit to Army.
There is a risk that there will be a funding shortfall for the combined implementation of the LAND200-2 modification and the Protected Mobility Integration Assurance (PMICA) upgrades on the PMV-M vehicles.	The Project Sponsor in Army has been advised of the likely funding shortfall, with further consideration to be held following the availability of costs from PMICA and Thales.
Emergent Risks (risk not previously identified but has emerged during 2020–21)	
Description	Remedial Action
There is a schedule risk due to the length of time to achieve security accreditation of TCN software that may delay the achievement of TCN Systems Acceptance.	Additional resourcing will be allocated to the security accreditation team within the Commonwealth to minimise the impact.
There is a schedule risk that the BMS Simulation – Tactics, Training and Procedures (SIM TTP) Capability will be delayed resulting in a delay to the capability delivery and a delay to the completion of the BMS contract.	Discussions from the outcomes of a Technical Review and a Finance Review are currently underway and will determine the best way forward.

5.1 Major Project Issues

Description	Remedial Action
The delivery of the modification to the PMV-M vehicles will be delayed due to the need to combine the integration and installation activity with the vehicle upgrades being progressed under the PMICA program.	An interim fit of the new capability is currently being trialed in the G-Wagon Command Post Mobile vehicles. At a cost of approximately \$3m, this will allow Army to gain experience with the TCN waveform and software as part of an interim Gateway capability, pending the delivery of the full capability on the PMV-M vehicles. The interim fit is being managed as a Survey and Quote task to the L3Harris contract.
The Weapons Integrated Battle Management System (WINBMS) software is not able to be fully implemented in the M1A1 tank due to the non-availability of Government Furnished interface data.	Army has agreed a proposal to reduce the WINBMS scope for the M1A1 tank and transfer the integration of the full WINBMS to another Army platform. Accordingly, this issue is retired. Discussions from the outcomes of a Technical Review and a Finance Review are currently underway and will determine the best way forward on this matter.
The progression of the M1A1 Tank and M88 platform integration and installation under the Elbit contract has been delayed.	Discussions from the outcomes of a Technical Review and a Finance Review are currently underway and will determine the best way forward.
The Army Program Sponsor has requested architecture changes to the implementation of the node designs, requiring contract changes for some platform integration activities.	In order to understand the impact of these changes, progression of a Survey and Quote task to the L3 Harris contract is ongoing. AHQ endorsement of the resultant updated System Specification is anticipated in Q4 2021.
Pending the finalisation of an agreed CCP to the BMS contract to remove from some platform elements, there is currently insufficient uncommitted funds to progress the procurement of PMV-M Gateway Vehicle Installation Kits (VIKS) resulting in a delay to the modification of the vehicle.	Discussions from the outcomes of a Technical Review and a Finance Review are currently underway and will determine the best way forward.
There is a schedule issue that the delivery of BMS Release 2 has been delayed resulting in a delay to the capability delivery and a delay to the completion of the BMS contract.	Discussions from the outcomes of a Technical Review and a Finance Review are currently underway and will determine the best way forward.
There is a BMS software schedule issue that the Release 1.1 delivered BMS Command and Control (BMS-C2) software has been unable to satisfy the release criteria associated with the Software Release Review 1.1, , resulting in further re-work and delays to acceptance.	Discussions from the outcomes of a Technical Review and a Finance Review are currently underway and will determine the best way forward.
There is a delay to TCN System Acceptance (SA) stemming from an inability to exit the Test Readiness Review (TRR).	The Commonwealth and L3Harris continue to work collaboratively to determine the best way forward.

Note
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Complex projects that involve multiple delivery contracts for different elements of the capability need to establish clear strategies for the systems integration requirements across the project. Where the Commonwealth selects an in-house option for the implementation of the systems integration function, this needs to be resourced appropriately at an early stage of the project.	Resourcing
ICT Security Accreditation activities are complex, expensive, time consuming and require specialist staff with ICT security accreditation qualifications and experience. Without a clear understanding of the scope, process and boundaries, there is a high probability that there will be confusion between the Commonwealth and the Contractor regarding who is responsible for the conduct of ICT Security Accreditation Activities. In order to avoid confusion, ambiguity, rework and delay, before releasing the Request for Tender, the Commonwealth must have a clear understanding of these matters, and that understanding must be reflected in the Statement of Work.	Resourcing
The integration of complex ICT systems onto platforms, especially complex, developmental platforms, should not be the responsibility of the ICT acquisition project. This is because coordination and alignment of outcomes between both complex projects becomes increasingly difficult and unmanageable. Instead, the scope of the ICT acquisition project should be limited to delivery of the ICT mission system (hardware and software) to the platform acquisition project. The platform acquisition project should then assume responsibility for integrating the ICT mission system onto the platform.	Schedule management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

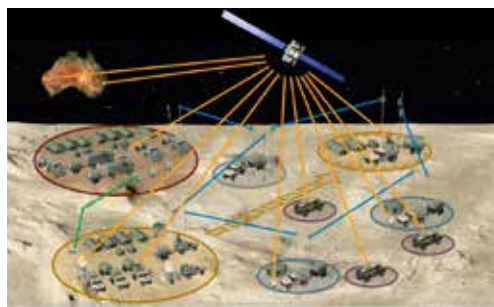
Position	Name
Division Head	Mr Gavin Rawlins
Branch Head	Ms Rosemary Gauci

Project Data Summary Sheets

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Project Data Summary Sheet¹⁶¹

Project Number	JNT2072 Phase 2B ¹⁶²
Project Name	BATTLESPACE COMMUNICATIONS SYSTEMS
First Year Reported in the MPR	2017-18
Capability Type	Replacement
Capability Manager	Chief of Army
Government 1st Pass Approval	May 2011
Government 2nd Pass Approval	Apr 2015
Budget at 2nd Pass Approval	\$915.7m
Total Approved Budget (Current)	\$942.2
2020-21 Budget	\$88.3m
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

JNT2072 Phase 2B will provide the Battlespace Communications System Land (BCS-L) deployed wide-band backbone by replacing and enhancing the existing Battlefield Telecommunications Network (BTN) capability within Army and Air Force. JNT2072 Phase 2B shall deliver the Integrated Battlefield Telecommunications Network (I-BTN) in three capability Releases. Release 1 shall provide transit case nodes, and Release 2 and Release 3 shall provide vehicle mounted nodes and additional capabilities. The end state will be an I-BTN that provides greater capacity, more effective switching, wireless and wired network infrastructure supporting secure voice, data and video services.

JNT2072 Phase 2B is required to provide end to end connectivity from the Mission Partner Environment, through and within the I-BTN, and to the Defence Terrestrial Communications Network (provided by JNT2047 Phase 3).

Under separate funding arrangements Joint Command, Control, Communications, Computers & Intelligence Systems Program Office (JC4ISPO) is responsible for design, verification, procurement and delivery of the DLAN. JNT2072 Phase 2B has provided supplementary funding to JC4ISPO for the procurement of 259 DLAN systems for integration with I-BTN.

JNT2072 Phase 2B will also acquire a Terrestrial Range Extension System (TRES) to extend the range of tactical radios procured under earlier phases of JNT2072.

1.2 Current Status

Cost Performance

In-year

The Project has spent \$77.0m this financial year against a budget of \$88.3m with the variance of \$11.3m due to COVID-19 impacts (inability to travel, supply chain issues, and human resource inefficiencies due to lockdowns).

Project Financial Assurance Statement

As at 30 June 2021, JNT2072 Phase 2B has reviewed the approved scope and budget for those elements required to be delivered by the Project. Having reviewed the current financial and contractual obligations of the Project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, that there is sufficient budget including contingency remaining for the Project to complete against the agreed scope.

Contingency Statement

The Project applied contingency in FY 20/21 for the treatment of delay in provision of Defence Tactical Communications Network tactical interfaces (\$10m), and refinement of specifications for the Headquarters on the Move capability (\$20.3m).

¹⁶¹ 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.

¹⁶² JNT2072 Phase 2B was originally approved as a JOINT PROJECT (JNT) within the broader JNT2072 program, but since second pass it has been managed and reported as a LAND project. The remainder of this report will refer to JNT2072 Phase 2B.

Schedule Performance

Commonwealth delay in delivering Defence Terrestrial Communications Network tactical interfaces (through an interfacing Defence project) resulted in Contract Change Proposal (CCP) 035. CCP035 included a delay payment of \$10.0m (through contingency funding) to Boeing Defence Australia (BDA) and a 4 month extension to Contract dates. This schedule extension has not impacted forecast FOC date.

Refinement of requirements for the Headquarters on the Move (HQOTM) capability resulted in CCP036. The resulting cost of \$20.3m was funded through contingency. Project schedule was unaffected. The design for the HQOTM reflecting the refined requirements set was conducted December 2020.

In March 2020, Boeing starting reporting COVID-19 impacts to the project due to social distancing measures, travel restrictions and supply chain issues. On 9 February 2021, Boeing indicated an overall four month delay to schedule as a result of COVID-19. A schedule only CCP (039) was submitted on 25 February 2021 proposing a four month extension to COVID-19 impacted Release 3 milestones, a five month extension for Release 2 System Maintenance Review, and movement of Release 2 Medium SATCOM Terminal milestones in line with COVID-19 impacts. On 15 June 2021, the CCP 039 Deed was signed resulting in an overall extension of the contract schedule of four months. This impacts FOC. In April 2021, Army commenced the process of recommending to Government a revised FOC date of September 2023.

Material Capability Delivery Performance

IMR, as defined in the contract, was achieved by Boeing in December 2017, allowing the Capability Manager to declare IMR, as defined in the Material Acquisition Agreement V2.2, February 2018. Initial Operating Capability was declared as being achieved in March 2018.

Boeing is on schedule to deliver future releases of the contracted capability in accordance with **CCP039, which added four months to the contract schedule and moved Final Materiel Release (FMR) to Jan 2023. In April 2021, Army commenced the process of recommending to Government a revised FOC date of September 2023.**

JC4ISPO (now **LC4 Mod SPO**) procured 259 eDLAN hardware systems, but note that they cannot be integrated in their current form. Army has sought additional funding from Government to remediate this integration problem using software from a different DLAN system. **JNT2072** Phase 2B has agreed with the Capability Manager to remove the requirement to integrate the eDLAN hardware with the I-BTN. Army has endorsed the completion of the DLAN Hardware Release milestone, as no further work will be undertaken due to the I-BTN system no longer being required to integrate with the eDLAN system.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

JNT2072 is a multi-phased program to define the Battlespace Communication Systems (Land) (BCS (L)) Communications Architecture, govern the design, incremental implementation and verification of system elements across a number of projects as well as acquire systems and equipment.

JNT2072 Phase 2B will enhance and modernise land force communications by replacing existing ADF deployable communication information systems. It will replace and enhance the existing Battlespace Telecommunications Network (BTN) with an Integrated Battlespace Telecommunications Network (I-BTN). The I-BTN will provide secure communications within deployed ADF Headquarters, in order to effectively network commanders and their subordinate staff, allowing them to exchange voice, data and video. This capability will be further enhanced through the provision of a Headquarters On The Move (HQOTM) capability. **JNT2072** Phase 2B will also deliver a TRES, with the project currently preparing the Request for Tender documentation.

Second Pass approval also included a new purpose built System Support Facility (SSF). This facility replaces the previous support facility that has been operating out of demountable buildings. The design and construction of the SSF was delivered by E&IG, with the new facility commissioned in September 2017.

The I-BTN capability being delivered is classified as developmental, as no Off-The-Shelf systems were available to meet the requirements for the I-BTN. The I-BTN is being developed to integrate a range of both developmental components as well as a range of Off-The-Shelf components, to meet the requirements.

The I-BTN capability is being delivered in three releases:

Release 1 is a Transit Case based capability with an initial level of functionality of the Network Planning and Management System (NPMs). Commencement of delivery of Release 1 capability is aligned to achievement of IMR 1A.

Release 2 is additional bearers and includes the Medium Mounted Satellite Communications capability, Troposcatter, External Network Access Point and an additional Currawong Network Edge Strategic to Tactical (CNEST).

Release 3 will include Vehicle Mounted nodes and will also deliver the Headquarters On The Move (HQOTM) node as well as secure voice and video services. Completion of delivery of Release 3 capability is aligned to achievement of Final Materiel Release (FMR).

A Performance Based Support Contract was signed at the same time as the Acquisition contract in September 2015 with the Contractor. The Support Contract initially had a three year term with a rolling wave of one year extensions to a maximum of 12 years. The operative date of the Support Contract was 29 January 2018. As a consequence of CCP015, the introduction into service of equipment has been delayed resulting in an extension in Support Contract term of 3 to 5 years at a reduced yearly expenditure. The total saving over the 5 year period is approximately \$6.0 million. The Support Contract was transitioned to Battlespace Communications Operations Group (BCOG) in June 2018.

Uniqueness

The project is highly complex and technically challenging as a result of having to design an I-BTN which integrates capabilities being delivered by other projects within CASG and Chief Information Officer Group (CIOG), as well as to deliver an I-BTN technical solution which is required to interoperate with a multitude of external interfaces.

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Boeing is required to design and verify that the I-BTN provides end-to-end connectivity of specified Battlespace Communications System (Land) Services from the tactical environment into the strategic network. Boeing is executing the project in three capability releases across seven years.

Boeing is developing both hardware and the network planning and management system software, as well as buying and integrating Off-The-Shelf equipment. Boeing is also required to integrate its system with existing satellite bearer systems and IT systems that have been delivered by other projects within CASG and CIOG.

Major Risks and Issues

The Major Risks for the project are:

- Due to competing priorities, Army's complete I-BTN R3 workforce may not be available to receive training within the timeframe of the project schedule

The Emergent Risks for the project are:

- Engineering resources may not be of sufficient size to maintain rigour for project Verification and Validation (V&V) activities.
- COVID-19 impact on project milestones is still being assessed.
- The implementation of the HQOTM capability could impact the project schedule.

The Major Issues for the project are:

- Late delivery of Defence Tactical Communications Network (DTCN) Tactical Interface Site to the project and subsequent impact on the project schedule, including FMR.
- Achievement of R2 Introduction into Service (IIS) Equipment Delivery Schedule delayed due to COVID-19.
- COVID-19 impact on achievement of project milestones, including FOC.
- Delay to FMR due to delay in procurement of Terrestrial Range Extension System (TRES).

Other Current Related Projects/Phases

JNT2072 Phase 1, BCS(L): The initial phase of the JNT2072 program, this project has delivered communications bearers to the BMS, and enhancing communications for Australian Defence Force Land elements through the development of an holistic battlespace communications architecture for the Land environment.

JNT2072 Phase 2A, BCS(L): Phase 2A is continuing the rollout of products selected during Phase 1 to primarily provide voice services to dismounted users. Phase 2A will also establish a mature support system for ongoing sustainment of the Phases 1 and 2A materiel systems and contribute to ongoing Prime System Integration activities to evolve the BCS(L) design. Investigation and/or market survey activities will be conducted to specify and identify products for potential procurement in future phases.

JNT2072 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 LAND75 Phase 4 as part of a second tranche of LAND200 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.

The I-BTN is required to interface with multiple ADF platforms, including combat and non-combat vehicles, deployable satellite communication systems, and strategic communication systems. Any delays or issues within these platforms and systems can affect the testing, design, delivery or useability of the I-BTN.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Oct 11	Original Approved	3.9	1
May 15	Government Second Pass Approval	911.8	2
	Total at Second Pass Approval	915.7	
Jun 20	Exchange Variation	26.5	
Jun 20	Total Budget	942.2	
Project Expenditure			
Prior to Jul 20	Contract Expenditure – Boeing Defence Australia	(534.2)	3
	Contract Expenditure – Kellogg Brown and Root	(15.0)	
	Other Contract Payments/Internal Expenses	(135.7)	
		(684.8)	
FY to Jun 21	Contract Expenditure – Boeing Defence Australia	(62.8)	4
	Contract Expenditure – Kellogg Brown and Root	(4.0)	
	Other Contract Payments/Internal Expenses	(10.2)	
		(77.0)	
Jun 21	Total Expenditure	(761.9)	
Jun 21	Remaining Budget	(180.3)	
Notes			
1	The project's original budget amount prior to Second Pass Approval.		

2	The total budget amount includes supplementary funding to JC4ISPO for the procurement of additional eDLAN systems (\$126.0m).
3	Other expenditure includes: enhanced Deployable Local Area Networks work package (EDLAN) and EDLAN ICT Hardware and Software (\$107.5m), Other ICT hardware & other equipment (\$1.2m), technical services (\$3.7m), Travel (\$3.1m), legal fees (\$1.1m), Headquarters on the Move (\$17.2m) and minor accrual adjustments (\$1.7).
4	Other Contract Payments/Internal Expenses Includes: EOFY Accrual adjustments for KBR and BDA Deliveries (\$8.4m), Travel, Overheads, Admin, Freight and Office Expenses (\$0.1m), ICT Hardware and Software (\$0.9m) and Headquarters on the Move (\$0.9m).

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
95.9	90.2	88.3	PBS – PAES: The variation is primarily due to delays caused by the impacts of COVID-19. PAES – Final Plan: Variation relates to small foreign exchange movements.
Variance \$m	(5.6)	(1.9)	Total Variance (\$m): (7.6)
Variance %	(5.9)	(2.1)	Total Variance (%): (7.9)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(11.3)	Australian Industry	Underspend is due to the inability of Boeing to achieve contract milestones as result of COVID-19 impacts (inability to travel, supply chain issues, and human resource inefficiencies due to lockdowns).
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
88.3	77.0	(11.3)	Total Variance	
		(12.8)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Kellogg Brown and Root (Integrated Support Contract)	Jul 15	9.6	19.7	Fixed	Modified Standard Defence Contract (Services)	1
Boeing Defence Australia (I-BTN)	Sep 15	487.2	720.9	Fixed	Modified Standard Defence Contract (Strategic Materiel)	2

Notes	
1	Increase in contract price due to additional security certification and accreditation services and annual updates to labour rates. Further the increase in contract price is due to the extension of ISC services as part of CCP08 which increased the level of resources required to assist in MR2 and MR3.
2	Increase in Contract Price due to changes required for the Headquarters on the Move vehicle, Medium Satellite Terminal trailer, Support and Test Equipment and Spares, and eDLAN delays.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 21		
Kellogg Brown and Root (Integrated Support Contract)	N/A	N/A	Range of Integrated Support Contractor (ISC) Services in support of the JNT2072 Phase 2B Project.	
Boeing Defence Australian (I-BTN)	See scope	See scope	1 Force Node Vehicle Mounted 8 Formation Nodes Vehicle Mounted 18 Formation Nodes Transit case 16 Unit Nodes Vehicle Mounted 21 Unit Nodes Transit Case 23 Relay Nodes Transit Case 3 Tactical Interface Stations 18 Headquarters on the Move Nodes	1
Major equipment accepted and quantities to 30 Jun 21				
18 Formation Nodes Transit Case				

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21 Unit Nodes Transit Case 23 Relay Nodes Transit Case 2 Tactical Interface Station Broadband Terrestrial Beyond Line Of Sight (BTBLOS) Transit Case Medium Mounted Satellite Terminal (MMST).						
Notes						
1	The scope of the contract was varied under CCP015, in agreement with the Capability Manager, amending the number of required Tactical Interface Stations from 4 to 3.					

Section 3 – Schedule Performance

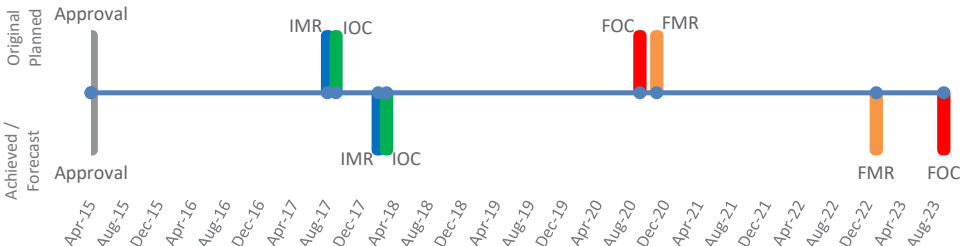
3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/ Forecast	Variance (Months)	Notes
System Requirement	System Requirements Review (SRR) Release 1 and 2	May 16	N/A	Mar 16	(2)	1
	System Definition Review (SDR) Release 1 and 2	Jul 16	N/A	Mar 16	(4)	1
Preliminary Design	Release 1	Oct 16	N/A	Sept 16	(1)	
	Release 2	Oct 17	Oct 18	Jul 18	9	2,5
Detailed Design	Release 1	Dec 16	N/A	Nov 16	(1)	
	Release 2	Jan 18	Feb 19	Dec 18	11	2
	Release 3	Mar 20	N/A	Nov 19	(4)	4
	Support System – Release 1	Nov 16	Feb 17	Dec 16	1	3
	Support System – Release 2	Jan 18	Mar 19	Feb 19	13	2
	Support System – Release 3	May 20	N/A	Dec 19	(5)	4
Notes						
1	SRR/SDR covered both Release 1 and Release 2.					
2	Release 2 was impacted by delays affecting interfacing projects and note this against all Note 2 delays.					
3	The Contract was changed with CCP 9 to correct the sequencing of the Support System Detailed Design so it was logically scheduled to occur after the Mission System Detailed Design. Support System Detailed Design for Release 1 was achieved ahead of the current Contract Date.					
4	Release 3 was introduced as part of CCP015 that replaced the need for eDLAN integration with an alternate LAN. This reduced reliance on delayed interfacing projects. Detailed Design Review for R3 was achieved earlier than planned as BDA work towards target dates. All their artefacts were ready prior to contract date so Detailed Design Review for R3 was entered and into and achieved early.					
5	Preliminary Design for Release 2, which was completed in July 2018, included the capabilities that are now being delivered in both Release 2 and Release 3.					

3.2 Contractor Test and Evaluation Progress

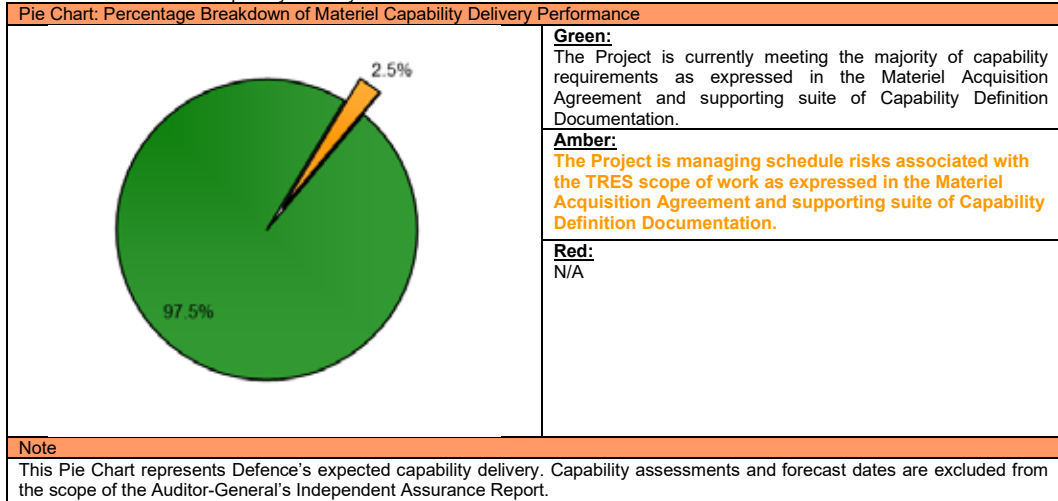
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/ Forecast	Variance (Months)	Notes
System Integration	Release 1 Mission System Integration & Interoperability Verification	Jul 17	Dec 17	Dec 17	5	1
	Release 2 Mission System Integration & Interoperability Verification	Apr 19	May 20	Mar 20	11	1
	Release 3 Mission System Integration & Interoperability Verification	Mar 21	N/A	Nov 21	8	2,3
Acceptance	System Acceptance – R1	Aug 17	Feb 18	Dec 17	4	1
	System Acceptance - R2	Jun 19	Jul 20	Apr 20	10	1
	System Acceptance – R3	May 21	Jan 22	Nov 21	8	2,3
	Final Acceptance (FA) - Acquisition Contract	Feb 21	Feb 23	Dec 22	22	2,3
Notes						
1	Release 2 expands the capability of Release 1, and has been impacted by delays affecting interfacing projects					
2	Release 3 was introduced as part of CCP015 that replaced the need for eDLAN integration with an alternate LAN. This reduced reliance on delayed interfacing projects.					
3	The movement of schedule due to CCP039 (COVID-19 Delay) has resulted in a change to these dates. They will be updated in the next endorsed Materiel Acquisition Agreement (Version 2.3 currently in draft).					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
I-BTN				
Initial Materiel Release (IMR) 1A	Aug 17	Feb 18	6	1
I-BTN Initial Operational Capability (IOC)	Sep 17	Mar 18	6	1
(Release 1) Materiel Release 1	Oct 17	May18	7	2
(Release 1) Materiel Release 2	May 18	Dec 18	7	2
(Release 1) Materiel Release 3	Oct 18	Apr 19	6	2
(Release 2) Materiel Release 5	Dec 19	May 21	18	1,2
(Release 2) Materiel Release 6	Oct 20	Dec 21	13	1,2,3
(Release 3) Materiel Release 7	Nov 21	Jul 22	8	1,2,3
(Release 3) Materiel Release 8	Mar 22	Oct 22	7	1,2,3
I-BTN Final Materiel Release (FMR)	Nov 20	Jan 23	26	2,3
DLAN Hardware Release	Jul 18	Jun 19	12	4
I-BTN Final Operational Capability (FOC)	Sep 20	Sep 23	36	5
Notes				
1	Due to delays incurred to date with interfacing projects, alternative interim interface requirements for Release 1 were implemented and resulted in a six month slip to IMR 1A and IOC I-BTN. This also deferred the Release 2 Material Releases (Materiel Releases 5 and 6) by making Materiel Release 4 no longer used and introducing Materiel Release 6. CCP15 introduced Release 3 (Materiel Releases 7 and 8) to remove the requirement to integrate I-BTN with eDLAN. There was a resultant slip to FMR of 16 months to forecast date.			
2	Materiel Release (Release 1, Release 2, Release 3) milestones will be achieved when the units receiving the capability sign the unit acceptance certificate. This variance is dependent on unit availability to conduct the unit test activity.			
3	The movement of schedule due to CCP039 (COVID-19 Delay) has resulted in a change to these dates. They will be updated in the next endorsed Materiel Acquisition Agreement (Version 2.3 currently in draft).			
4	Integration between eDLAN and the I-BTN is no longer required. Army has endorsed the declaration of the DLAN Hardware Release milestone, as no further work will be undertaken due to the I-BTN system no longer being required to integrate with the eDLAN system.			
5	The FOC date has changed due to extension of project schedule as a result of CCP039 (COVID-19 Delay). The project has conducted workshops with the Capability Manager to assist in identifying a new FOC date. The Capability Manager has advised the project that it has, via the Defence Bi-Annual Update, submitted a revised FOC date of September 2023 to Government.			
Schedule Status at 30 June 2021				
				
Note				
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.				

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR) 1A	<ul style="list-style-type: none"> Verification & validation, testing and certification completed Initial Learning Management Packages Approved Initial Support Contract is in place Commonwealth acceptance of supplies for those units identified for Materiel Release 1 Completion of AT for initial release IMR 1A was achieved in February 2018	Achieved
Initial Operational Capability (IOC)	<ul style="list-style-type: none"> For Army - Delivery of four man portable formation nodes, four unit nodes, and three HCLOS with trained soldiers to enable planning, configuration and operation of Force and Formation level networks. For Air Force - Delivery of four man portable formation nodes, two man portable unit nodes and one HCLOS with trained crew to enable planning, configuration and operation of a Formation level network. IOC was achieved in March 2018	Achieved
Final Materiel Release (FMR)	<ul style="list-style-type: none"> Verification & validation, testing and Certification completed All elements of the Mission System are delivered to units All introduction into service training is completed and approved Learning Management Plans for sustainment training delivered to Army Mature Support Contract in place including delivery of Data Transfer Equipment (DTE); Delivery of Hand Held Satellite Terminal (HHST) FMR is currently forecast for achievement in January 2023	Not yet achieved
Final Operational Capability (FOC)	<p>The provision, support and training of the I-BTN and TRES to all Army and Air Force in accordance with the Basis of Issue (BOI).</p> <p>Scope includes:</p> <ul style="list-style-type: none"> 1 Force Node Vehicle Mounted 8 Formation Nodes Vehicle Mounted 18 Formation Nodes Transit case 16 Unit Nodes Vehicle Mounted 21 Unit Nodes Transit Case 23 Relay Nodes Transit Case 3 Tactical Interface Stations 	Not yet achieved

	<ul style="list-style-type: none"> 18 Headquarters on the Move Nodes <p>The Capability Manager has advised the project that it has, via the Defence Bi-Annual Update, submitted a revised FOC date of September 2023 to Government.</p>	
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Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Due to competing service priorities, there is a chance that not all of the Army and Air Force personnel who need to be trained to operate and support the I-BTN will be available to receive Release 3 introduction into service training within the timeframe of the project schedule.	<ul style="list-style-type: none"> The project has conducted Release 3 Introduction Into Service planning with Army to manage this risk. The risk has subsequently been downgraded.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
Project Engineering Team may be unable to exercise the expected level of engineering rigour for Verification and Validation (V&V) activities due to a lack of adequate engineering resources.	<ul style="list-style-type: none"> Deviations and waivers for low risk V&V activities being granted where appropriate Travel where permitted to achieve Engineering V&V activities in accordance with Defence, State and Federal guidelines Engagement with Directorate of Officer Career Management to encourage provision of appropriately qualified uniformed engineering personnel to replace those being posted out at the end of 2021 Analysis of engineering resource requirements for the remainder of the project (occurring July 2021) and if required engagement of additional resources via the ISC or other Branch projects
There is a chance that COVID-19 may impact project milestones within current schedule time frames.	<ul style="list-style-type: none"> Travel permitted as required to achieve Engineering V&V activities in accordance with State and Federal Government pandemic control guidelines Assessment of resources required to meet future milestones Additional engineering support sought through Contractors or other Projects
The remediation of the Headquarters on the Move capability as directed by the Army Headquarter could impact on the schedule for FOC and could exceed the remaining contingency for the project.	<ul style="list-style-type: none"> Deployable Local Area Network (DLAN) equipment needed to be added to the HQOTM vehicle solution in order to meet the scope of the project. CCP036 procured the LAN equipment required. Project Contingency was applied to manage this risk. CCP036 was finalised in October 2020 and this risk has subsequently been retired

5.2 Major Project Issues

Description	Remedial Action
There is a chance that the JNT2072 Phase 2B delivery schedule will be affected by delays to the Defence Tactical Communications Network Tactical Interface Sites leading to a delay in delivery of the I-BTN for FMR.	The JNT2047 Defence Tactical Communication Network Tactical Interface Sites was to be delivered as Contract Government Furnished Service 4.1 in July 2019; however it was delivered in April 2020, nine months late. Via CCP035, Boeing submitted a Claim for Postponement (Cost and Schedule). The schedule was extended by four months. Project Contingency was applied to manage this risk. Boeing's Claim for Postponement was resolved in October 2020 and this issue has subsequently been retired.
There is a chance that the R2 IIS Equipment Delivery Schedule will not be met because BDA may be unable to meet or maintain their equipment production schedule, Unit/Flight unavailability and CoA and BDA delays in processing Contract delivery requirements due to COVID-19.	Project Office early engagement with AHQ, AFHQ, FORCOMD and 1 Div to schedule IIS of R2 equipment delivery. Equipment production schedule to be rigorously monitored. To meet unit/flight availability, where applicable, create two IIS commissioning teams to work in parallel in order to achieve IIS delivery Schedule.
There is a chance restrictions related to COVID-19 will impact on completion of project tasks and milestones within current schedule time frames, this resulting in an inability to meet the current FOC date.	With the signature of CCP039 (COVID-19 Delay) the schedule has been extended by 4 months and Final Material Release (FMR) is now scheduled for January 2023. The project has conducted workshops with the Capability Manager to assist in

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	identifying a new FOC date. The Capability Manager has advised the project that it has, via the Defence Bi-Annual Update, submitted a revised FOC date of September 2023 to Government. Remediation through realignment of project schedule dependencies and close engagement with interfacing projects
There is a chance that the TRES capability may delay project FMR.	Boeing has proposed 8 tethered drones to meet TRES requirements and in October 20 the Capability Manager agreed to this solution. The Project is awaiting a CCP from Boeing which will provide detailed assessments of schedule and cost.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Collaborative engagement by the Contractor, CASG and the Capability Manager has resulted in better outcomes for the delivered capability.	Requirements Management
Contracting for a performance based support contract at the same time as the acquisition contract results in better design decisions during the acquisition contract.	Contract Management
User engagement during the Mission System Integration Test Events (MSITE) has resulted in an improved capability by early user engagement during the design phase. This also leads to improving the management of user expectations.	Requirements Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Acting Division Head	Mr Gavin Rawlins
Branch Head	Ms Rosemary Gauci

Project Data Summary Sheet¹⁶³

Project Number	SEA1439 Phase 5B2
Project Name	COLLINS CLASS COMMUNICATIONS AND ELECTRONIC WARFARE IMPROVEMENT PROGRAM
First Year Reported in the MPR	2018-19
Capability Type	Upgrade
Capability Manager	Chief of Navy
Government 1st Pass Approval	Oct 06
Government 2nd Pass Approval	Stage 1 - June 15 Stage 2 - March 17
Budget at 2nd Pass Approval	\$599.1m
Total Approved Budget (Current)	\$608.7m
2020-21 Budget	\$57.3m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA1439 Phase 5B2 is a multiple Second Pass that **is delivering** a modernised submarine communications system and upgraded Electronic Support measures on the Collins Class submarines. These enhancements will be broadly delivered in two stages.

Modernised Submarine Communications System (MSMCS) Stage 1 replaces obsolete Communications Centre (COMCEN) equipment on-board six Collins Class Submarines. MSMCS Stage 1 upgrade **is providing** the submarines with improved performance, reliability and interoperability with other components of the Australian Defence Force and allied nations.

MSMCS Stage 2 **is delivering** urgent communications systems upgrade including satellite communications that will deliver a submarine internet protocol capability with supporting applications that will significantly reduce operator workloads and improve system management.

Funded under Stage 1, but as a standalone capability, Microwave Electronic Support (MWES) system will enable submarines to improve their ability to detect, identify, and localise intercepted signals. This **is being** installed independently and in parallel with Stage 1 and 2.

1.2 Current Status

Cost PerformanceIn-year

As at 30 June 2021, financial year **2020-21** expenditure is **\$39.0m** against the forecast budget of **\$57.3m**. The variation is due to **Milestone delays due to COVID-19 travel restrictions and** lower than forecast FMS case **and ASC** payments.

Project Financial Assurance Statement

As at 30 June 2021, Project SEA1439 Phase 5B2 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

SEA1439 Phase 5B2 achieved Stage 1 Initial Materiel Release (IMR) on one platform on 26 Nov 19. **Due to external factors including COVID-19 consequences, certain SEA1439 capability release milestones (IMR Stage 2 & MWES) have been delayed. Project SEA1439 Phase 5B2 is aware of risks and these** are being actively managed.

SEA1439 Phase 5B2 Microwave Electronic Support (MWES) system – significant schedule **delay** has occurred from Government 2nd pass approval due to difficulties engaging with subcontractors in the early phases of the project. Contractors have now been engaged and progressing to project implementation on platforms in accordance with the schedule re-baselined at Government 2nd pass approval for MSMCS Stage 2.

Delays due to restricted movements of contractor staff across state borders because of COVID-19 have delayed Initial Materiel Release of MSMCS Stage 2 and MWES. MSMCS Stage 2 and MWES Initial Materiel Releases are now expected in late September 2021. Initial Operational Capability (IOC) for MSMCS Stage 1 & 2 and MWES is expected to be delayed because of Initial Materiel Releases delay. IOC is expected Dec 2022.

Materiel Capability Delivery Performance

163 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.

<p>The project has completed implementation of:</p> <ul style="list-style-type: none"> • Stage 1 on three platforms which are now in service. • Stage 1 and 2 training system at the Integrated Test and Training Site (ITTS) and are in use for training. • Stage 1 and 2 on one platform, which is now in service. • Stage 1 and 2 and MWES are currently being installed on two platforms.
<p>Note</p>
<p>Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>
<p>1.3 Project Context</p>
<p>Background</p> <p>In December 2004, Defence initiated investigations into potential capability enhancements on Collins Class Submarines. During these investigations, potential obsolescence issues were also raised regarding equipment with the Collins Class Communication Centre. Capability managers along with other relevant parties within Defence developed a number of proposals to address the long term capability requirements of the Collins Class. These issues would be addressed through SEA1439 Phase 5B, with the scope, phases and preferred approach changing several times prior to Government second pass approval.</p> <p>In November 2013 Defence confirmed the project scope and agreed a two stage approach to Government.</p> <ol style="list-style-type: none"> 1. Modernised Submarine Communications System (MSMCS) Stage 1 involves the update of obsolete Communications Centre equipment on-board the Collins Class with a military off-the-shelf solution. Stage 1 achieved Second Pass Approval in June 2015 and is currently being implemented across all six platforms and at the Integrated Test and Training Site (ITTS). 2. MSMCS Stage 2 involves the delivery of capability enhancements including the introduction of satellite communications enabling vastly improved data transmission/receive rates in a tactical environment, enhanced networks, and associated ICT infrastructure. Stage 2 received Gate Two approval by Government in March 2017. Stage 2 includes the following capability enhancements across all six platforms and at the ITTS: <ol style="list-style-type: none"> a. Wideband Satellite Communications system; b. Classified Local Area Networks to distribute information outside the Communication Centre, referred to as the Submarine Local Area Network Environment; c. Network infrastructure to allow multiple classified Local Area Networks (LANs) to access the same IP-enabled Radio Frequency bearer system; and d. Tools and Applications to effectively and efficiently manage the information flows between the shore communication centres and the submarines, referred to as Submarine Communication Information Exchange Management. <p>The MWES system will detect, identify, and localise intercepted signals. The MWES capability enhancement will maximise commonality between the Collins class submarines and the wider RAN fleet. Funded under Stage 1, but as a standalone capability, MWES will be installed independently and in parallel with Stage 1 and 2, in a flexible manner so as to achieve the best suited boat at the time of materiel availability.</p>
<p>Uniqueness</p> <p>SEA1439 Phase 5B2 Stage 1 addresses the obsolescence issues of the legacy maritime communications capability of the Collins Class submarines, and enhances the electronic support based on modernised architectures and standardised systems. The new and upgraded capability will enable new levels of operability and interoperability never before seen on Collins Class submarines.</p> <p>For implementation of Stage 2, the majority of supplies being Government Furnished Material. The project has engaged Raytheon Australia as Prime System Integrator to implement MSMCS Stage 2. The Submarine Local Area Network and the Submarine Communication Information Exchange Management elements of Stage 2 are being supplied by the Defence Chief Information Officer Group with the funding for the development and delivery of these systems handed directly to Defence upon Government Second Pass Approval for Stage 2.</p> <p>The other major component of Stage 2 is the Wideband Satellite Communications component which is supplied under a U.S. Government Foreign Military Sale case.</p>
<p>Major Risks and Issues</p> <p>The project is currently managing a number of risks and issues including:</p> <p>There is a chance of Submarine Local Area Network delay impacting on SEA 1439 Phase 5B2 Materiel Acquisition Agreement (MAA) milestones due to stakeholder engagement and the complexity of the required capability.</p> <p>Chance of delay to capability set to work and testing because of international travel restrictions/limited international flights.</p>
<p>Other Current Related Projects / Phases</p> <p>Navy Minor Project 1941 will deliver an Information Screening and Delivery System (ISDS), and a Military Message system across a number of CCSMs. The ISDS has now been integrated into the SEA1439 Phase 5B2 project and has been implemented on two platforms and shore system.</p> <p>SEA1442 Phase 6 provides Wideband Satellite Communications Ground and Space segment, as well as planning and land based infrastructure required to operate the system. The submarine fitted segment of this capability is provided by SEA1439 Phase 5B2 Stage 2.</p> <p>SEA1439 Phase 5B2 is also related but not dependent on other projects within the SEA1439 program, a full list of these can be found in the SEA1439 Phase 3 - Collins Reliability & Sustainability project.</p>
<p>Note</p>
<p>Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>

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Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Oct 06	Original Approved (First Pass)	4.1	1
Apr 10	Real Variation - Scope	1.4	1
Sep 12	Real Variation - Scope	1.6	1
Feb 15	Government 1st Pass Approval - Stage 1	36.7	2
Jun 15	Government 2nd Pass Approval - Stage 1	203.9	3
May 17	Government 2nd Pass Approval - Stage 2	351.4	4
	Total at Second Pass Approval	599.1	
Jan 20	Real Variation – Budgetary Adjustment	2.5	9
Jul 10	Price Indexation	0.4	5
Jun 21	Exchange Variation	6.7	
	Total Budget	608.7	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - Raytheon Australia	(165.1)	6
	Contract Expenditure - Foreign Military Sales (AT-P-LFQ)	(72.2)	7
	Contract Expenditure - ASC Pty Ltd	(40.6)	6
	Contract Expenditure - Jenkins Engineering Defence (JEDS)	(30.2)	6
	Other Contract Payment/Internal Expenses	(12.0)	8
		(320.1)	
FY to Jun 21	Contract Expenditure - ASC Pty Ltd	(13.1)	6
	Contract Expenditure - Jenkins Engineering Defence (JEDS)	(9.2)	6
	Contract Expenditure - Foreign Military Sales (AT-P-LFQ)	(7.7)	7
	Contract Expenditure - Raytheon Australia	(7.0)	6
	Other Contract Payments/Internal Expenses	(2.0)	8
		(39.0)	
Jun 21	Total Expenditure	(359.1)	
Jun 21	Remaining Budget	249.7	
Notes			
1	Original approved funding was for development of the Functional Performance Specifications for the future implementation of SEA1439 Phase 5B2 to provide High Data Rate Communications fit for CCSMs.		
2	Government approved SEA1439 Phase 5B2 Stage 1 funding for risk reduction funding for the development of the design of 5B2.		
3	Government approved SEA1439 Phase 5B2 MSMCS Stage 1 to provide a solution to address COMCEN obsolescence issues.		
4	Government approved SEA1439 Phase 5B2-A MSMCS Stage 2 for WBS and SUBLANE implementation. There was no Government First Pass Approval for Stage 2 as this capability enhancement of stage 1.		
5	Up until July 10, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.4m.		
6	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
7	US Govt. supply (FMS Case) for Wide Band Satellite.		
8	Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts.		
9	In January 2020, a budget adjustment was applied (\$2.5m) as a correction to Project financial reporting. The project's total approved budget has remained the same as approved by Government.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
64.5	58.1	57.3	PBS - PAES: Due to COVID-19 restriction consequences and delay to MWES Milestone and FMS Case payment deferment. PAES - Final Plan: Due to minor contractual commencement delays.
Variance \$m	(6.4)	(0.8)	Total Variance (\$m): (7.2)
Variance %	(9.9)	(1.4)	Total Variance (%): (11.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(10.6)	Australian Industry	Variance is due to Milestone delays due to COVID-19 travel restrictions and lower than forecast FMS case and ASC payments.
		(7.8)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
		(18.4)	Total Variance	
57.3	39.0	(32.1%)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
ASC Pty Ltd	July 12	N/A	72.6	Variable (Cost Reimbursement)	Standard Defence Contract	1,6
Raytheon Australia	Feb 15	32.9	190.4	Fixed	Standard Defence Contract	2,3,6
Jenkin Engineering Defence (JEDS)	Jul 16	10.4	47.9	Fixed	Standard Defence Contract	4,5,6,7
US Government - Foreign Military Sales (AT-P-LFQ)	Jun 17	98.0	96.5	Reimbursement	FMS	6
Notes						
1	ASC Pty Ltd engagement related to SEA1439 Phase 5B2 is not a single contract. ASC is engaged under a number of separate Survey and Quotes (S&Q) tasks under the provisions of the In-Service Support Contract (ISSC) CSP/2012/1. At contract signature no S&Q tasks had been raised for SEA1439 Phase 5B2.					
2	Raytheon Australia received \$32.9m in interim funding by the CoA to achieve Detail Design Review (DDR) prior to full contract award in Mar 16 when the CoA issued a Notice to Proceed post Government Second Pass Approval for Stage 1.					
3	The Raytheon Australia PSI contract has been amended on multiple occasions. The major contract changes are Contract Change Proposal (CCP006) for early implementation of Stage 1 on one platform, and CCP008 for the introduction of Stage 2 workscope.					
4	A Contract Change Proposal (CCP001) was negotiated with a revised scope for the MWES element of the project.					
5	A Contract Change Proposal (CCP002) was approved for remediation works at the Integrated Test and Training Site (ITTS) and option to procure two additional systems.					
6	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates.					
7	A Contract Change Proposal (CCP003) was approved to re-baseline milestones affected because of COVID-19 consequences. There is no change to the contract price.					
Contractor	Contracted Quantities as at		Scope	Notes		
	Signature	30 Jun 21				
Raytheon Australia	7	7	Deliveries consist of six Stage 1 & 2 platform fits, plus one Stage 1 & 2 Training System fitted at the Integrated Test and Training Site (ITTS).			
ASC Pty Ltd	6	6	Deliveries consist of platform integration on to 6 Collins Class Submarines of Stage 1 & 2 and MWES.			
Jenkins Engineering Defence (JEDS)	5	7	Deliveries consist of six MWES platform fits, plus one MWES fitted at the ITTS.			
US Government – Foreign Military Sales (AT-P-LFQ)	7	7	Deliveries consist of six Wide Band Satellite (WBS) platform fits, plus one WBS Training System fitted at the ITTS.			
Major equipment accepted and quantities to 30 Jun 21						
Stage 1 system has been implemented on three platforms which are now in operational service. Stage 1 & 2 training system have been implemented at the ITTS and are in use for training. Stage 1 & 2 have been implemented on one platform and are now in service.						

Section 3 – Schedule Performance

3.1. Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirements	Stage 1	Jul 15	N/A	Jul 15	0	
	MWES	Nov 16	Sep 18	Oct 18	23	1
	Stage 2	Sep 17	Oct 17	Oct 17	1	2

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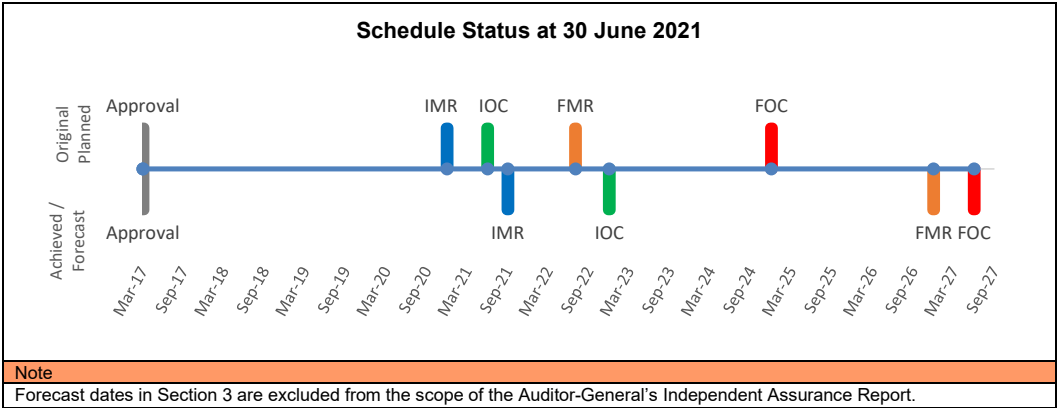
Preliminary Design	Stage 1	Nov 15	N/A	Nov 15	0	
	MWES	Jan 17	Jan 19	Feb 19	25	1
	Stage 2	Jan 18	Feb 18	Jul 18	6	2
Detail Design	Stage 1	Mar 16	Apr 16	Apr 16	1	2
	MWES	Apr 17	Mar 19	Sep 19	29	1
	Stage 2	May 18	Jun 18	May 18	0	
Notes						
1	MWES Function and Performance Specification had taken longer than expected to finalise. Detailed Design Review completed 8 May 2019. Detailed Design Review acceptance signed 19 Sept 2019.					
2	Variance is due to delays in processing and acceptance of documentation delivered by the contractor.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration	MSMCS Stage 1	May 17	Jun 17	Jul 17	2	1,4
	MWES	May 18	Nov 19	Mar 20	22	2
	MSMCS Stage 2	Jun 19	Jul 19	Jul 19	1	1,6,8
Acceptance	MSMCS Stage 1	Jun 24	Apr 18	Jan 18	(77)	7
	MWES	Jul 19	N/A	Sep 21	26	2,5
	MSMCS Stage 2	Jun 20	N/A	Jun 20	0	3,6,8
Notes						
1	MSMCS Stage 1 & Stage 2 System Integration is based on completion of CAT 3 Testing by the Prime System Integrator (PSI) in accordance with completion milestones within the PSI contract and the Test and Evaluation Master Plan (TEMP).					
2	MWES System Integration is based on First of Type (FOT) Set-to-Work (STW). System acceptance is based on completion of successful FOT Harbour Acceptance Trial completion. Original system integration dated based on planned FOT installation that was subsequently transferred to a different platform in a later maintenance period.					
3	MSMCS Stage 1 & Stage 2 Acceptance is based on the Commonwealth's acceptance of the completion of CAT 4 testing in accordance with completion milestones within the PSI contract and the Test and Evaluation Master Plan (TEMP).					
4	Variance is due to delays in processing and acceptance of documentation delivered by the contractor.					
5	MWES implementation delayed due to immature procurement strategy and Function and Performance Specification (FPS). This has now been resolved with implementation commenced in FOT platform. Commonwealth's acceptance is at completion of CAT 4 testing. Completion of CAT4 testing and Harbour Acceptance Trial on First of Type platform delayed due to COVID-19 related travel and working condition restrictions. Additional delay to CAT 4 testing due to COVID-19 travel restrictions between States and unavailability of platform resulting in delay to CAT 4 testing.					
6	Implementation schedule understanding has matured since the MAA was originally developed.					
7	System acceptance achieved 6 months early due to the acceleration of the MSMCS Stage 1 installation with platform 2 installation brought forward 77 months from a Full Cycle Docking to an earlier Mid Cycle Docking.					
8	Systems Operation and Verification Testing (SOVT) of Wideband Satellite Communications system under Stage 2 completion is acceptance of supplies from the US Government under the Foreign Military Sales case. SOVT transitions supplies from US Government to the CASG. CASG will transition the WBS to the Submarine sustainment organisation. SOVT of WBS system is not a precondition to Stage 2 acceptance.					

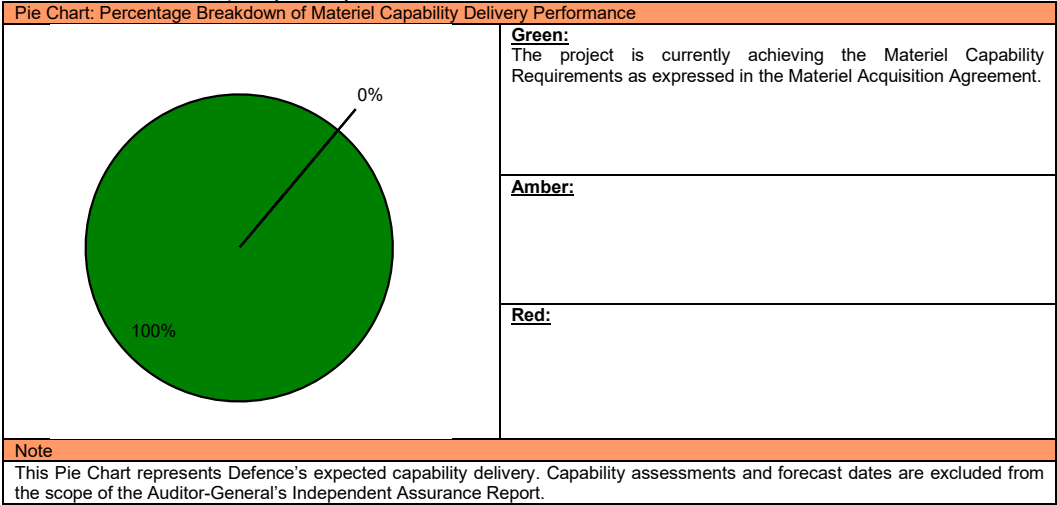
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR) (Stage 1)	Jul 18	Nov 19	16	1,2
Initial Materiel Release (IMR) - (MWES)	Feb18	Sep 21	43	1,3,6
Initial Materiel Release (IMR) - (Stage 2)	Dec 20	Sep 21	9	1,4,5
Initial Operational Capability (IOC) (Stage 1, 2 & MWES)	Jun 21	Dec 22	18	1,4,7
Final Materiel Release (FMR) - (Stage 1)	Jul 22	Dec 22	5	1,4
Final Materiel Release (FMR) - (MWES)	Jun 19	Mar 23	45	1,3
Final Materiel Release (FMR) (Stage 2)	Jul 22	Dec 26	53	1,4
Final Operational Capability (FOC) (Stage 1, 2 & MWES)	Dec 24	Jun 27	30	1,4
Notes				
1	Original Planned dates for Stage 1 and Microwave Electronic Support (MWES) are in accordance with Revision 2 of the MAA. Original planned dates for Stage 2 are in accordance with Revision 4 of the MAA.			
2	Stage 1 IMR claim agreed 26 Nov 19. IMR variance due to delay in obtaining all objective quality evidence to support IMR claim.			
3	MSMCS MWES implementation delayed due to immature procurement strategy and Function and Performance Specification (FPS). This has now been resolved with implementation commenced in FOT platform, but has had consequential impact to the MWES implementation plan, IMR and FMR.			
4	Original IOC, FMR and FOC was for MSMCS Stage 1 and MWES. MAA Version 4.0 updated IOC to also include MSMCS Stage 2.			
5	IMR Stage 2 variance is due to delay of sea acceptance trial schedule as a result of COVID-19 related travel restrictions. The latest forecast date highlights the additional delay because of continuing COVID-19 travel restrictions and delay in obtaining objective quality evidence to support trials assessment.			
6	IMR MWES variance due to installation and set to work delay because of COVID-19 travel restrictions and installation schedule conflict resulting in contractor resources being allocated to one platform.			
7	IOC date amended to reflect delay in achieving MSMCS Stage 2 (see Note 5) and MWES IMR (see note 6).			



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Modification of one platform and the Integrated Test and Training Site with Stage 1 including: <ul style="list-style-type: none"> Verification & validation and certification completed in accordance with approved plans; Training system delivered along with initial crew and trainer training; and Spares and support arrangements in place. IMR report endorsed and released for approval by the regulatory authority. 	IMR achieved 26 Nov 19
Initial Operational Capability (IOC)	Operationally employ MSMCS Stage 1 and Stage 2 and MWES on one platform and associated Fundamental Inputs to Capability such as crew training and Integrated Logistics Support. IOC for Stage 1 and Stage 2 expected December 22	Not yet achieved
Final Materiel Release (FMR)	MSMCS Stage 1, 2 and the MWES elements installed on six platforms and one Integrated Test and Training Site. Support arrangements including Materiel Transition Plans, spares, training and other Integrated Logistics Support requirements required to transition the materiel system into operational services and sustainment. FMR is expected to be achieved in Dec 26.	Not yet achieved

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Final Operational Capability (FOC)	Operationally employ MSMCS Stage 1, 2 and MWES in six platforms, the ITTS and associated Fundamental Inputs to Capability such as crew training and Integrated Logistics Support. FOC is expected to be achieved in Jun 27.	Not yet achieved
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Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance of Submarine Local Area Network Environment slippage affecting SEA1439 Phase 5B2 MAA milestones due to stakeholder engagement and the complexity of the required capability.	1. Ongoing Integrated Project Team meetings gives stakeholders the ability to engage directly and improve visibility of risks and mitigate as they arise. Project intends to downgrade this risk after system acceptance by the Royal Australian Navy.
Software security accreditation cannot be achieved due to limited or nil resources with stakeholders to support project related software.	The project has closed this risk as management of security accreditation has been transferred to the Royal Australian Navy.
There is a chance of delay/disruptions to capability set to work and testing because of COVID-19 travel restrictions (international and national)	1. Project seeking exemption from Border Force for US Government personnel to travel to Aust.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action

5.2 Major Project Issues

Description	Remedial Action
Late delivery of SEA1442 Phase 6 Wideband Satellite ground station First of Type installation has created an issue for satellite access. Delivery is expected to take approximately two (2) years from May 19 when the supplier was contracted to resolve the supply issue.	Issue downgraded after completion of platform system operation and verification testing of wideband satellite capability.
Implementation of Information Screening and Delivery System at Submarine Communication Centre – East is delayed because of disruptions to international supply chain and travel restrictions.	Project in liaison with stakeholders to bring forward other activities that do not require use of delayed material. Stakeholders aware of delay.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Industry being made aware of schedule deadlines through tender document and Commonwealth consider including schedule float.	Contract Management
Early engagement with stakeholders to finalise Configuration Change Proposals /Concessions about scope is critical to ensure the deliverables will be sufficient.	First of Type Equipment
Tender documents and contracts must identify contractor's key personnel for specialist task, e.g. telecommunications engineers / technicians.	First of Type Equipment
Regular detailed and customised reporting addressed directly to stakeholders ensures that information is received in high visibility projects or fast tracked schedules where there is no float. This is crucial to ensure all stakeholders are engaged and supportive. Stakeholder engagement through regular detailed and customised reporting will ensure stakeholders are engaged and supportive.	Schedule Management
Ensure Project and relevant stakeholders including freight organisations have clear lines of communications regarding movements of classified items.	Governance
SEA1439PH5B2 Engineering staff have gained considerable knowledge of communication systems on CCSM and believe this is opportune time to share this knowledge with Future Submarine Program. SEA1439PH5B2 has recently shared design/installation knowledge and Foreign Military Sales knowledge with Future Submarine Program.	Requirements Management / First of Type Equipment / Contract Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 21

Position	Name
Division Head	Mr Gregory Sammut
Branch Head	Henri Nord-Thomson, CDRE RAN

Project Data Summary Sheet¹⁶⁴

Project Number	SEA3036 Phase 1
Project Name	Pacific Patrol Boat Replacement (PPB-R)
First Year Reported in the MPR	2017-18
Capability Type	Replacement
Capability Manager	Chief of Navy
Government 1st Pass Approval	Apr 16
Government 2nd Pass Approval	Apr 16
Budget at 2nd Pass Approval	\$504.5m
Total Approved Budget (Current)	\$501.4m
2020-21 Budget	\$82.2m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA3036 Phase 1 – Pacific Patrol Boat Replacement is acquiring 21 vessels to replace the existing 22 Pacific Patrol Boats (PPBs) gifted to 12 Pacific Island Countries between 1987 and 1997 and two boats for Timor-Leste; as part of Australia's Pacific Maritime Security Program. The project also includes disposal of the current PPB fleet and minor upgrades to Pacific Island infrastructure to enable safe berthing of the new Guardian Class Patrol Boats (GCPBs).

1.2 Current Status

Cost Performance

In-year

As at 30 June 2021, the project **had spent \$71.3m** against an in-year budget **of \$82.2m**. The variance of \$10.9m is mainly due to escalation less than originally forecasted for the Prime contract.

Project Financial Assurance Statement

As at 30 June 2021 the project has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

The project is currently within the delivery phase. To date, the first **eleven** GCPB vessels have been delivered to their respective recipient nations as follows:

- Vessel 1 to Papua New Guinea in November 2018
- Vessel 2 to Tuvalu in April 2019
- Vessel 3 to Tonga in June 2019
- Vessel 4 to Samoa in August 2019
- Vessel 5 to Solomon Islands in November 2019
- Vessel 6 to Fiji in March 2020
- **Vessel 7 to Palau in September 2020**
- **Vessel 8 to Kiribati in June 2021**
- **Vessel 9 to Tonga in October 2020**
- **Vessel 10 to Papua New Guinea in March 2021**
- **Vessel 11 to Solomon Islands in May 2021**

In addition, from 01 July **2020** the project has achieved the following Key Milestones on time:

- **Vessel 9 (Tonga) Launch milestone achieved in July 2020**
- **Vessel 10 (PNG) Launch milestone achieved in October 2020**
- **Vessel 11 (Solomon Islands) Launch milestone achieved in January 2021**
- **Vessel 12 (Vanuatu) Launch milestone achieved in April 2021**
- **Vessel 12 (Vanuatu) Keel Laying milestone achieved in September 2020**

164 Notice to reader

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

- **Vessel 13 (PNG) Keel Laying achieved in November 2020**
- **Vessel 14 (Federation of Micronesia) Keel Laying achieved in March 2021**
- **Vessel 15 (Cook Islands) Keel Laying achieved in Jun 2021**

Subsequent vessels are to be delivered and gifted at a rate of one every three to four months through to the last vessel delivery scheduled for late 2023.

To date the prime contractor key milestones have been met in alignment with the contract schedule, with the exceptions to this being:

- Delivery of the first vessel which was approximately 5 weeks later than contracted as a result of delays in establishing a steel production facility, vessel production activities and the resolution of first of class issues. This delay incurred a corresponding delay to achievement of IMR/IOC which was achieved on 30 November 2018.
- Delivery of Vessel 7 **was** approximately 4 months later than contracted as a result of international travel restrictions due COVID-19.
- **Delivery of Vessel 8 which was approximately 10 months later than contracted as a result of international travel restrictions due COVID-19.**

Aspects of the project involving Pacific Island Country Infrastructure upgrades have been completed in PNG (October 2019), however COVID-19 global pandemic international travel restriction has delayed further upgrades in other Pacific Island Countries as Contractors cannot mobilise to site to conduct the work.

Disposal of the existing Pacific Patrol Boats is progressing in alignment with project needs.

Materiel Capability Delivery Performance

The first **eleven** vessels have been delivered to their recipient nations. COVID-19 caused delay to delivery of the vessels to Palau, **Kiribati and Papua New Guinea**. However, these delays **have been** accommodated within the overall project delivery schedule and are not expected to impact the project's achievement of Final Materiel Release.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background

SEA3036 Phase 1, Pacific Patrol Boat Replacement Project was initiated in 2014 to replace the 22 Pacific Patrol Boats (PPB) that were gifted to 12 Pacific Island Countries (PIC) between 1987 and 1997 under the auspices of the Pacific Maritime Security Program (PMSP). The project was mandated to deliver a new single class of vessel, built to contemporary regulatory standards of steel hulled construction, able to operate year round and enable basic local maintenance and repair in each nation.

The participating nations are Palau, Federated States of Micronesia (FSM), Republic of Marshall Islands (RMI), Papua New Guinea (PNG), Solomon Islands, Kiribati, Tuvalu, Vanuatu, Fiji, Tonga, Samoa and Cook Islands. The Project will build and deliver 21 PPB Replacement (PPB-R) vessels for 13 nations. The 13th nation is Timor-Leste that was not part of the original PPB Program but was offered two (2) PPB-R vessels by the Australian Government.

The PMSP aims to enhance practical cooperation across the South Pacific and build on the success of the PPB Program by broadening and strengthening the regions' capability to respond to issues such as maritime security, fisheries protection and transnational crime. Along with the PPB-R the PMSP will enhance cooperation through support to regional coordination centres and the provision of integrated aerial surveillance.

A Request for Tender was released in March 2015 for up to 21 PPB-R vessels no longer than 40 metres, built to a Commercial Standard with a steel hull. Similar to the current PPBs, the new vessels were to be easy to operate and maintain. The tender also included a support contract for an initial period of 7 years. The tender closed in June 2015, evaluations were completed in September 2015 with an Offer Definition and Improvement Activity concluded in January 2016. Austal Ships Pty Ltd was the preferred tenderer.

Combined Pass Project Approval was achieved in April 2016. Both the Acquisition and Support Contracts were signed with Austal Ships Pty Ltd in May 2016. The initial Acquisition Contract was for 19 vessels with a costed option for an additional two (2) PPB-R vessels, as Timor-Leste had not accepted the offer of two (2) vessels at contract signature. In December 2017, Timor-Leste accepted the offer and the Project Office exercised the costed option, through the execution of a contract change in April 2018.

Construction of the first vessel commenced in April 2017 with launch conducted ahead of schedule in May 2018 and Acceptance by the Commonwealth (combined Initial Materiel Release and Initial Operational Capability) in November 2018. Final Materiel Release/Final Operational Capability will be achieved when the last vessel is accepted by the Commonwealth currently planned for October 2023.

Due to a delay in the acceptance and handover of the first boat of approximately five weeks, caused by the establishment of a dedicated steel production facility and resolution of first of Class issues, Liquidated Damages have been accrued. Agreement has also been reached on provision of goods and services in kind to the Commonwealth in alignment with the value of Liquidated Damages accrued.

In addition, infrastructure upgrades necessary to enable safe and secure berthing of the new vessels are required for all nations receiving the PPB-R vessels. The project is scoped and funded to complete minor infrastructure upgrades to existing infrastructure and major upgrades (inclusive of Timor-Leste upgrades) are to be funded as part of Defence's international engagement through the Defence Cooperation Program.

The first two infrastructure contracts jointly funded (joint scope) by the project and the DCP have been awarded and works are underway. The first contract for delivery of upgrades in PNG, established in September 2018, has now been completed and was opened by the Minister of Defence in October 2019. The second contract for delivery of upgrades in Tuvalu, Tonga, Samoa, Fiji, Kiribati, Cook Islands and Vanuatu was established in February 2019 and is currently underway.

The project is only funded and scoped to deliver minor infrastructure upgrades. To standardise infrastructure delivery across the Pacific, it was planned to transfer the responsibility for execution of the infrastructure upgrades from the project to Indo-Pacific

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Enhanced Engagement (IPACE) Branch within Defence's International Policy Division. This was agreed and officially endorsed in September 2019.
Uniqueness The PPB-R is a vessel being built to commercial standards that will be gifted to 13 nations. The vessel is being built to International Maritime Orders (IMO) requirements, under the Australian Maritime Safety Authority (AMSA) flag. Lloyds Register is the classification society and the vessel will meet class requirements. However, ultimately the PPB-R will not be put into class. The Project's Capability Manager is Navy with International Policy as the Sponsor of the PPB-R Project and the Pacific Maritime Surveillance Program. Once gifted, each vessel will become a sovereign asset of the recipient nations.
Major Risks and Issues The Project is currently managing an issue related to Pacific nation crews unable to travel to Australia for conversion training and receive the PPB-R vessel. The Project has identified one High risk relating to the COVID-19 pandemic impact with public health and supplier capabilities on project deliverables, and has retained another High risk, relating to current PPB movement to Australia.
Other Current Related Projects/Phases N/A
Note Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Aug 14	Original Approved	5.7	1
Jan 15	Real Variation – Transfer	1.2	2
May 16	Government Combined Pass Approval	497.6	
	Total at Second Pass Approval (or key Government pre-Second Pass Approval)	504.5	
Jun 21	Exchange Variation	(3.1)	
Jun 21	Total Budget	501.4	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - Austal	(155.5)	
	Other Contract Payments/Internal Expenses	(24.0)	3
		(179.5)	
FY to Jun 21	Contract Expenditure - Austal	(67.7)	
	Other Contract Payments/Internal Expenses	(3.6)	4
		(71.3)	
Jun 21	Total Expenditure	(250.8)	
Jun 21	Remaining Budget	250.6	
	Notes		
1	This amount was for Initial Pass Project Approval.		
2	Transfer of funding to Defence Materiel Organisation, now known as Capability Acquisition and Sustainment Group, to support Offer Definition Improvement Activity and Anthropometric Study.		
3	Other contract payments and expenditure comprises of Pre Combined Pass expenditure (\$3.5m) and other project support contracted staff costs (\$11.9m), infrastructure costs (\$8.1m) and other direct project costs (\$0.5m).		
4	Other contract payments and expenditure includes, project support contracted staff costs of (\$3.1m) and other direct project costs of (\$0.5m).		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
85.3	82.7	82.2	PBS – PAES: \$2.6m due to reprogramming of the prime contract escalation and CCPs. PAES – Final Plan: \$0.6m due to foreign exchange fluctuations.
Variance \$m	(2.6)	(0.5)	Total Variance (\$m): (3.1)
Variance %	(3.0)	(0.6)	Total Variance (%): (3.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(10.9)	Australian Industry	Primarily due to the Prime Contract (Austal) associated with escalation.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	

			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
82.2	71.3	(10.9)	Total Variance	
		(13.3)	% Variance	

2.3 Details of Project Major Contracts

Details of Project Major Contracts								
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes		
		Signature \$m	30 Jun 21 \$m					
Austal Ships Pty Ltd	May 16	321.1	363.1	Fixed	Standard Defence Contract	1		
Notes								
1	Contract Value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).							
Contractor	Quantities as at		Scope			Notes		
	Signature	30 Jun 21						
Austal Ships Pty Ltd	19	21	PPB-R vessels, conversion training and associated support system products.			1		
Major equipment accepted and quantities to 30 Jun 21								
<ul style="list-style-type: none">Two Guardian class Patrol Boat gifted to Papua New Guinea.One Guardian class Patrol Boat gifted to Tuvalu.Two Guardian class Patrol Boat gifted to Tonga.One Guardian class Patrol Boat gifted to Samoa.Two Guardian class Patrol Boat gifted to Solomon Islands.One Guardian class patrol Boat gifted to Fiji.One Guardian class Patrol Boat gifted to PalauOne Guardian class Patrol Boat gifted to Kiribati.								
Notes								
1	Two additional PPB-R vessels were included into the scope of supply in April 2018 following acceptance in December 2017 by the Timor-Leste Government of the offer from the Australian Government to receive two boats.							

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirement Conduct	Mission System	Aug 16	N/A	Aug 16	0	
	Support System	N/A	Nov 16	Nov 16	0	1
Preliminary Designs Conduct	Mission System	Oct 16	N/A	Oct 16	0	
	Support System	N/A	May 17	May 17	0	1
Detailed Design Conduct	Mission System	Feb 17	N/A	Feb 17	0	
	Support System	N/A	Nov 17	Nov 17	0	1
Notes						
1	A contract change was executed in November 2016 to introduce the conduct of Support System Requirement Review, Support System Preliminary Design Review and Support System Detailed Design Review.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
Harbour Acceptance Trials (HATs) Complete	PPBR Boat 1	Jul 18	N/A	Oct 18	3	1
	PPBR Boat 2-5	Aug 19	N/A	Sep 19	1	
	PPBR Boat 6-9	Aug 20	N/A	Aug 20	0	
	PPBR Boat 10-13	Aug 21	N/A	Aug 21	0	
	PPBR Boat 14-18	Oct 22	N/A	Oct 22	0	
	PPBR Boat 19-21	Jul 23	N/A	Jul 23	0	
Acceptance	PPBR Boat 1	Oct 18	N/A	Nov 18	1	1,2,3
	PPBR Boat 2-5	Nov 19	N/A	Nov 19	0	3
	PPBR Boat 6-9	Nov 20	N/A	Jun 21	7	4
	PPBR Boat 10-13	Oct 21	N/A	Oct 21	0	3
	PPBR Boat 14-18	Dec 22	N/A	Dec 22	0	3
	PPBR Boat 19-21	Oct 23	N/A	Sep 23	(1)	3
Notes						
1	The variance of three months is primarily due to equipment supply chain delays and first of class issues with set-to-work activities.					
2	Testing of Boat 1 includes operation-like test activities in advance of Acceptance of Boat 1.					
3	Acceptance marks the successful completion of all tests and crew conversion training. The Commonwealth accepts the vessel from the contractor and then gifts the vessel to the receiving nation.					

Project Data Summary Sheets

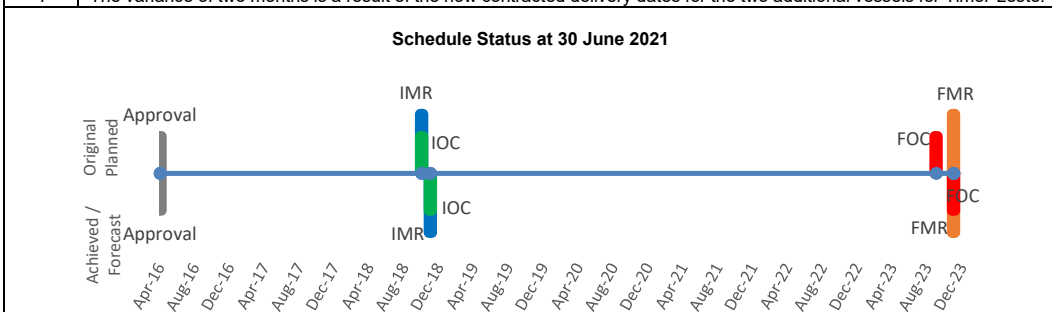
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4	The variance of seven months is due to COVID-19 pandemic travel restrictions restricting the crew for vessel 8 travelling to Australia to undertake conversion training and receive their vessel.
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3.3 Progress towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Oct 18	Nov 18	1	1,2
Initial Operational Capability (IOC)	Oct 18	Nov 18	1	3
Final Materiel Release (FMR)	Nov 23	Nov 23	0	1,2
Final Operational Capability (FOC)	Sep 23	Nov 23	2	3,4

Notes	
1	IMR and FMR dates were not scheduled at Combined Pass Government Approval.
2	IMR and FMR will be achieved at acceptance of boats by the Commonwealth.
3	IOC and FOC will be achieved at acceptance of the boats into PIC operational service. This is expected to occur simultaneously with IMR and FMR. The variance of one month is a result of delayed commencement of SATS and HATS for the first vessel, leading to a delay to delivery.
4	The variance of two months is a result of the now contracted delivery dates for the two additional vessels for Timor-Leste.



Note
Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

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 Joint Project Directive and Materiel Acquisition Agreement.
	Amber: N/A
	Red: N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report	

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	First vessel and associated support system technical documentation, initial spares and logistics documentation delivered and accepted by the Commonwealth. IMR was achieved 30 November 2018.	Achieved
Initial Operational Capability (IOC)	First vessel accepted into the Pacific Island Country operational service. IOC was achieved 30 November 2018.	Achieved
Final Materiel Release (FMR)	Last Vessel (21) delivered, completed delivery of all remaining Acquisition Project Support deliverables and accepted by the Commonwealth including completion of transition tasks in accordance with the PPB-R Transition Plan. FMR is forecast to be achieved in November 2023.	Not yet achieved
Final Operational Capability (FOC)	All vessels accepted into their Pacific Island Country operational service. FOC is forecast to be achieved in November 2023.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that the current PPBs will be either unable to transit to Australia or moved to Australia out of alignment with current planning leading to an impact to the phasing of Disposals costs incurred as part of the overall Project Budget.	Engage with Pacific Island Countries (PICs) & Maritime Surveillance Adviser and Technical Adviser via International Policy Division and Pacific Patrol Boat Systems Program Office to gain earliest advice on risk realisation. Flexibility has been incorporated into the PPB Disposal contract signed 6 July 2018, however this is limited in scope. Funds have been made available to Materiel Logistics Disposal and Sales Branch (MLDS) for undertaking movement of vessels unable to transit to the disposal site under own power. These funds are to enable MLDS to promptly arrange movement of boats so as to avoid the risk of Disposals Contract costs being incurred. PPBSPO to conduct material condition assessments and advise on seaworthiness to sail.
There is a chance that project deliverables will be affected by the COVID-19 pandemic leading to an impact on project scope, schedule and cost.	Risk Management plan Remain aware of Government Departments' advice and actions regarding: <ul style="list-style-type: none"> Defence: WHS policy, flexible work arrangements, intelligence. Health: public health policy, restrictions and advice. Foreign Affairs and Trade: country and travel advice. Home Affairs: travel restrictions and border control. State/Local Governments' restrictions.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
The acceptance of GCPBs has been affected by provision of crews to Austal for conversion training leading to an impact on project milestones.	PIC Government policies and restrictions Risk Management Plan Government Departments: <ul style="list-style-type: none"> Defence: WHS policy, flexible work arrangements, intelligence. Health: public health policy, restrictions and advice. Foreign Affairs and Trade: country and travel advice. Home Affairs: travel restrictions and border control. State/Local Governments' restrictions.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Allocate schedule allowance to enable ramp-up and learning of Defence requirements for Contractors inexperienced with Defence contracting templates.	Schedule Management
Develop, maintain and leverage positive Contractor relationships.	Contract Management

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Use of review teams for assurance on Contract Development when tailoring Defence contracting templates.	Requirements Management
Work with Contractor to ensure the broader implications of key milestone delay are understood and encourage early advice on delay.	Schedule Management

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	Mr David Kingston

Project Data Summary Sheet¹⁶⁵

Project Number	SEA1442 Phase 4
Project Name	MARITIME COMMUNICATIONS MODERNISATION
First Year Reported in the MPR	2014-15
Capability Type	Upgrade
Capability Manager	Chief of Navy
Government 1st Pass Approval	Dec 10
Government 2nd Pass Approval	Jul 13
Budget at 2 nd Pass Approval	\$385.6m
Total Approved Budget (Current)	\$434.1m
2020-21 Budget	\$34.4m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA1442 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 **\$34.9m** to 30 June 2021 of a budget of **\$34.4m**. The budget variance of **\$0.5m** is due to **accelerated procurement of spares**.

Project Financial Assurance Statement

As at 30 June 2021, project SEA1442 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 contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Detailed Design Review (DDR) was delayed by 4 months due to delay in completion of design activities by the contractor which resulted in liquidated damages being invoked during the 2016/2017 Financial Year and accepted by the Commonwealth in the form of additional goods and services provided by the contractor.

Training System and Shore Integration Test Facility Acceptance occurred in November 2019, **with one ship mission system accepted in April 2021**.

The SEA1442 Phase 4 delivery and installation schedule has been aligned to the Anzac Midlife Capability Assurance Program (AMCAP) scheduling and this alignment of programs has resulted in the SEA1442 Phase 4 Initial Materiel Release (IMR) moving from June 2018 to **July 2021**. Final Operating Capability (FOC) **remains at April 25**.

Materiel Capability Delivery Performance

The MTWAN Secondary Shore Gateway has been delivered and is operational, including the Training System and the Shore Integration Test Facility which were both accepted in November 2019. The first Anzac ship capability (**HMAS Anzac**) with associated support systems **was delivered by the contractor to CASG** in April 2021.

Note

Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

165 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.

1.3 Project Context

<p>Background</p> <p>SEA1442 (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.</p> <p>SEA1442 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 <i>Stirling</i> 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.</p> <p>The majority of individual equipment and sub-systems are either existing Military or Commercial grade items. Some development is required and involves functionality enhancements and Australianisation of the Military or Commercial grade items. 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.</p> <p>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 and to Leonardo UK Ltd in March 2021.</p> <p>Under the acquisition contract, Leonardo UK will: design, develop and install the NewGen MCS into the eight Anzac Class frigates; design, develop and install the support systems (including a training system and an integration and test capability); and develop and deliver integrated logistic support products. The support services contract became operative in November 2020.</p> <p>The project is also managing the acquisition of ARC-210 Gen 5 V/UHF multi-band multi-mode software defined radios through FMS with the US Government. The radios form part of the NewGen MCS.</p>
<p>Uniqueness</p> <p>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.</p> <p>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.</p>
<p>Major Risks and Issues</p> <p>The project is currently managing major issues relating to the COVID-19 outbreak disruption and deficiencies in the Prime Contractor's engineering management and resource management. A number of project risks were downgraded to Medium during 2020-21.</p>
<p>Other Current Related Projects/Phases</p> <p>N/A</p>
<p>Note</p> <p>Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Dec 10	Original Approved (First Pass Approval)	11.4	
Jul 13	Government Second Pass Approval	374.2	
	Total at Second Pass approval	385.6	
Jun 21	Exchange Variation	48.4	
Jun 21	Total Budget	434.1	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure – Leonardo UK	(166.6)	1
	Contract Expenditure – US Government	(15.1)	1
	Other Contract Payments / Internal Expenses	(34.8)	2
		(216.5)	
FY to 30 Jun 21	Contract Expenditure – Leonardo UK	(24.0)	1
	Contract Expenditure – US Government	(0.2)	1
	Other Contract Payments / Internal Expenses	(10.8)	3
		(34.9)	
Jun 21	Total Expenditure	(251.5)	
Jun 21	Remaining Budget	182.6	
Notes			
1	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		

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2	Other expenditure comprises \$7.0m for other minor contract expenditure, project management costs and travel, \$5.9m for Pre-contract work with Leonardo UK, \$4.6m for Multi-couplers, \$4.4m for Contractor Support, \$3.4m for MK3 Operations Room upgrade, \$2.5m for technical and engineering support, \$2.1m for other pre Second Pass studies and work, \$1.5m for Viasat modems, 1.2m for Interim Support , \$0.7m Power Distribution Panel replacement, \$0.5m for Shore Gateway West, \$0.3m for legal services, \$0.3m for AVA-20 Antennas, \$0.3m for the Shore Integration Facility, \$0.2m for WAMA support and \$0.1m for the High Data Rate Line of Sight (HDRLOS) integration Study.
3	Other expenditure comprises \$4.1m for contractor support, \$1.8m for other minor contract expenditure, project management costs and travel, \$1.7m for remaining Multi-couplers, \$1.6m for MK3 Operations Room upgrade and \$1.5m for Interim Support.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
39.8	35.3	34.4	PBS to PAES – The variation is primarily due to a re-programming of some spares receipts to FY21-22 and Acceptance of FFH#1 now to be achieved in July 2021. Some replacement equipment and system upgrades funds were brought forward to FY20-21 from FY21-22 to better align with upgrade program. PAES to Final Plan – The variation is due to exchange rate gains and losses.
Variance \$m	(4.5)	(0.9)	Total Variance (\$m): (5.4)
Variance %	(11.2)	(2.5)	Total Variance (%): (13.5)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	Variance of \$0.5m due to accelerated procurement of spares.
			Foreign Industry	
		0.5	Early Processes	
			Defence Processes	
			Foreign Government	
			Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
34.4	34.9	0.5	Total Variance	
		1.4	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Leonardo UK	Nov 2013	187.7	239.8	Variable	Standard Defence Contract	1, 2, 3
US Government (AT-P-BSH)	Dec 2014	17.0	15.4	Firm	FMS	1, 3, 4
Notes						
1	Contract value at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current budget exchange rates, and includes adjustments for indexation (where applicable).					
2	The contract price has increased to include the recommended spare parts list and to extend the contracted period in line with Navy's ship upgrade program.					
3	The scope of this contract is explained further below.					
4	Change in FMS value is due to acceptance of Amendment number 1 to FMS case AT-P-BSH. Decrease in FMS value is due to lower unit prices and associated costs for technical assistance and administration fees.					
Contractor	Contracted Quantities as at		Scope	Notes		
	Signature	30 Jun 21				
Leonardo UK	See scope	See scope	8 ship mission systems 1 training system 1 Shore Integration and Test facility 3 deployable High Data Rate line-of-sight systems			
US Government (AT-P-BSH)	131	140	ARC-210 Gen 5 radios, technical data, and technical support.	1		
Major equipment accepted and quantities to 30 Jun 21						
MTWAN Secondary Gateway, Training Systems, Shore Integration and Test Facility (SITF) and one ship mission system has been accepted.						
Notes						
1	Additional radios ordered as spare parts					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirements	NewGen MCS and Support System	Sep 14	N/A	Dec 14	3	1
Preliminary Design	NewGen MCS and Support System	May 15	Sep 15	Sep 15	4	2
Detailed Design	MTWAN Secondary Gateway	Sep 14	N/A	Jan 15	4	3
	NewGen MCS	Oct 16	N/A	Feb 17	4	4
	Support System	Apr 17	Jun 17	Sep 17	5	5
	First of Class Integration Detailed Design Review (IDDR)	May 17	N/A	Oct 17	5	6
Notes						
1	Delayed from originally planned due to slow ramp up/contractor performance.					
2	Contract schedule re-baselined to reflect previous System Definition Review (SDR) milestone slippage and contractor's improved understanding of the work.					
3	MTWAN System Requirements and Preliminary Design addressed prior to Second Pass Approval. In order to minimise risk to the operational network upon connection of the MTWAN Secondary Gateway, a demonstration of the design in the MTWAN shore integration facility was requested prior to design acceptance. This required additional time to complete.					
4	The conduct of the Detailed Design Review (DDR) and its associated system demonstration occurred four months later than the contracted date which triggered liquidated damages.					
5	The Contractor achieved the Support System DDR in September 2017 (five months later than the Contract Date due to delays resulting from the later than planned achievement of DDR).					
6	The Contractor achieved the First of Class IDDR in October 2017 (five months later than the Contract Date due to delays resulting from the later than planned achievement of DDR).					

3.2 Contractor Test and Evaluation Progress

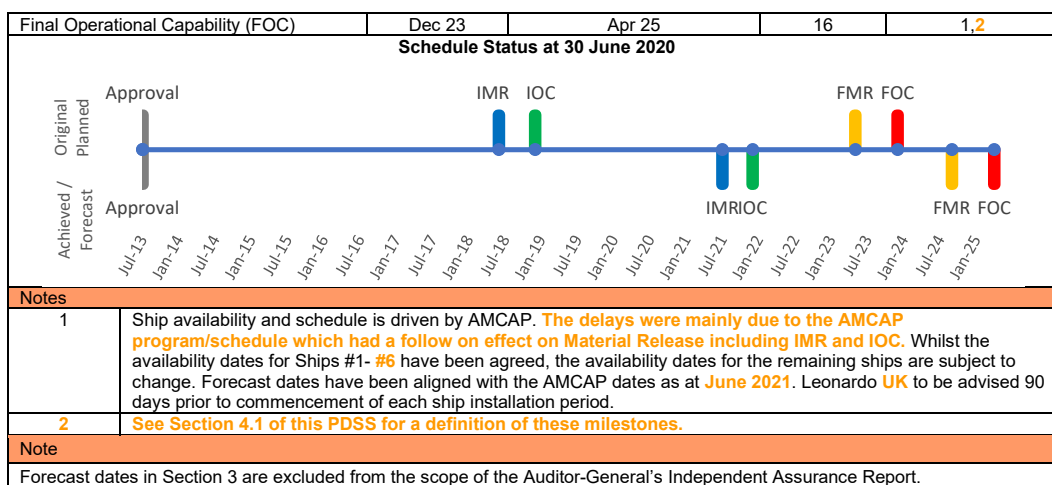
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration	NewGen MCS	Jun 18	Jul 20	Apr 21	34	1
Acceptance	MTWAN Secondary Gateway	Apr 15	N/A	Mar 15	(1)	
	Training System	Jun 17	Nov 18	Nov 19	29	2
	Shore Integration and Test Facility (SITF)	Dec 16	Mar 19	Nov 19	35	3
	Ship #1	Jun 18	Jul 21	Jul 21	37	1,4
	Ship #2	Apr 19	Apr 21	Apr 21	24	1,4
	Ship #3	Nov 19	Sep 21	Oct 21	23	4
	Ship #4	Jun 20	Jul 22	Jul 22	25	4
	Ship #5	Feb 21	Jan 23	Jan 23	23	4
	Ship #6	Sep 21	Sep 23	Sep 23	24	4
	Ship #7	Apr 22	Feb 24	Feb 24	22	4
	Ship #8	Sep 22	Sep 24	Sep 24	24	4
Notes						
1	Delays attributed to alignment with planned ship availability per the AMCAP, and the effects of the COVID-19 pandemic, specifically travel restrictions which resulted in the contractor's UK based personnel being unable to travel to undertake set-to-work and acceptance testing in WA, and the project being unable to travel to carry out onsite test and trials activities with the contractor.					
2	Contract Change Proposal (CCP-011) of 25 June 2018 included an adjustment of the schedule for this Milestone. This Milestone was achieved in November 19, being twelve months later than the updated Contract Date.					
3	SITF acceptance date initially incorrectly positioned in the contract. The delay is due to the need to use the SITF during Ship #1 test and acceptance period which was extended when SEA1442 Phase 4 was aligned to AMCAP. This Milestone was achieved in November 2019, being eight months later than the updated Contract Date.					
4	Ship availability and schedule is driven by AMCAP. Forecast and current contract dates have been aligned with the AMCAP dates updated in 30 Jun 2021. Leonardo UK to be advised 90 days prior to commencement of each ship installation period.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jun 18	Jul 21	36	1,2
Initial Operational Capability (IOC)	Dec 18	Dec 21	23	1,2
Materiel Release 2 – Ship # 2	Apr 19	Apr 21	24	1,2
Materiel Release 3 – Ship # 3	Dec 19	Oct 21	23	1,2
Materiel Release 4 – Ship # 4	Aug 20	Jul 22	23	1,2
Materiel Release 5 – Ship # 5	Apr 21	Jan 23	21	1,2
Materiel Release 6 – Ship # 6	Dec 21	Sep 23	21	1,2
Materiel Release 7 – Ship # 7	Aug 22	Feb 24	18	1,2
Final Materiel Release (FMR)	May 23	Sep 24	16	1,2

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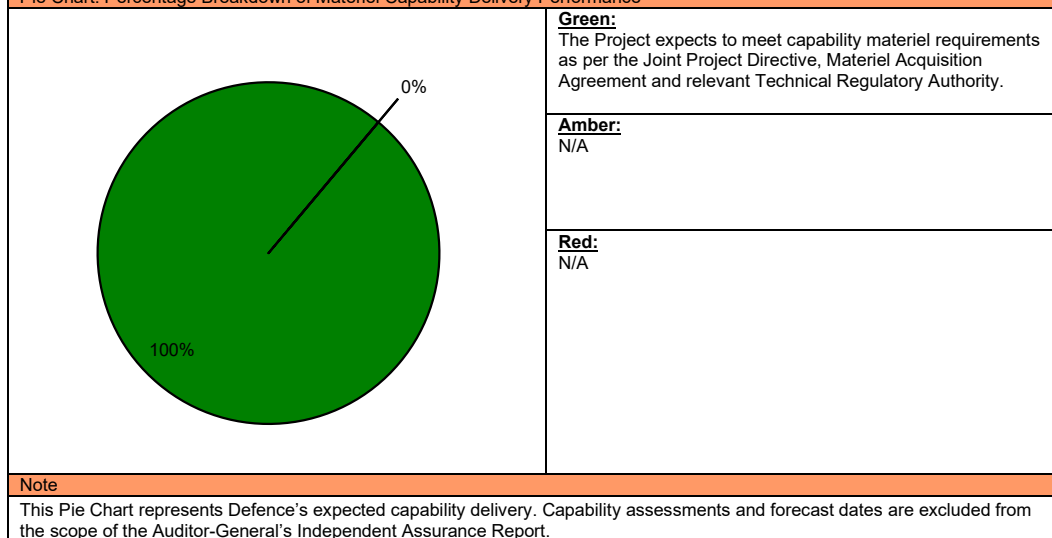
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Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



4.2 Constitution of Materiel Release and Operational Capability Milestones

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 occur in July 2021 .	Not yet achieved.
Initial Operational Capability (IOC)	ANZAC Class ship fitted with the new equipment and proven through testing to communicate with other platforms using voice, High Frequency Internet Protocol and High Data Rate Line of sight. IOC expected to be achieved in December 2021 .	Not yet achieved
Final Materiel Release (FMR)	All 8 ships accepted and all support arrangements in place. FMR is expected to be achieved in September 2024 .	Not yet achieved.
Final Operational Capability (FOC)	Operational Release and FMR have been met and endorsed by CN. FOC will occur when all 8 Ships have been Accepted and all Crew Training has been successfully completed, and the Support System elements are in place and running in accordance with respective Contract requirements.	Not yet achieved

	FOC is expected to be achieved in April 2025.	
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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 unknown or late changes to ship configuration.	<ul style="list-style-type: none"> Continue to work collaboratively with the ANZAC SPO through established working groups and regular meetings to monitor changes to ship configuration. In consultation and collaboration with AMCAP, ensure site surveys are conducted as late as possible prior to installation to verify ship configuration and modify installation design if necessary. Downgraded to a Medium Risk due to increased installation experience and the benefit of lessons learned minimising the likely severity.
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 SEA1442 installation.	<ul style="list-style-type: none"> Work collaboratively on the Integrated Master Schedule (IMS) with the Contractor, ANZAC System Program Office (SPO) and the AMCAP. Continue to liaise closely with ANZAC SPO and the AMCAP through established working groups and regular meetings to monitor the progress of the installation. Downgraded to a Medium Risk as a result of Project confidence in the integrated installation environment.
Platform Integration – There is a chance that installation will be affected by delays to acceptance testing due to rework required by poor workmanship.	<ul style="list-style-type: none"> Continue to liaise closely with the Contractor, ANZAC SPO and the AMCAP through established working groups and regular meetings to monitor the progress of the installation. Downgraded to a Medium Risk due to improvement in installation teams' output.
Engineering Management Performance – There is a chance that deficiencies in the Contractor's Engineering Management performance may adversely affect the achievement of future Milestones, leading to an impact on schedule.	<ul style="list-style-type: none"> Continue to liaise closely with the Contractor, through regular meetings and interaction with respect to its preparedness for future Milestones. Utilisation of Contractual mechanisms. Risk realised and is disclosed in Section 5.2 – Major Project Issues.
Estimation of Required Resources – There is a chance that the Contractor may fail to adequately estimate the time and resources required to complete all required work to meet a Milestone, leading to an impact on schedule.	<ul style="list-style-type: none"> Continue to liaise closely with the Contractor, through regular meetings and interaction with respect to its preparedness for future Milestones. Utilisation of Contractual mechanisms. Risk realised and is disclosed in Section 5.2 – Major Project Issues.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
COVID-19 Outbreak Disruption – The outbreak has had a number of effects on the Project.	<ul style="list-style-type: none"> The effects of COVID 19 have created a number of issues for the Project including: Inability of the ACT-based Project team and Defence SME's to travel to WA to support the installation & carry out testing and witnessing activities; Limitations on the UK contractor's team to travel to Australia to support installation.
Deficiencies in Prime Contractors Engineering Management and Resource Management effecting the likelihood of Milestone achievement.	<ul style="list-style-type: none"> Work with the Contractor to assist estimation of the time required to produce Deliverables and other artefacts required for Milestones and to assist it employing and retaining sufficient technical & installation staff. Being actively managed by Team leadership with Leonardo Leadership Made more difficult due to COVID-related travel restrictions and platform availability issues.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure requirements are clear, unambiguous, and that a common understanding is established between all parties as early as possible, including the Capability Acquisition and Sustainment Group, Capability Manager, end-user community and the	Requirements Management

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contractor.	
Interfaces, and in particular legacy interfaces, need to be well defined, consistent, documented, and well understood by all parties. The risk profile and associated contingency needs to include interface management.	Requirements Management
More attention needs to be given to the possible impacts when tailoring the Standard Defence Contract suite of contracting templates to suit individual project context and strategy in order to avoid unnecessary detail, resource burden, cost and schedule.	Contract Management
Additional effort is required by the project team during contract negotiations to assess and better understand scope, schedule, risk, cost and resource commitments made under the contract, including an assessment that the schedule is realistic.	Contract Management
Pay close attention to schedule and ensure all work is captured, logical and can form a basis for sound management post contract award. Alignment of multiple schedules in a complex multi contractor environment, such as between SEA1442 Phase 4 and AMCAP, can be a source of additional and unnecessary effort if not closely monitored and aligned.	Schedule Management
Access to appropriately skilled and experienced resources is critical to achieving project planning and management objectives.	Resourcing Schedule Management
Project Team coordination of the training program and data codification involves significant effort and preferably dedicated experienced Integrated Logistics Support (ILS) resources should be allocated early in the Project.	Resourcing
Ship availability may be subject to change with minimal notice and may impact on the contractor's ability to deliver against key milestones. Ensuring effective communication between the project office, the Capability Manager and other relevant Defence stakeholders is essential. This will ensure all stakeholders are aware of what capability is being received if schedules change unexpectedly.	Platform Availability
Importance of a localised workforce. In response to COVID-19 related travel issues affecting the ability to travel and issues relating to the CASG team being based away from installation activities in West Australia, the Project has prioritised locating key workforce in WA and encouraged the Contractor to empower its local WA based subsidiary to take on more responsibilities.	Resourcing

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Mr Gavin Rawlins
Branch Head	Mr Tom Brennan

Project Data Summary Sheet¹⁶⁶

Project Number	SEA1448 Phase 4B
Project Name	ANZAC AIR SEARCH RADAR REPLACEMENT
First Year Reported in the MPR	2018-19
Capability Type	Replacement
Capability Manager	Chief of Navy
Government 1st Pass Approval	Mar 15
Government 2nd Pass Approval	Jun 17
Budget at 2nd Pass Approval	\$427.8m
Total Approved Budget (Current)	\$429.1m
2020-21 Budget	\$39.9m
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

SEA1448 Phase 4B is replacing the SPS-49(V) 8 Air Search Radar on the 8 Anzac class frigates with a modern digital Long Range Air Search Radar. The project will also replace the existing Identification Friend or Foe (IFF) system with a new system. By replacing the existing air search radar and IFF system, the project will deliver an integrated and supportable modern Long Range Air Search Capability (LRASC) into the Anzac Class Frigates.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2021, the project had underspent by **\$3.4m due to delays resulting from security upgrades of the Phased Array Radar Simulator and reduced travel**. The project achieved the milestones aligned with ANZAC Midlife Capability Assurance Program.

Project Financial Assurance Statement

As at 30 June 2021, project SEA1448 Phase 4B has reviewed the approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The Project has not applied contingency in the financial year.

Schedule Performance

The project has progressed through the Design phases and is now within the Delivery phase. The first mast was installed on HMAS Arunta in December 2018 and Sea Acceptance Trials were completed in February 2020, with all reports delivered in Q2 2020.

In March 2020 Government was advised of a schedule review with Industry that determined an additional 26 weeks was critical to the AMCAP realisation across the class. The schedule for ship availability to replace the Long Range Air Search Radar and integrated IFF system was amended as a consequence but did not affect the SEA1448 Phase 4B Final Operating Capability (FOC) date.

The second ship, HMAS Anzac, commenced Sea Qualification Trials in June 2020 and **concluded** in October 2020. The delays to entering Sea Qualification Trials correspond to delays in the AMCAP program.

Initial Operating Capability (IOC) **was** delayed from the original planned date due to the complexities in achieving United States Identification Friend or Foe (IFF) certification requirements. Additionally COVID-19 international travel restrictions prevented United States IFF certification authorities from participating in certification activities **as originally planned. Rescheduled certification activities concluded in October 2020. Notification of IFF certification was achieved in April 2021.**

Materiel Capability Delivery Performance

The project expects to deliver eight modern digital air search radars with integrated Identification Friend or Foe (IFF) system in the Anzac Class Frigates. The first mission system ship set capability with associated support systems is scheduled for acceptance in Quarter 1 2021, but is dependent on IFF certification.

Initial Materiel Release (IMR) was split into two Initial Materiel Releases. The first release enabled the project to support acceptance of the radar to enable the RAN to utilise the capability on HMAS Arunta, realign the CEA Technologies payment schedule and commence the warranty period. The second release was aligned with IFF certification being sufficiently completed. IMR 1 was declared December 2020 with exceptions. IMR2 was declared April 21 with exceptions.

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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.

Initial Operational Capability is scheduled for July 2021.
Note
Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

<p>Background</p> <p>SEA1448 Phase 4B was entered into the 2009 Defence Capability Plan (DCP) to replace the existing and ageing Anzac Class AN/SPS-49(V)8 Long Range Air Search Radar System with a modern, digital air search radar that complements the capabilities and functionality of the Phased Array Radar System delivered under the SEA1448 Phases 2A and 2B – Anti Ship Missile Defence (ASMD) Program. In addition, the current Identification Friend or Foe (IFF) does not support the next generation of encrypted military IFF (Mode 5) which is required to operate effectively with our Allies as deemed by Vice Chief of the Defence Force (VCDF).</p> <p>In March 2015, at Gate 1 (previously first pass) multiple options were presented to Government, spanning Militarily-Off-The-Shelf (MOTS) and Developmental options. The MOTS solution; an upgraded variant of the AN/SPS-49(V)8 was not progressed further as it did not resolve the obsolescence issues faced by the radar.</p> <p>Government did approve Defence's proposal to select CEA Technologies Pty Limited (CEA) as the sole Australian provider of Phased Array Radars (PAR) to supply a replacement long range air search radar using the developmental technology successfully installed under the SEA1448 Phase 2A and 2B ASMD Program. This solution provided a three dimensional PAR with six fixed faces and an integrated IFF capability. The Mission System Integrator role would be undertaken by Industry Participants of the Anzac Warship Asset Management Agreement (WAMA) (previously Anzac Ship Integration Materiel Support Program Alliance (ASIPA)).</p> <p>The Project adopted the Smart Buyer Framework proceeding to Gate 2 Government Approval committees throughout the 2016-17 period. In November 2016, Government approved early access to Acquisition Phase funding, to enable the project to progress a number of time-critical activities prior to Second Pass Approval. This allowed the project to maintain schedule and continue to effectively mitigate 2016-17 key schedule risks (subsequently retired) that were identified during application of the Smart Buyer framework. Those activities included:</p> <ul style="list-style-type: none"> Advanced material purchases for CEA; and BAE to commence Mast production. <p>In June 2017, at Gate 2, Government approved Defence's proposal to act as the Prime integrator for the Long Range Air Search Capability (LRASC), and that the project has overall responsibility for procuring and managing the key components that make up the final Mission System:</p> <ul style="list-style-type: none"> A new Long Range Air Search Radar (LRASR) with integrated IFF, to be delivered by CEA; The integration of the LRASR and IFF system into the Anzac Platform and Combat Management System (CMS), to be delivered by the industry participants under the Anzac Warship Asset Management Agreement (WAMA); and Acquisition of supporting equipment (and services) under Foreign Military Sales (FMS). <p>Production timings and integration of the mission system(s) into the Anzac Class is driven by the AMCAP schedule, managed by the ANZAC System Program Office.</p> <p>Uniqueness</p> <p>The CEA Phased Array Radar (PAR) technology on which SEA1448 Phase 4B is based is considered to be a Strategic Industry Capability (SIC). The acquisition of which will ensure the RAN has regionally superior technology into the future. The IFF system will be integrated into the PAR faces. This is a world leading technological step to have the IFF interrogator integrated into the PAR faces without a secondary system requirement.</p> <p>Major Risks and Issues</p> <p>The Major risks the project faces are:</p> <ul style="list-style-type: none"> The project delivery schedule will be affected by a delay in the acceptance of capability by Navy. The AIMS Box and Platform level certified software will be impacted by the rectification of deficiencies identified by AIMS. CEA data being passed from Commonwealth to Commonwealth interrelated projects may lead this information being disclosed to a non-authorized recipient. <p>The Major issues the project faces are:</p> <ul style="list-style-type: none"> Contractual deliverables impact the forecast spend spread of the project. <p>Other Current related Projects/Phases</p> <p>The deliverables provided by SEA1448 Phase 4B have been incorporated into the overall ANZAC Midlife Capability Assurance Program (AMCAP) schedule. The ANZAC AMCAP involves a suite of upgrades to the ANZAC platform being delivered by multiple projects, of which SEA1448 Phase 4B is one. Delays or issues with other AMCAP projects can delay the schedule of SEA1448 Phase 4B.</p> <p>The AMCAP projects consist of:</p> <p>SEA1448 Phase 4A – this Phase delivered a contemporary Electronic Support Measures (ESM) system as part of the ASMD upgrade program and is being re-installed under the SEA1448 Phase 4B program. SEA1442 Phase 4 – this Phase will upgrade the communication capability in the eight Anzac Class Frigates and address communications system obsolescence in the Anzac Class.</p> <p>Anzac Platform System Remediation (PSR) program – the PSR will see the upgrade of on board systems that includes ventilation, the propulsion control system to improve power and efficiency, waste management and water production systems.</p> <p>Note</p> <p>Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>
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Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Oct 13	Original Approved	3.0	1
Jun 14	Real Variation – Scope	5.9	2
Mar 15	Government First Pass Approval	45.2	3

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Jan 17	Real Variation –Scope	20.4	4
Aug 17	Government Second Pass Approval	353.3	
	Total at Second Pass Approval	427.8	
Jun 21	Exchange Variation	1.3	
Jun 21	Total Budget	429.1	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - CEA	(139.5)	5
	Contract Expenditure - WAMA	(109.1)	
	Other Contract Payments/Internal Expenses	(27.1)	
		(275.7)	
FY to Jun 21	Contract Expenditure - CEA	(18.7)	
	Contract Expenditure - WAMA	(16.6)	
	Other Contract Payments/Internal Expenses	(1.2)	5
		(36.5)	
Jun 21	Total Expenditure	(312.1)	
Jun 21	Remaining Budget	116.9	

Notes

1	The project's original approved budget was the amount received for project initiation prior to Government Second Pass Approval.
2	To advance the L-Phased Array Radar Risk Reduction Program
3	Government First Pass approval to advance the progress of the risk reduction program to Gate 2.
4	Early release of funding to commence activities in advance of Gate 2 Approval.
5	Other expenses comprises FMS payments, operating expenditure and other capital expenditure not attributable to the listed contracts.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
43.0	39.9	39.9	PBS - PAES: The variation is primarily due to amending the delivery dates of certain milestones to reduce risk within CEA's payment schedule resulting in Contract Change Proposal 004. PAES – Final Plan: There is no variation.
Variance \$m	(3.1)	(0.0)	Total Variance (\$m): (3.1)
Variance %	(7.2)	(0.0)	Total Variance (%): (7.2)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(3.4)	Australian Industry	The variation is primarily due to delays in the installation and validation of the Phased Array Radar Simulator.
			Foreign Industry	
			Early Processes	
			Defence Processes	
		(0.1)	Foreign Government	
			Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
39.9	36.5	(3.4)	Total Variance	
		(8.5)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
CEA	Sep 17	166.6	163.2	Fixed with indices escalation	Standard Defence Contract	1,2
WAMA	Aug 17	136.1	142.8	Variable with Pain/Gain Share	Alliance	2,3
Notes						
1	SEA1448 Phase 4B contract execution date is official order under the Head Contract DMO/ESD/00297/2013 Standing Offer for Phased Array Radar Development Services, executed 30 October 2013. CCP01 reduced the contract price by removing the performance security as the technology had been demonstrated.					
2	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
3	WAMA consists of Commonwealth of Australia, BAE Systems Maritime Australia (BAE), Saab Australia Pty Ltd (Saab) and Naval Ship Management Pty Ltd (NSM). The primary Industry Partners for SEA1448 Phase 4B tasking is BAE and Saab.					

Contractor	Contracted Quantities as at		Scope	Notes
	Signature	30 Jun 21		
CEA	1	1	Qualification and Verification System	
	8	8	Mission System Ship Sets	
	2	2	Depot Spare Systems	
	4	8	Training Simulators	1
WAMA	8	8	Mast, Ship Systems and integration	
	8	8	Combat Management System (CMS) upgrades and integration	
Major equipment accepted and quantities to 30 Jun 21				
Aft masts have been installed on HMAS <i>Arunta</i> , HMAS <i>Anzac</i> , HMAS <i>Warramunga</i> and HMAS Perth . As of 30 June 2021, integration, set to work and harbour acceptance trials of CEA's Mission System Ship Sets One (1), Two (2) and Three (3) are complete. Sea acceptance tests have been completed for Mission System Ship Sets One (1) and Two (2).				
Notes				
1	CEA contract change proposal was accepted to modify the number of training simulators from (4) to (8) to support the training requirements solution put forward by the WAMA.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Requirements	CEA Radar System Performance Specification	N/A	N/A	Aug 17	N/A	
Preliminary Design	Mast	N/A	N/A	Apr 17	N/A	1
	Platform	N/A	N/A	Sep 17	N/A	1
	Whole of Ship	N/A	N/A	Nov 17	N/A	1
Critical Design	Mast	N/A	N/A	Sep 17	N/A	1
	Platform	N/A	N/A	Jun 18	N/A	1
	Whole of Ship	N/A	N/A	Jun 18	N/A	1
Notes						
1	Original Planned dates for completion of Preliminary and Critical Design activities not disclosed within the Integrated Master Schedule as these dates were determined prior to Second Pass Approval.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
System Integration	Ship 1 – CAT1 (Factory Acceptance Testing)	Nov 18	N/A	Apr 19	5	1
	Ship 1 – CAT2 (Environmental Qualifications) and CAT3 (Integration)	Jan 19	May 20	Jul 20	18	2,3
	Ship 1 – CAT4 (Harbour Acceptance Trials)	Feb 19	N/A	Oct 19	8	4
	Ship 2 – CAT4 (Harbour Acceptance Trials)	Aug 19	N/A	May 20	9	4,5
	Ship 3 – CAT4 (Harbour Acceptance Trials)	Jul 20	Mar 21	Jun 21	11	6
	Ship 4 – CAT4 (Harbour Acceptance Trials)	Dec 20	Dec 21	Dec 21	12	6
	Ship 5 – CAT4 (Harbour Acceptance Trials)	Nov 21	Jul 22	Jul 22	8	6
	Ship 6 – CAT4 (Harbour Acceptance Trials)	May 22	Feb 23	Feb 23	9	6
	Ship 7 – CAT4 (Harbour Acceptance Trials)	Feb 23	Aug 23	Aug 23	7	6
	Ship 8 – CAT4 (Harbour Acceptance Trials)	Aug 23	Mar 24	Mar 24	9	6
Acceptance	Ship 1 – CAT5 (Sea Acceptance Trials)	Sep 19	N/A	Mar 20	6	4
	Ship 2 – CAT5 (Sea Acceptance Trials)	May 20	N/A	Oct 20	5	6
	Ship 3 – CAT5 (Sea Acceptance Trials)	Feb 21	May 21	Jul 21	6	6
	Ship 4 – CAT5 (Sea Acceptance Trials)	Sep 21	Mar 22	Mar 22	7	6
	Ship 5 – CAT5 (Sea Acceptance Trials)	Jun 22	Sep 22	Sep 22	1	6
	Ship 6 – CAT5 (Sea Acceptance Trials)	Dec 22	May 23	May 23	4	6
	Ship 7 – CAT5 (Sea Acceptance Trials)	Oct 23	Sep 23	Sep 23	-1	6

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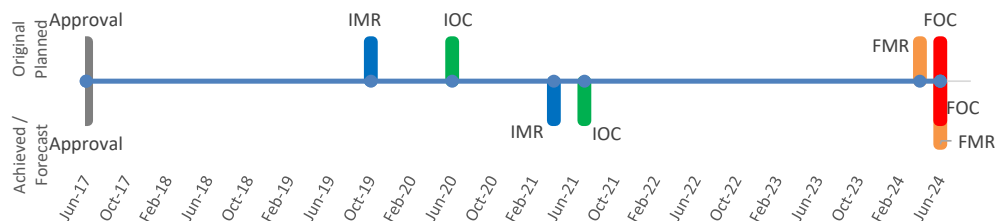
	Ship 8 – CAT5 (Sea Acceptance Trials)	Apr 24	Apr 24	Apr 24	0	6
Notes						
1	A manufacturing delay with CEA resulted in the Factory Acceptance Testing from November to December 2018. Test Reports were accepted in April 2019.					
2	CEA Contract Change Proposal approved the delay in which CEA are to obtain Environmental Qualification for the LRASR.					
3	CAT 3 integration activities were completed in May 2019. Acceptance of CAT 3 reports occurred in September 2019. The CAT 2 test results were received in July 2020. This delay was caused by the limited number of appropriately certified third party test facilities and longer than anticipated test durations.					
4	Delays in the AMCAP Schedule for Ship 1 and Ship 2 has resulted in delays to CAT 4 and CAT 5.					
5	Ship 2 CAT4 testing was undertaken in Apr 2020, with acceptance of the test reports in May 2020.					
6	Forecast dates for ship availability based on the approved AMCAP Ship Maintenance Availability Master Plan (SMAMP).					

3.3 Progress toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release 1 (IMR1)	Oct 19	Dec 20	14	1, 2, 3, 4, 5
Initial Materiel Release 2 (IMR2)	Mar 21	Apr 21	1	2, 3, 4, 6
Initial Operational Capability (IOC)	Jun 20	Jul 21	13	1, 4
Final Materiel Release (FMR)	Apr 24	Jun 24	3	4, 7
Final Operational Capability (FOC)	Jun 24	Jun 24	0	4

Notes	
1	Initial Materiel Release (IMR) and Initial Operating Capability (IOC) dates are dependent on Identification Friend or Foe (IFF) certification, which was impacted by COVID-19 travel restrictions.
2	IMR1 with radar acceptance occurred December 2020 and IMR2 IFF certification was completed by April 2021 .
3	Delays in the AMCAP Schedule for Ship 1 and Ship 2 has resulted in delays to CAT 4 and CAT 5.
4	These milestone definitions are aligned with Section 4.2
5	IMR1 was achieved with three exceptions. One of these exceptions had not been resolved at 30 June 2021. This is disclosed as an issue in Section 5.2 of this PDSS.
6	IMR2 was achieved with four exceptions. Two of these exceptions had not been resolved at 30 June 2021. This is disclosed as an issue in Section 5.2 of this PDSS.
7	Delay is due to alignment with Ship availability and the testing milestones in Section 3.2.

Schedule Status at 30 June 2021

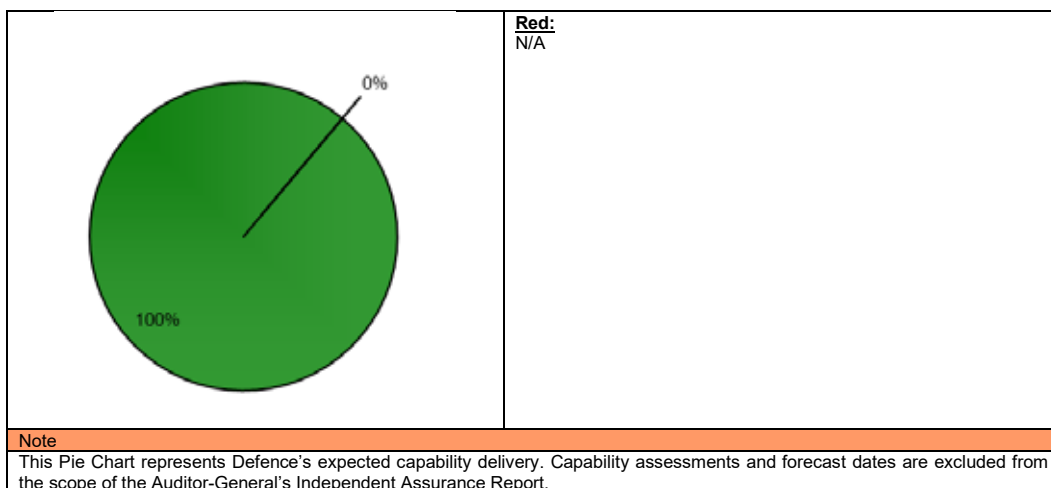


Note
Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

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 Joint Project Directive and Materiel Acquisition Agreement.
	Amber: N/A



4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR1)	Integration of one (1) Air Search Radar and partial IFF System into the first ship, including installation of a new aft-mast and reinstallation of all extant systems. Delivery of on-board spares and training packages. Establishment of Initial Support Contracts for both Radar and Integration.	Achieved with exceptions
Initial Materiel Release (IMR2)	Integration of one (1) Air Search Radar and full IFF System into the second Anzac Class Frigate, including installation of a new aft-mast and reinstallation of all extant systems. Delivery of on-board spares.	Achieved with exceptions
Initial Operational Capability (IOC)	Installation of equipment onto ships completed to date , development of operator and maintainer training package and initial package completed, tactical doctrine updated, completion of acceptance trials on the first ship completed, and the logistics support arrangements in place. Achievement of IOC is scheduled for July 2021 but is dependent of Identification Friend or Foe (IFF) certification.	Not Yet Achieved
Final Materiel Release (FMR)	Integration of one (1) Air Search Radar and IFF System into the final ship. Delivery of all outstanding logistic documentation. Delivery of a Support system. Final delivery of on-board spares and depot spares. Achievement of FMR is scheduled for June 2024 .	Not Yet Achieved
Final Operational Capability (FOC)	Installation of equipment onto all ships is complete, training facilities have been set to work, operator and maintainer trainer is in a steady state, tactical doctrine is mature, full logistics support arrangements are in place, establishment and other Fundamental Inputs to Capability arrangements are complete. Achievement of FOC is scheduled for June 2024.	Not Yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the project delivery schedule will be affected by a delay in the acceptance of capability by Navy leading to an impact on both schedule and reputation	To advise all key stakeholders of delays and request assistance as required.

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There is a chance that the recipients of CEA data being passed from Commonwealth to Commonwealth interrelated projects may lead this information being disclosed to a non-authorized recipient, who may inadvertently expose the data therefore impacting sovereign capability leading to an impact on cost, schedule and reputation.	Limit access to data through the application of the Defence records management policy.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
Description	Remedial Action
There is a chance that the AIMS Box and Platform level certified software will be impacted by the rectification of deficiencies identified by AIMS leading to an impact on engineering approvals, cost and schedule of Follow-On ships using the updated certified software	The United States Air Traffic Control Radar Beacon System Identification Friend or Foe Mark XIIA electronic identification System (AIMS) Program Office (PO) is the IFF certification authority. Revert software to the baseline approved by AIMS until software rectification has been made, tested and evidence provided to AIMS for approval.

5.2 Major Project Issues

Description	Remedial Action
Contractual deliverables are impacting the forecast spend spread of the project.	Arrayed faces have been required to undertake minor hardware design changes that have impacted schedule. Project Office has agreed to the re-prioritisation of some deliverables to focus on ship integration activities.
Certification for the Identification Friend or Foe (IFF) interrogator was not achieved in time to meet the original IOC date due to the complexities in meeting requirements for United States IFF certification and Australia not being able to certify the equipment internally.	In February 2020 Government was advised that the IOC date had been changed to March 2021. The Integrated Investment Program (IIP) bi-annual update advised of IOC being delayed until June 2021 due to COVID-19 impacting availability of the United States AIMS PO to travel to Australia to participate in IFF certification activities.
IMR1 was achieved with three exceptions. One of these exceptions, relating to the final Integrated Logistics Support matrix, had not been resolved at 30 June 2021.	Consistent liaison with key stakeholders will resolve the exception and testing regimes monitored for any further issues.
IMR2 was achieved with four exceptions. Two of these exceptions, relating to electromagnetic testing and the final Integrated Logistics Support matrix, had not been resolved at 30 June 2021.	Consistent liaison with key stakeholders will resolve the exceptions and testing regimes monitored for any further issues.
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
The Phased Array Radar and IFF technology used in SEA1448-4B is the same as intended to be used in other vessels. The experience gained and achievements made in SEA1448-4B will reduce the risks to the delivery schedule for future projects.	First of Type Equipment
Understanding of certification authority test requirements to ensure sufficient resources, facilities and personnel can be scheduled to minimise the chance of delays.	Schedule Management
Understanding of Operational Security requirements prior to the development of the acceptance program to minimise the chance of delays.	Requirements Management
Improved project assurance and governance oversight requirements, due to the uniqueness of the CEA technology, has necessitated a non-traditional approach to requirements specification and acceptance.	Governance
Establishing Two-Star review boards to ensure the project's priority is maintained, particularly noting there are other Commonwealth and overseas customers vying for priority on CEA resources.	Governance

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	CDRE Darron Kavanagh, RAN

Project Data Summary Sheet¹⁶⁷

Project Number	JNT2008 Phase 5A
Project Name	INDIAN OCEAN REGION UHF SATCOM
First Year Reported in the MPR	2010-11
Capability Type	Upgrade
Capability Manager	Chief of Joint Capabilities
Government 1st Pass	Mar 09
Government 2nd Pass Approval	Mar 09 and Mar 10
Budget at 2 nd Pass Approval	\$461.0m
Total Approved Budget (Current)	\$421.3m
2020-21 Budget	\$7.7m
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 2021, project JNT2008 Phase 5A recorded variance of \$1.3m against an estimated planned FY 2020/21 Budget of \$7.7m. The variance of \$1.3m is attributable to delays in receiving invoices and supplies and establishing planned ICT support contracts for obsolescence risks identified in Section 5 and decrease in payments owed to the NCS Prime Contractor.

Project Financial Assurance Statement

As at 30 June 2021, project JNT2008 Phase 5A has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget including contingency remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in this financial year.

Schedule Performance

Following updates to software and other defect rectification activities by Viasat Inc., the Final Capability Acceptance for the Network Control System (NCS) was achieved in December 2020. Contract Change Proposal 5 (CCP5) between the Commonwealth and Viasat Inc. was executed in January 2021 with remediation of agreed minor defects to complete by December 2021.

The Materiel Acquisition Agreement (MAA) delivery schedule was updated in January 2021, re-baselining the schedule for delivery of the NCS capability milestones Final Materiel Release (FMR) NCS and Final Operating Capability (FOC) NCS. The MAA included the new milestone Materiel Release (MR) NCS. MR (NCS) was declared in March 2021 providing interim operational release of the System to the ADF. The Project expects to achieve the FMR (NCS) and FOC (NCS) milestones within the MAA timeframes. Under changes to the MAA, the existing milestone FOC Pacific Ocean Region, delivered by Chief Information Officer Group (CIOG), was recognised as being achieved in January 2018.

The requirement for United States (US) Government certification of the NCS and Operational Test and Evaluation (OT&E) by the Joint Test and Evaluation agency within Defence are key inputs for FOC (NCS), which is forecast to occur by the end of 2021. OT&E commenced in August 2020 with activities forecast to complete in November 2021.

Materiel Capability Delivery Performance

The IS-22 satellite is currently meeting all performance measures, including:

- the hosted payload; and
- the Communications System Monitor (CSM).

With update of the MAA in January 2021, the Project is meeting performance measures to declare FMR (NCS) in July 2021 and FOC (NCS) in December 2021.

Note

167 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.

1.3 Project Context

Background

The JNT2008 Phase 5 project was created to provide capability originally planned for under the JNT2008 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 JNT2008 Phase 5A. It revealed an opportunity for Defence to host a payload on an Intelsat commercial satellite over the region in mid-2012. A Restricted Request For Tender was subsequently let to ten companies for the capability in November 2008 and Intelsat was selected as the preferred tenderer.

Combined First and Second pass Government Approval was given in March 2009 and a contract was signed with Intelsat for eight 25 kHz channels and 15 years support in April 2009.

First pass Government approval was given for the project to pursue a Memorandum Of Understanding with the US to provide global UHF SATCOM coverage using US satellites in return for access to ten 25 kHz channels on IS-22. A subsequent Second Pass approval was given in March 2010 which allowed the project to procure the full payload on IS-22.

The IS-22 satellite was successfully launched on 25 March 2012. Materiel Release (MR) for the Indian Ocean Region was achieved on 21 December 2012.

In May 2012, a contract was signed with Viasat US to upgrade the existing NCS. In December 2013, a Contract Change Proposal (CCP1) was executed to re-baseline delivery of Final Materiel Release (FMR) for the NCS to September 2014. A second Contract Change Proposal (CCP2) was executed in December 2015 after Viasat experienced delays in software development. The delay resulted in a further slip to FMR (NCS) milestone which was subsequently re-baselined and delivery forecast for April 2018 (49 months behind schedule). Defence in an attempt to minimise the capability impacts of the JNT2008 Phase 5 project delays introduced two new milestones under CCP2; the NCS Manager Software Readiness Review (NSWRR) and Software Deployment Readiness Review (SDRR).

A third Contract Change Proposal (CCP3) was executed in March 2017 to introduce architectural enhancements to the NCS to align with increased Defence security requirements. In August 2017, delayed provision of GFM and persistent challenges in Viasat's development of the NCS triggered the need to execute a fourth Contract Change Proposal (CCP4). Technical discussions regarding capability delivery resulted in the Contractor providing a revising the schedule in April 2018. The revised schedule highlighted that Viasat was 10 months behind on its software development plan.

The parties entered into negotiations in June 2018 to implement strategies to constrain the delay and establish a new baseline for the project. CCP4 was signed in November 2018 with a forecast contract completion date of 29 August 2019. In February 2019, Viasat experienced further software and system integration and security issues and this **led to a schedule variance for contract completion to December 2020. The Contract milestone Final Capability Acceptance was achieved December 2020, with CCP5 raised subsequently for Viasat to remediate agreed defects by December 2021.**

Uniqueness

The contract with Intelsat is based on the Standard Defence Contract (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

There was a risk that the US Government certification of the NCS may delay FOC as the certification is subject to US priorities and demand for the services of the test agency. Assessment of the NCS by the Joint Interoperability and Test Command (JITC) is a US Government requirement for access to US military satellites. Defence has had positive engagements and planning with JITC **and while a schedule between key stakeholders was established, delays were experienced in early 2021 and one aspect of this risk has been realised and is now reported as Issue 3 in Section 5.2. Certification is expected in August 2021 and will retire part of this risk. All residual risks have been captured in Emergent Risk 2 in Section 5.1.**

There was a risk that Viasat will be delayed in delivering the Integrated Logistics Support products necessary to complete the Support System acceptance, **therefore affecting FMR (NCS). In agreement with Viasat, the Project Office undertook action to complete these activities; subsequently the risk was retired.**

There was a risk that COVID-19 work and travel restrictions would affect NCS installation and integration due to a reliance on international and interstate contractor staff. Viasat utilised workforce from within its Australian subsidiary to manage **some of the risk; however, the risk materialised due to the dynamic COVID situation and is now being reported as Issue 1 in Section 5.2.**

An emergent risk identified by the Project Office relates to the suitability of software updates for the NCS. The Capability Manager has agreed the NCS software meets all operational requirements and any future updates on the Mission System to occur after FOC (NCS), if required, for this reason the risk is sufficiently mitigated.

There was an emergent risk that Joint Trial 019 (JT019) may identify major issues for remediation, which would affect the Capability Manager declaring material release and therefore delay FOC. The Project Office is engaging with the Capability Manager to the expedite trial and maintaining a core expertise to be able to respond to and close actions.

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There was an emerging issue through 2020 that Original Equipment Manufacturer (OEM) support for some NCS products would expire; however, the Project Office has been able to re-establish support agreements and the issue has reduced in significance.

There was an emerging issue of Network Control System non-compliance against the relevant MIL-STD leading to delayed US Government certification (referred to as JITC certification) and FOC. The Project Office undertook testing of the Network Control System to identify and communicate non-compliances early to Viasat to ensure timely remediation of non-compliances and the issue is being mitigated sufficiently.

There was an emerging issue of the project continuing to incur schedule variation relating to development of NCS software. Viasat applied additional resources and actively engaged with the Commonwealth to identify strategies to recover schedule including sharing risks in the test and acceptance program with Defence and Viasat senior leadership engagement also assisting to establish priorities that supported achievement of the final contract milestone in December 2020.

Other Related Projects and Phases

JNT2008 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.

JNT2008 Phase 3F ADF SATCOM Terrestrial Enhancements: This project will provide the mature Australian anchoring capability for the WGS constellation.

JNT2008 Phase 4 Next Generation SATCOM Capability: This project provides WGS capability.

Note

Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Feb 09	Original Approved	4.0	
Apr 09	Government Initial Second Pass Approval	269.1	
Apr 10	Government Subsequent Second Pass Approval	187.8	1
	Total at Second Pass Approval	461.0	
Jun 14	Real Variation - Real Cost Decrease	(18.0)	2
Jul 10	Price Indexation	18.0	3
Jun 21	Exchange Variation	(39.7)	
	Total Budget	421.3	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure - Intelsat	(294.4)	
	Contract Expenditure - Viasat	(36.5)	4
	Other Contract Payments / Internal Expenses	(45.7)	5
		(376.6)	
FY to Jun 21	Contract Expenditure - Viasat	(2.8)	
	Other Contract Payments / Internal Expenses	(3.6)	6
		(6.4)	
Jun 21	Total Expenditure	(383.1)	
Jun 21	Remaining Budget	38.2	
Notes			
1	The Initial Second Pass Approval was for eight channels and the Subsequent Second Pass Approval was for the remaining channels of the hosted payload.		
2	Real Cost Decrease was a result of Project Office negotiating insurance for payload launch into the contract. Separate launch insurance is no longer needed.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$16.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further (\$19.6m) having been applied to the remaining life of the project. For this project, that process was incorrectly executed but corrected in January 2012 by returning \$30.9m to the budget; \$21.1m and \$9.9m for impacts of price and exchange variations respectively.		
4	This contract was in Stop Payment from July 2014 to December 2015 and subsequently from December 2017 to November 2018. Stop Payment was triggered from March 2019 for of the Product Baseline Review, completed in July 2019. A Stop Payment for the Stirling Completion was triggered in May 2019 pending the completion of the Stirling and System Acceptance milestones. The Stirling Completion milestone was achieved June 2020 with the System Acceptance milestone remaining outstanding.		
5	Other Contract Payments / Internal Expenses of \$45.7m comprise of Capital and Operating Expenditure (\$20.1m) and expenditure for contracted workforce related contractor support services provided by Nova Defence (\$25.6m) .		
6	Other Contract Payments / Internal Expenses total \$3.6m comprise of other Capital and Operating Expenditure (\$0.9m) and expenditure for contracted workforce related contractor support services provided by Nova Defence (\$2.7m) .		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
9.0	8.1	7.7	PBS to PAES: decrease is attributable to a decrease in payments owed to the NCS Prime Contractor.

			PAES to Final Plan: Reduction in estimates due to delay in executing planned contracts.
Variance \$m	(0.9)	(0.4)	Total Variance (\$m): (1.3)
Variance %	(10.0)	(5.0)	Total Variance (%): (15.0)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(1.0)	Australian Industry	As at 30 June 2021, project JNT2008 Phase 5A recorded variance of \$1.3m against an estimated planned FY 2020/21 Budget of \$7.7m. The variance of \$1.3m is attributable to delays in receiving invoices and supplies and establishing planned ICT support contracts for obsolescence risks identified in Section 5 and decrease in payments owed to the NCS Prime Contractor.
		(0.3)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
7.7	6.4	(1.3)	Total Variance	
		(16.9)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Intelsat	Mar 09	202.5	294.4	Firm	Standard Defence Contract (COMPLEX)	1, 3
Viasat	May 12	36.5	40.1	Firm	Standard Defence Contract (COMPLEX)	2, 3
Notes						
1	The increase in contract price is due to a Contract Change Proposal in 2010 which included 12 additional hosted UHF payload channels and a Communications System Monitor. The contract was transferred to Sustainment in April 2014 for support of the Communications System Monitor.					
2	CCP2, approved in December 2015, was a nil cost CCP related to the redevelopment of the NCS design. CCP3, approved in March 2017 increased the Viasat contract price. CCP4 in November 2018, decreased Viasat's contract price due to modifications to the scope of the contract. The scope modifications were implemented to constrain and mitigate further delays to the delivery of the NCS.					
3	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current exchange rates and includes adjustments for indexation (where applicable).					
Contractor	Contracted Quantities as at		Scope	Notes		
	Signature	30 Jun 21				
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 accepted and quantities to 30 Jun 21						
All 20 channels were delivered successfully on 25 May 2012 and are now operational.						
Upgrades to the NCS were accepted on 8 December 2020 with agreed minor deviations.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Contracted	Achieved /Forecast	Variance (Months)	Notes
System Requirements	IS-22 Hosted Payload	Jun 09	N/A	Jun 09	0	
	NCS	Aug 12	N/A	Aug 12	0	
Preliminary Design	IS-22 Hosted Payload	Nov 09	N/A	Oct 09	(1)	
	CSM	Oct 10	N/A	Nov 10	1	1
Critical Design	IS-22 Hosted Payload	Sep 10	N/A	Sep 10	0	
	CSM	Mar 11	N/A	Mar 11	0	
	NCS	Mar 13	N/A	Mar 13	0	
Product Baseline Review	NCS	May 17	Feb 19	Jul 19	26	2, 3
Notes						

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1	The review was conducted in October 2010 but approval by the Project Office did not occur until November 2010 due to a number of issues with requirements traceability that required rectification.
2	This milestone was re-scheduled under CCP3 signed in March 2017. The previously contracted NCS Software Readiness milestone was removed as part of CCP4.
3	Criteria against the Software Deployment Readiness Review (SDRR) was amended, aligning delivery to a Commercial Of The Shelf (COTS) process. For this reason SDRR was renamed Product Baseline Review. The Product Baseline Review was held in June 2019 with actions forecast to be closed and milestone achieved in July 2019.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved /Forecast	Variance (Months)	Notes
System Integration	IS-22 Hosted Payload	Nov 10	N/A	Feb 11	3	1
	CSM	Sep 11	N/A	Oct 11	1	2
	NCS	Nov 13	Jun 19	Jun 20	79	3,5,6
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	May 12	(1)	
	CSM	Jul 12	N/A	Jun 12	(1)	
	NCS	Mar 14	Aug 19	Dec 20	81	3,4,5,6
Notes						
1	Delay to commencement of integration was driven by a number of delays in sub system deliveries forming part of the hosted payload including C and Ku antennas (not forming part of this capability) and the UHF antenna.					
2	While installation commenced in September 2011, testing to confirm that the installation met requirements was completed in October 2011.					
3	In February 2014, Viasat advised the Commonwealth of software design delays affecting the NCS schedule. In February 2015 Viasat advised the Commonwealth of their decision to take on elements of work previously contracted to their sub-contractor and continue the software development in house. Variance is a result of software design delays captured in CCP2 signed in December 2015.					
4	In March 2017, the Commonwealth signed CCP3 with Viasat for improvements to the network architecture and the inclusion of GFM into the NCS.					
5	Delay to NCS System Integration and Acceptance milestones result from delay in delivery of Government Furnished Materiel and Viasat software development at August 2017.					
6	In February 2019, Viasat experienced software, security and system integration issues that delayed commencement of upgrades to the NCS. Following approval of the Mandated System Review and Product Baseline Review (PBLR), Viasat delivered NCS upgrades in December 2019 and completed remedial works in April 2020. System Acceptance was achieved December 2020 with agreed defects to be rectified by Viasat by December 2021, refer to CCP5.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul 12	Jul 12	0	
Initial Operational Capability (IOC)	Jul 12	Jul 12	0	
Materiel Release (MR) # 1 (Indian Ocean)	Sep 12	Dec 12	3	1
Operational Capability (Indian Ocean)	Sep 12	N/A	0	5
Materiel Release Network Control System	Dec 19	Mar 21	15	7
Final Materiel Release (FMR) # 2 (Network Control System)	Mar 14	Jul 21	88	2
Final Operational Capability (FOC) (Pacific Ocean)	Jun 18	Jan 18	0	3
Final Operational Capability (FOC) Network Control System (NCS)	Jul 18	Dec 21	42	3, 4, 6
Notes				
1	MR was claimed on 28 September 2012. Chief Information Officer Group (CIOG) requested additional information which was supplied and MR was achieved on 21 December 2012.			
2	Software delays noted in Section 3.2 Note 3 and Note 6 impacted FMR .			
3	MAA, version 2.4, separated the delivery of UHF Military Satellite Communication services in the Pacific Ocean Region (POR) and NCS. This has resulted in the approved milestones FOC POR and FOC (NCS). The FOC POR milestone was achieved in January 2018.			
4	FOC (NCS) is scheduled to be delayed due to FMR #2 being re-forecast for achievement by March 2020. The requirement for US Government certification of the NCS, additional security integration and implementation issues and subsequent accreditation are the key contributors to the delay.			
5	FMR IOR was claimed on 28 September 2012. The ADF has been utilising the capability defined under the Operational Capability Indian Ocean (OC IOR) milestone since this time. The absence of an appropriate Technical Regulatory Framework (TRF) has limited the project to fully meet the MAA requirements. FMR IOR is not expected to be declared. This is not expected to have an impact on the achievement of FOC as the project has amalgamated outstanding Operational Capabilities.			

6	The original FOC date of June 2018 did not contemplate the requirement that the Radio Frequency (RF) sub-system of the NCS requires US Government certification to be able to operate autonomously on the US military satellite in the POR. The test effort associated with the US Government certification is subject to priorities that are outside of Defence control. Defence has had positive engagements and planning with the relevant US Government agency and will continue to manage the certification requirements with the US Government. In the interim, the NCS will operate on approved waivers while the system goes through the US Government certification process. FOC is forecast for delivery by December 2021.
7	The MR NCS milestone was approved under the MAA version 2.4 January 2021.
<p align="center">Schedule Status at 30 June 2021</p> <p>Note Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>	

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	<p>Green: The project is currently meeting overall performance requirements which are determined by the hosted payload.</p> <p>Amber: N/A</p> <p>Red: N/A</p>
<p>Note This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.</p>	

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IS-22)	1. In Orbit Test of hosted payload. 2. IMR was achieved in July 2012.	Achieved.
Initial Operational Capability (IS-22)	1. UHF SATCOM services on the IS-22 hosted payload. Quantity of ten 25kHz channels.	Achieved.
Final Materiel Release (IS-22)	1. 20 channels on a UHF Hosted Payload, including Operational Support Services for life-of-type in place, telemetry feed operational and initial training for telemetry feed. CSM and initial training for CSM. FMR IS-22 was achieved in December 2012.	Achieved.
Final Operational Capability (Pacific Ocean Region)	1. Capability State FOC POR is the commencement of Australian assured access to 200 kHz in the POR and 50 kHz for the Rest of the World coordinated through the US Government. 2. FOC POR was achieved 1 January 2018	Achieved

Materiel Release (NCS)	1. NCS comprising three channel control sites, and NCS Manager (IW) training package. 2. MR-NCS was achieved in March 2021.	Achieved
Final Materiel Release (NCS)	1. Full ICT accreditation (ICTA). 2. JITC Assessments with waivers in places as required. 3. Upgraded SATCOM Planning Tool. 4. Forecast delivery for FMR NCS is July 2021.	Not yet achieved.
Final Operational Capability (NCS)	1. Acceptance of the Joint Trial 19 Report by the Joint Capabilities Group (JCG) 2. Operational Release of the NCS by JCG. Forecast delivery is December 2021.	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that the US Government certification of the NCS system may delay FOC as the certification is subject to US Government priorities and demand for the services of the test agency. Restrictions on workplace attendance due to COVID-19 may affect the US Government schedule. Assessment of the NCS by the Joint Interoperability and Test Command is a US Government requirement for access to US military satellites.	While a schedule between key stakeholders was established, delays were experienced in early 2021 and one aspect of this risk has been realised and is now reported as Issue 3 in Section 5.2. Certification is expected in July 2021 and will retire part of this risk. All residual risks have been captured in Emergent Risk 2.
There is a risk that COVID-19 work and travel restrictions will affect the NCS installation and integration strategy due to project reliance on international and interstate contractor staff.	Viasat has utilised the workforce from within its Australian subsidiary to manage the risk. The risk was realised through the reporting period and is now reported as an issue.
There is a risk that there may be delay in Viasat delivering products necessary to complete the Support System. The risk is a consequence of Viasat's workforce limitations and commercial focus to complete Mission System installations.	The Project Office has managed the risk by undertaking some of the supporting works required to develop artefacts to support training. Subsequently this risk has been retired.
Emergent Risks (risk not previously identified but has emerged during 2020-21)	
The NCS and support system equipment has been affected by obsolescence leading to an impact on capability, supportability and ICT security accreditation.	The risk remains open as remediation of all obsolescence is not possible. The Project Office has established an obsolescence register and Patch Management Plan to prioritise hardware and software issues to ensure economical mitigation of issues.
There is a risk that the updated version of the Network Control System software (VISION ver. 3) will contain critical defects (bugs) that will affect its suitability for install onto the Mission System.	The Project Office has active and ongoing engagement with Viasat, seeking updates and metrics relating software development progress and performance. The Project Office is monitoring the risk; however, the Capability Manager has agreed to the install of the software update after the achievement of the FOC (NCS) milestone; subsequently the risk does not affect remaining project milestones.
There is a risk that Joint Trial 019 (JT019) may identify major issues for CASG to remediate which affects the JCG decision to declare material release and subsequently delays FOC.	The Project Office is maintaining a core level of expertise to be able to respond to and close actions and is actively engaging with the Capability Manager representative seeking support to expedite trial timeframes.

5.2 Major Project Issues

Description	Remedial Action
COVID-19 work and travel restrictions affected NCS installation and integration strategy due to project reliance on international and interstate contractor staff.	Viasat has utilised the workforce from within its Australian subsidiary to manage the risk. The risk was realised through the reporting period and is now reported as an issue. The issue is forecast to be closed on achievement of FMR.
An emerging issue arose through 2020 regarding the OEM support from some NCS products expiring. The issue was caused by support for an initial three year term being procured with products obtained in 2017 that supported the Commonwealth's Contract Change Three obligations. The issue was also influenced by changes in plans for ongoing support of the subject components.	The Project Office expedited support extensions in order to mitigate the issue and the Commonwealth is undertaking a procurement to implement a long-term support contract to mitigate the issue.

There is an emerging issue that the Network Control System will be affected by non-compliances against the relevant MIL-STD leading to delayed US Government certification (referred to as JITC certification) and delays to FOC.	The Project Office has been able to undertake testing of the Network Control System to identify and communicate non-compliances early to Viasat to ensure remediation of non-compliances to mitigate the issue. Support arrangements were established to ensure timely JITC assessment as Viasat delivers elements of the Network Control System.
The project has and continues to incur schedule variation related to the development of NCS software.	Viasat has applied more resources and actively engaged with the Commonwealth to identify ways to recover schedule, i.e. sharing risks in the test and acceptance program, to resolve the issue . Senior Leadership engagement between Chief Joint Capabilities, Deputy Secretary CASG and Viasat President also assisted to establish priorities that enabled Viasat to achieve the final contract milestone in December 2020 . Subsequently, the issue has been retired with a new risk raised to monitor Viasat's planned update to software, which is planned to be complete by December 2021, to ensure Viasat are delivering against the final capability schedule forecasts .
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
The genuine ability of the vendor to achieve the contracted requirements must be assessed and validated prior to Contract and the engineering capability of the company, based on proven past performance, and a high level of engineering discipline and accreditation demanded.	Procurement Planning. Matters relating to Commercial Strategy, requirement definition, schedule management, resourcing, risk assessment and management.
When negotiating an MOU, be a smart buyer. The SATCOM Capability Manager should thoroughly understand the terms of future MOUs including costs, responsibilities, capability limitations, and administrative overheads.	Leadership. The ability to set and articulate the strategic direction, shape and influence the organisation to realise expected benefits.
Partnering imposes limitations but also increases ADF SATCOM capability. Collaborating with the US has provided Australia with an exceptional capability that would have otherwise been unachievable. The benefits available through international collaboration should be considered.	Capability Outcomes. Ability to meet Capability Manager's requirements as agreed in order to achieve operational capability.
Additional SATCOM capacity can be traded. The ADF traded excess UHF capacity on IS-22 for capacity on US satellites and the trade advantages of acquiring sovereign capacity additional to ADF needs, against the cost of acquisition and ownership is to be considered.	Risk, Issues and Opportunities. Matters relating to the management of risk, issues and opportunities, supporting frameworks, tools and both internal and external dependencies/integration.
External factors including US Joint Interoperability Test Command (JITC) can significantly impact schedule and it is prudent to include a significant allowance within the schedule to better absorb unforeseen delays.	Schedule. Factors related to schedule including, but not limited to: planning, estimation, management, monitoring, controls, earned value, and internal and external dependencies/integration

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	Mr Gavin Rawlins
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Project Data Summary Sheets

Auditor-General Report No.13 2021–22
2020–21 Major Projects Report

Part 4. JCPAA 2020–21 Major Projects Report Guidelines



Australian Government
Department of Defence



2020 –21 Major Projects Report Guidelines

Endorsed by the Joint Committee of Public Accounts and Audit

17 November 2020

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Purpose

1.1 The objective of the Major Projects Report (MPR) is ‘to improve the accountability and transparency of Defence acquisitions for the benefit of Parliament and other stakeholders.’¹⁶⁸ In February 2012, the JCPAA identified this review as a ‘Priority Assurance Review’, under section 19A(5) of the *Auditor-General Act 1997*, allowing the ANAO full access to the information gathering powers under the *Auditor-General Act 1997*.

1.2 The purpose of the Guidelines is to set the criteria for Defence’s preparation of the Project Data Summary Sheets. The Guidelines are updated by the ANAO, in consultation with Defence before endorsement by the JCPAA. The details of the audit engagement are communicated to Defence through the ANAO’s annual terms of engagement.

Introduction

1.3 The MPR is tabled in Parliament and is organised into a number of parts:

- Part 2 comprises Defence’s commentary, analysis and appendices (not included within the scope of the *Independent Assurance Report* by the Auditor-General);
- 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; and
- Part 4 reproduces the *Major Projects Report Guidelines* endorsed by the JCPAA, which provide the criteria for the compilation of the PDSSs by Defence.

1.4 The Committee notes that the Auditor-General may also choose to include ANAO review and analysis in the report. This has, in the past, been included in Part 1 of the MPR.

1.5 The MPR will report on the performance of selected major Defence equipment acquisition projects (Major Projects) since Second Pass Approval¹⁶⁹, and associated sustainment activities (where applicable), managed by Defence.¹⁷⁰ The summary project data is prepared by Defence and reviewed by the ANAO.

1.6 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.

1.7 The 2020–21 MPR will report on 21 projects as endorsed by the JCPAA. The number of projects included in the MPR since its inception is shown in the following table.

Table 1: Number of projects included in the MPR

MPR	Number of projects	MPR	Number of projects
2007–08	9	2014–15	25
2008–09	15	2015–16	26
2009–10	22	2016–17	27
2010–11	28	2017–18	26

¹⁶⁸ Joint Committee of Public Accounts and Audit, Parliament of the Commonwealth of Australia, Report 473: Defence Major Projects Report (2016–17), (2018), Executive Summary, p. 1.

¹⁶⁹ Projects which are pre-Second Pass Approval but have spent more than \$500m will also be considered.

¹⁷⁰ 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.

2011–12	29	2018–19	26
2012–13	29	2019–20	25 ¹⁷¹
2013–14	30	2020–21	21

1.8 Project data is presented by way of Project Data Summary Sheets (PDSSs), as at 30 June each year. The ANAO's review is designed to enable the ANAO to obtain sufficient appropriate evidence to form a conclusion. This conclusion being whether anything has come to the ANAO's attention which indicates that the information in the PDSSs, which is within the scope of the review, has not been prepared, in all material respects, in accordance with the Guidelines.

1.9 These Guidelines:

- (a) provide the criteria for project selection and the list of projects for inclusion in the 2020–21 MPR;
- (b) outline the roles and responsibilities of Defence in the production and quality assurance of Defence's contribution to the 2020–21 MPR¹⁷²;
- (c) provide requirements for the preparation of the PDSSs;
- (d) provide the PDSS template¹⁷³; and
- (e) provide an indicative program schedule in support of a November 2021 tabling.

1.10 Each year the MPR Guidelines are reviewed and amended to reflect lessons learned and the outcomes of JCPAA review, in order to improve the MPR processes and to ensure the report meets its objective. At the JCPAA's request, the ANAO has taken administrative responsibility for updating the Guidelines annually and submitting them to the Committee for endorsement, following consultation with Defence.

¹⁷¹ The 2019–20 MPR Guidelines, endorsed in September 2019, stated that 30 projects would be included. Five projects exited after the 2019–20 MPR Guidelines were endorsed.

¹⁷² The ANAO's roles and responsibilities are defined by the *Auditor-General Act 1997* (Cth) and relevant legislation, and are outlined for each engagement with the responsible parties.

¹⁷³ The PDSS template for SEA1000 will require adjustment in consultation with the ANAO as this project has not reached Second Pass approval.

Criteria for Project Selection

1.12 The inclusion of projects in the MPR is generally based on the projects included in the Defence Integrated Investment Program and subject to the following criteria:

- (a) Projects only admitted one year after Second Pass Approval, or projects pre Second Pass Approval that have spent > \$500m¹⁷⁴;
- (b) a total approved project budget of > \$300m;
- (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.

1.13 All projects selected for inclusion in the MPR will be proposed by Defence, based on the above criteria. The ANAO provides advice to the JCPAA on Defence's proposal by 31 August, for endorsement.

1.14 The removal of projects from the MPR is generally based on declaration of Final Operational Capability (FOC), or on a pre-FOC risk assessment¹⁷⁵ of the timely declaration of FOC where a significant portion of the project's deliverables are complete, and subject to the following criteria:

- (a) the outstanding deliverables pre-FOC, against the relevant Materiel Acquisition Agreement (MAA)¹⁷⁶ and/or the government approvals;
- (b) the remaining schedule to FOC¹⁷⁷, against the relevant MAA and/or government approvals;
- (c) the remaining budget to FOC, against the relevant MAA and/or government approval;
- (d) the remaining project risks and issues;
- (e) Project of Interest or Project of Concern status¹⁷⁸; and
- (f) the Capability Manager's assessment, including overall risk rating and the extent to which this risk rating relates to the Capability Acquisition and Sustainment Group's (CASG's) responsibilities.¹⁷⁹

¹⁷⁴ The Capability Life Cycle (CLC) has been redesigned following the First Principles Review, to deliver a risk-based decision-making and capability management process. Not all projects in the 2020–21 MPR will have been approved under the updated process, but will have had at least one Second Pass approval or key Government decision.

¹⁷⁵ The pre-FOC risk assessment could be informed by Defence's Independent Assurance Review process.

¹⁷⁶ MAAs are intended to be phased out and gradually replaced by Product Delivery Agreements (PDAs). Projects in the 2020–21 MPR will have an approved MAA. A PDA is an agreement between the Program 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, *Capability Life Cycle Manual*, June 2020, Annex A, Capability Life Cycle Definitions, p. A-7.

¹⁷⁷ In general, if a project is within 12 months of declaring FOC, it should be considered for exit subject to the Capability Manager's risk assessment.

¹⁷⁸ Acquisition projects with issues and risks raised against schedule, cost, and/or capability performance that warrant heightened internal senior management attention become Projects of Interest. Entry to and exit from the Projects/Products of Concern list is decided by the Minister for Defence and the Minister for Defence Industry, either at the recommendation of the Deputy Secretary CASG and the relevant Capability Manager, or at the Ministers' own instigation. Department of Defence, *Capability Acquisition and Sustainment Quarterly Performance Report*, May 2020.

¹⁷⁹ The Capability Acquisition and Sustainment Group (CASG) purchases and maintains military equipment and supplies in the quantities and to the service levels that are required by Defence and approved by Government. Available from <<http://www.defence.gov.au/casg/About.asp>> [accessed 7 August 2020].

1.15 All projects selected for removal from the MPR will be proposed by Defence, based on the above criteria. The ANAO provides advice to the JCPAA on Defence's proposal by 31 August, for endorsement.

1.16 Once projects have met the exit criteria and removal has been endorsed by the JCPAA, they should be removed from the PDSSs, and expenditure and milestone information included within the Defence chapters in the MPR in the subsequent year.

1.17 Projects which have been removed from the MPR which still have outstanding exceptions to the achievement of significant milestones declared by Defence (IMR, IOC, FMR and FOC) and/or significant remaining materiel capability to be delivered, are required to report on the status of these activities in the Statement by the Secretary of Defence until their final status is accepted by the Capability Manager.

2020–21 Project Selection

1.18 The following table reflects projects included in the 2020–21 MPR program.¹⁸⁰ 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 2020–21 MPR

Project Number	Project Name	Defence Abbreviation
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter
SEA 5000 Phase 1	Future Frigates	Future Frigates
SEA 1000 Phase 1B	Future Submarines Design Acquisition	Future Subs
LAND 400 Phase 2	Combat Reconnaissance Vehicles	Combat Recon. Vehicles
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters
SEA 1180 Phase 1	Offshore Patrol Vessel	Offshore Patrol Vessel
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy
LAND 121 Phase 4	Protected Mobility Vehicle – Light (PMV-L)	Hawkei
LAND 19 Phase 7B	Short Range Ground Based Air Defence	SRGB Air Defence ¹
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter
AIR 2025 Phase 6	Jindalee Operational Radar Network	JORN Upgrade ¹
SEA 1654 Phase 3	Maritime Operational Support Capability	Repl Replenishment Ships
AIR 7000 Phase 1B	MQ-4C Triton Remotely Piloted Aircraft System	MQ-4C Triton
AIR 5431 Phase 3	Civil Military Air Management System	CMATS
LAND 200 Tranche 2	Battlefield Command System	Battlefield Command System
JP 2072 Phase 2B	Battlespace Communications System Phase 2B	Battle Comm. Sys. (Land) 2B
SEA 1439 Phase 5B2	Collins Class Communications and Electronic Warfare Improvement Program	Collins Comms and EW
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	Pacific Patrol Boat Repl
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms
SEA 1448 Phase 4B	ANZAC Air Search Radar Replacement	ANZAC Air Search Radar Repl

¹⁸⁰ The SEA 4000 Phase 3 Air Warfare Destroyer Build, AIR 7000 Phase 2B Maritime Patrol and Response Aircraft System, AIR 5349 Phase 3 EA-18G Growler Airborne Electronic Attack Capability, AIR 9000 Phase 8 Future Naval Aviation Combat System Helicopter, LAND 53 Phase 1BR Night Fighting Equipment Replacement, and SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability projects were removed from the MPR program based on the low risk nature of the remaining activities to FOC.

JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM
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Note 1: LAND 19 Phase 7B Short Range Ground Based Air Defence and AIR 2025 Phase 6 Jindalee Operational Radar Network are included in the MPR Program for the first time in 2020–21.

Defence's Roles and Responsibilities

1.19 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 materially accurate and complete. The Secretary is also responsible for formally presenting the Defence chapters, *Statement by the Secretary of Defence* and the Project Data Summary Sheets in the MPR to the ANAO on completion of the PDSSs and associated commentary.

1.20 Defence is responsible for ensuring information of a classified nature is made available to the ANAO for review, as it relates to the data contained within the PDSSs. Data of a classified nature is to be prepared in such a way as to allow for unclassified publication. Defence will confirm to the ANAO the classification of information proposed to be published in the MPR. Defence will provide advice with regards to the aggregated security classification of information contained within the PDSS suite, and suitability for unclassified publication.

1.21 Defence's positions, roles and responsibilities are outlined in the table below.

Table 3: Defence's Positions, Roles and Responsibilities

Position	Role	Responsibility
Secretary of Defence	Defence accountability	<ul style="list-style-type: none"> Primary accountability for the completeness and accuracy of the Defence MPR. Sign off on the <i>Statement by the Secretary of Defence</i>, including Significant Events Occurring Post 30 June 2020.
Vice Chief of the Defence Force	Joint Force Authority	<ul style="list-style-type: none"> Provision of advice with regards to the aggregated security classification of information contained within the PDSS suite, and suitability for unclassified publication.
Defence Deputy Secretary Capability Acquisition and Sustainment Group (CASG)	Business Process Owner	<ul style="list-style-type: none"> Obtain cascading sign offs from Branch and Division Heads, on the data and content in the unclassified PDSS suite. Clearance of the PDSSs and Defence analysis, or delegation as appropriate.
Chief Finance Officer Defence	Financial advice and assurance	<ul style="list-style-type: none"> Responsibility for financial advice and information in the PDSS suite and Defence MPR. Coordination and provision of corporate budget information. Quality assurance of all financial data.
First Assistant Secretary Audit and Fraud Control	Overall Relationship Management	<ul style="list-style-type: none"> Provision of assistance/support when called upon by ANAO or CASG. This may include the provision of advice to, and facilitation of clearance by, the Secretary of Defence. Provision of advice on matters of an audit/assurance nature.
Director Program Approvals and Agreements	MPR management, coordination, liaison and accountability	<ul style="list-style-type: none"> Liaison with ANAO senior management. Advice to Deputy Secretary CASG and Secretary. Clearance of the unclassified PDSS suite and Defence MPR. Guidance and direction to project offices. Manage the MPR Program and schedule with the ANAO MPR team. Development, configuration management and quality assurance of the Defence MPR, PDSS suite and evidence packs to ensure completeness and accuracy.

Project Directors/Managers	PDSS development and generation of evidence packs	<ul style="list-style-type: none"> • Develop the project's PDSS and associated evidence packs, including the mapping of evidence to disclosures within the PDSS, in compliance with the Guidelines. • Actively engage the ANAO MPR team in its review of the project's PDSS.
Capability Managers	PDSS confirmation	<ul style="list-style-type: none"> • Responsibility for confirming the project's status, particularly progress toward the Initial Materiel Release (IMR), Initial Operational Capability (IOC), FMR and FOC milestones. • Confirmation that the information contained within the PDSSs is unclassified. <p>Note: This confirmation is at the request of the ANAO, to obtain a confirmation of the information in the PDSSs.</p>

MPR Process

1.22 The JCPAA identified the MPR as a Priority Assurance Review in its Report 429, Review of the 2010–11 Defence Materiel Organisation Major Projects Report. Consequently, Section 31 of the Auditor-General Act 1997 provides the ANAO with full and free access powers in the conduct of the review. This will be facilitated by the Director Program Approvals and Agreements.

1.23 An indicative schedule for the MPR program has been established (refer to page 349). 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.

1.24 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 by the project for efficient review. Project teams are to ensure that each statement within the PDSS has an identified evidence source.

1.25 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 consider 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.

1.26 The ANAO may also directly engage with contractors to seek any clarification on their comments on the project data, and will keep Defence apprised on feedback and outcomes.

Other Items to Note

1.27 As the PDSS is part of a public document, the following style conventions must be followed:

- 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 344).
- For repeat projects, changes from prior years are to be depicted in bold orange text.
- Where possible, acronyms and jargon are not to be used. When acronyms are used, the first use must be spelt out in full.

- (d) Project names should be written in full or with the approved Defence abbreviation, and should be presented with an initial capital, e.g. Joint Strike Fighter.
- (e) All costs should be shown as \$m (millions) and be rounded to one decimal place (i.e. to the nearest \$100,000), with negative amounts in brackets.
- (f) Dates in the PDSS narratives should be presented as Month 20yy, and dates in the PDSS tables should be presented as mmm yy (e.g. Jul 09). Time variations should be shown as full months.
- (g) Any cells in a table not containing data should be shown as 'N/A'.
- (h) Alignment of data within tables is to be positioned as per the template in this document (refer to page 344).

Requirements for the Preparation of the Project Data Summary Sheets (PDSS)

Heading	Data	Definition/Description
Project Header	Project Number	The number of the project as approved by government. This should be depicted in bold text.
	Project Name	The name of the project as approved by government. This should be depicted in bold upper case text.
	First Year Reported in the MPR	The year the project was first reported in the MPR. Use 20xx–xx date format.
	Capability Type	Choose from the following: <ul style="list-style-type: none"> • New; • Replacement; and/or • Upgrade. If the above types are not applicable, alternative descriptors should be included.
	Capability Manager	Either one or a combination of: <ul style="list-style-type: none"> • Chief of Navy; • Chief of Army; • Chief of Air Force; • Chief of Joint Capability; • Vice Chief of the Defence Force; • Deputy Secretary Strategic Policy and Intelligence; and • Chief of Defence Intelligence.
	Government 1st Pass Approval	The date Government First Pass Approval was given.
	Government 2nd Pass Approval/ key Government pre Second Pass Approval (<i>specify one</i>)	The date Government Second Pass Approval was given (list dates for multiple Government Second Pass Approvals). Where a project has entered the MPR but has not yet achieved Second Pass Approval, a pre-Second Pass Approval date based on a key Government decision should be disclosed.
	Budget at 2nd Pass Approval	Disclose the approved project budget as at the most recent Government Second Pass Approval, excluding price indexation and exchange variation. This amount should equal the sub total of the project budget in Section 2.1 as at the most recent Second Pass Approval. Where a project has entered the MPR but has not yet achieved Second Pass Approval, a pre-Second Pass Approval budget based on a key Government decision should be disclosed.
	Total Approved Budget (Current)	The current approved project budget. This amount should equal the Total Budget in Section 2.1 Project Budget (out-turned) and Expenditure History.
	2020–21 Budget	The estimated project expenditure for 2020–21 as per the Portfolio Budget Statements (PBS) and/or the Portfolio Additional Estimates Statements

Heading	Data	Definition/Description
		(PAES), or other official budget tool when not available in the PBS or PAES. ¹⁸¹ This amount should be equal to the Estimate Final Plan in Section 2.2A and Section 2.2B.
	Complexity	The Acquisition Categorisation (ACAT) level of the project.
	Project Image	Image of the project to be provided to the ANAO by the Defence MPR team in a separate file as a high resolution JPG.
SECTION 1 – PROJECT SUMMARY		
Section 1.1 Project Description	Description	A short description of the project, which summarises capability delivery and, where appropriate, equipment quantities. This information should be consistent with other sections of the PDSS.
Section 1.2 Current Status	Cost Performance	<p><u>In-year</u></p> <p>At a strategic level, state the project's current progress against its in-year budget (specifying underspend or overspend), and provide a succinct explanation of causes for variations.</p> <p>This statement should agree to the In-year Budget/ Expenditure Variance explanation in Section 2.2B.</p> <p><u>Project Financial Assurance Statement</u></p> <p>An additional 'project financial assurance statement' on the projects' budget performance should be disclosed, noting whether the budget remaining, together with the estimated future expenditure and current known risks, is sufficient for completing the project. Where it is determined that the budget is sufficient, the statement should be based on the following standard text:</p> <p>As at 30 June 2021, project [insert project number] has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope. This statement should be modified accordingly when the budget is insufficient and/or to describe the project's unique circumstances (such as requiring the use of contingency, or to note cost risks disclosed in Section 5 – Major Risks and Issues of the PDSS). Where modified, the project should include a description of the actions the project is undertaking to address the insufficiency of the budget.</p>

¹⁸¹ 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
		<p><u>Contingency Statement</u></p> <p>State whether the project has/has not applied contingency funds this financial year. Note that disclosure of contingency amounts is not required. Standard text:</p> <p>[positive case]: The project has applied contingency in the financial year primarily for the treatment of [a risk category¹⁸²] risk [and where possible include linkage to Section 5 – Major Risks and Issues and specified remediation activities]; or</p> <p>[negative case]: The project has not applied contingency in the financial year.</p> <p>This section must be consistent with the data in Section 2 – Financial Performance.</p>
	Schedule Performance	<p>At a strategic level, briefly describe key schedule milestones achieved so far and issues facing the project in achieving future milestones. Milestone achievements or non-achievements in the current year should also be explained and include the variance in months.</p> <p>This section must be consistent with what is stated in Section 3 – Schedule Performance.</p>
	Materiel Capability Delivery Performance	<p>At a strategic level, provide a brief update on the materiel capability delivered to date, and expected future delivery.</p> <p>Detailed technical performance of systems is to be avoided and classified information is not to be disclosed.</p> <p>This section must be consistent with what is stated in Section 4 – Materiel Capability Delivery Performance.</p>
Section 1.3 Project Context	Background	<p>A succinct summary level statement that covers Government approvals history and any strategic changes that have occurred since approval. 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.¹⁸³</p> <p>For projects approved under the Capability Life Cycle model a short description of Defence's "Smart Buyer" outcomes considered at Government approval should also be included. If a "Smart Buyer" risk assessment considered at Second Pass was not conducted, a brief description of the reasons why not should be included.</p> <p>Decisions resulting in transfers of scope into or out of the project should also be described in this section. This information should be consistent with any transfers of budget presented in Section 2,</p>

¹⁸² Refer to the Department of Defence, Defence Materiel Manual Project, DMM (PROJ) 11-0-002, *Project Risk Management Manual (PRMM)* 2013, July 2013, Annex G, for guidance. A replacement manual is in development.

¹⁸³ JCPAA, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, p. 25.

Heading	Data	Definition/Description
		<p>capability presented in Section 4 and risks and issues presented in Section 5.</p> <p>For projects that have been announced as a Project of Concern by the Minister for Defence disclose:</p> <ul style="list-style-type: none"> • The date the project was announced as a PoC; • The reason for the project being placed on the POC list; • The remediation activities being undertaken; and • The date of removal from the list (if applicable). <p>Note: Stop payments or liquidated damages should be referred to here or elsewhere in Section 1 (disclosure of amounts is not required).</p>
	Uniqueness	A brief explanation of the particular aspects that make the project unique.
	Major Risks and Issues	A succinct summary of the major risks and issues disclosed in Section 5 – Major Risks and Issues. In addition, where the project has achieved a milestone with caveats, a brief description of the caveats should be added. This should be consistent with the description in Section 5.2.
	Other Current Related Projects/Phases	List the current approved projects (i.e. Second Pass has been achieved) relating to the same platform and/or with the same main project number (e.g. SEA xxxx), including the phase of the project, and provide a brief description of the capability (i.e. one or two short sentences).
SECTION 2 – FINANCIAL PERFORMANCE		
Section 2.1 Project Budget (outturned) and Expenditure History	Project Budget	
	Original Approved	Each PDSS should clearly identify the first approved budget by Government. This could be through an Original, Interim, First or Second pass approval. In brackets, disclose the Approval source (e.g. Government First or Second Pass Approval).
	Real Variation	<p>The variations to be included are shown below where they are applicable to the project with an explanation for each variation included within the Notes:</p> <p>“Subsequent Government Approvals” Where additional funds have been approved by Government, projects are to disclose the addition of funds for that specific Government Approval in the description column and not as a real scope variation. If the approval is a Government First or Second Pass Approval, ensure it is in bold text. The date of the variation is to be the date the funds were received in the FMIS, and not the date of the Government decision, if different.</p> <p>“Scope” changes are attributable to changes in requirements by Defence and government. These generally take the form of changes in quantities of equipment, a change in requirements that result in specification changes in contracts, changes in logistics support requirements or changes to services to be provided which are accompanied by a corresponding budget adjustment.</p>

Heading	Data	Definition/Description
		<p>“Transfers” occur when a portion of the budget and corresponding scope is transferred to or from another approved project or sustainment product in CASG or to another Group in Defence in order to more efficiently manage delivery of an element of project scope and to vest accountability for performance accordingly.</p> <p>“Budgetary Adjustment” is made to account for corrections resulting from foreign exchange or indexation accounting estimation errors that might occur from time to time. Also included under this heading are administrative decisions that result in variations such as efficiency dividends imposed on project budgets or adjustments made to fund Defence initiatives.</p> <p>“Real Cost Increases” These funds have been approved by government to increase the Project’s budget (generally without a change in scope).</p> <p>“Real Cost Decreases” These funds have been handed back to the Defence Portfolio.</p> <p>The elements above are to be subtotalled to give a single amount for all real variations (including Government Second Pass Approvals).</p>
	Total at Second Pass Approval/key Government pre-Second Pass Approval (<i>specify one</i>)	A subtotal should be in the \$m column which sums each individual Government approval and real variation, until the most recent Second Pass Approval (or key Government pre-Second Pass Approval). This figure should match the Budget at 2nd Pass Approval (or key Government pre-Second Pass Approval) in the Header section.
	Price Indexation	Variations to the Original Approved project cost due to price indexation and out-turning adjustments, to take account of variations in labour and materiel indices over time. This is disclosed where applicable, i.e. not for projects approved post-July 2010 in out-turned prices.
	Exchange Variation	Variations to the Original Approved project cost due to foreign exchange adjustments brought about by changes in foreign exchange rates for payments in foreign currency.
	Total Budget	<p>The sum of the above.</p> <p>This should reconcile with the FMIS as at 30 June. The Total Approved Budget in the Project Header should equal this figure.</p>
	Notes	For additional information as required, e.g. explanation for the reason for each Real Variation.

Heading	Data	Definition/Description
	Project Expenditure	
	Prior to Jul 20	<p>This item comprises all amounts incurred in all <u>periods prior</u> to the current reporting period (i.e. expenditure up to 30 June 2020). All expenditure is to be presented in brackets to indicate a negative figure.</p> <p>Reporting of expenditure is to be split into the following:</p> <p>“Contract Expenditure” against each of the top 5 contracts as listed in Section 2.3 Details of Project Major Contracts, restricted to contracts valued at greater than or equal to \$10m. For large projects, it may be appropriate to include greater than the top 5 contracts. Contract expenditure should be listed from highest to lowest value. Contracts with nil value should not be disclosed.</p> <p>“Other Contract Payments / Internal Expenses” which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.</p> <p>It is generally expected that ‘other’ expenditure will not exceed 10% of total prior period expenditure. However, in the event that ‘other’ expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure including amounts to bring the amount of unexplained ‘other’ below 10%.</p> <p>The two expenditure elements above are to be subtotalled to give a single amount for all prior period expenditure.</p>
	FY to Jun 21	<p>This item comprises all amounts incurred in the <u>current reporting period</u> (i.e. contract level expenditure from 1 July 2020 to 30 June 2021). All expenditure is to be presented in brackets to indicate a negative figure.</p> <p>Reporting of expenditure is to be split into the following:</p> <p>“Contract Expenditure” against each of the top 5 contracts as listed in Section 2.3 Details of Project Major Contracts, restricted to contracts valued at greater than or equal to \$10m. For large projects it may be appropriate to include greater than the top 5 contracts. Contract expenditure should be listed from highest to lowest value. Contracts with nil value should not be disclosed.</p> <p>“Other Contract Payments / Internal Expenses” which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.</p> <p>It is generally expected that ‘other’ expenditure will not exceed 10% of total expenditure in the current reporting period. However, in the event that ‘other’ expenditure exceeds this threshold, additional</p>

Heading	Data	Definition/Description
		<p>explanation will be required within the Notes section outlining the key aspects of the expenditure including amounts to bring the amount of unexplained 'other' below 10%.</p> <p>The two expenditure elements above are to be subtotalled to give a single amount for Financial Year (FY) expenditure.</p> <p>In addition, any stop payments or liquidated damages should be referred to in the Notes (disclosure of amounts is not required).</p>
	Total Expenditure	This item discloses total project expenditure as at the reporting date (i.e. 30 June 2021) 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.
	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 2020–21, as published in the PBS.
	Estimate PAES \$m	<p>The mid-year revised budget estimate for 2020–21, as published in the PAES.</p> <p>The variance, as an amount and percentage, should be calculated between the Estimate PAES and Estimate PBS.</p>
	Estimate Final Plan \$m	<p>The final revised budget estimate for 2020–21.</p> <p>The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PAES.</p> <p>This amount should be equal to the 2020–21 Budget figure in the Project Header and the Estimate Final Plan in Section 2.2B In-year Budget/Expenditure Variance.</p>
	Total Variance	<p>Budget estimate variances, and corresponding variance percentages, are to be disaggregated and disclosed separately.</p> <p>The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PBS.</p>
	Explanation of Material Movements	The explanations for the material variance/s noted above, as published in appropriate supporting documentation, e.g. the PAES.

Heading	Data	Definition/Description
Section 2.2B In-year Budget/ Expenditure Variance	Estimate Final Plan \$m	The estimated project expenditure for 2020–21. 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 MRM Majors Budget Performance Total report and/or the FMIS and the End of Financial Year Actual Expenditure. This amount should be equal to the 2020–21 Budget figure in the Project Header and the Estimate Final Plan in Section 2.2A In-year Budget Estimate Variance.
	Actual \$m	The actual project expenditure incurred in the current reporting period (i.e. 2020–21). This amount should be equal to the FY to Jun 21 Total Expenditure in Section 2.1 Project Budget (out-turned) and Expenditure History.
	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: <ul style="list-style-type: none"> • Australian Industry; • Foreign Industry; • Early Processes; • Defence Processes; • Foreign Government Negotiations/Payments; • Cost Saving; • Effort in Support of Operations; and • Additional Government Approvals.
	Explanation	Explanations must address all of the variance factors noted above, where relevant. Material changes following the publication of the PAES may require an explanation. This explanation should be equal to the In-year Cost Performance statement in Section 1.2.
Section 2.3 Details of Project Major Contracts	Contractor ¹⁸⁴	List the contractors for the top 5 contracts valued at greater than or equal to \$10m. For large projects it may be appropriate to include greater than the top 5 contracts. Contractors should be listed in order of signature date (earliest to most recent). The top five contracts listed should be the same as the contracts listed in Section 2.1 Project Budget (out-turned) and Expenditure History.
	Signature Date	The date the contract was signed.

¹⁸⁴ 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
	Price at Signature \$m and 30 Jun 21 \$m	<p><u>Signature \$m</u> The value of the contract at signature.</p> <p><u>30 Jun 2021 \$m</u> The value of the contract at 30 June 2021 (i.e. value spent as per Section 2.1 Project Budget (outturned) and Expenditure History plus remaining commitment as at the spot exchange rates as recorded in the FMIS at 30 June 2021). All values are exclusive of GST.</p>
	Type (Price Basis)	<p>Choices for this include:</p> <ul style="list-style-type: none"> • Firm (or Fixed); • Variable; • Cost Ceiling (capped); or • Reimbursement (for FMS). <p>For further information including templates refer to the ASDEFCON Suite of Tendering and Contracting Templates on the Defence intranet.</p>
	Form of contract	<p>Choices for this include:</p> <ul style="list-style-type: none"> • Standard Defence Contract (for ASDEFCON); • FMS (for Foreign Military Sales); and • MoU (for Memorandum of Understanding). <p>For unique arrangements such as Alliance or Public Private Partnership, they would need to be specially treated (noting the key signatories to the arrangement). Projects should seek the advice of the Defence MPR team.</p>
	Notes	For additional information as required, e.g. description of new contract or explanation of significant changes in contract value from the prior year.
	Contractor	List the contractors for the top 5 contracts. For large projects it may be appropriate to include greater than the top 5 contracts. Contractors should be listed in order of signature date (earliest to most recent), i.e. same order as above.
	Contracted Quantities as at Signature and 30 Jun 21	<p>The quantity of major equipment under contract as at the date the contract was signed and also as at 30 June 2021.</p> <p>The quantity of contracted equipment should only be provided at a summary level.</p>
	Scope	Briefly describe the scope of the contract deliverables. 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. 'Upgraded Collins Class Submarines'.
	Notes	For additional information as required.
	Major equipment accepted and quantities to 30 Jun 21	Detail the major equipment and quantities the project has accepted to 30 June 2021.

JCPAA 2020–21 Major Projects Report Guidelines

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2020–21 Major Projects Report

Heading	Data	Definition/Description
	Notes	For additional information as required.
SECTION 3 – SCHEDULE PERFORMANCE		
Section 3.1 Design Review Progress	Review	The events to be included are shown below as they are applicable to the project: <ul style="list-style-type: none"> • System Requirements; • Preliminary Design; and • Critical Design. If some or all of the above events are not applicable, other or alternative reviews, for instance, unique arrangements or redesigns, should be included.
	Major System/ Platform Variant	State the major system that the design review refers to. Significant variants for the major systems should also be included.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Contracted	Replanned dates as evidenced by a contract amendment.
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved as supported by evidence, or <u>Forecast</u> : The expected date for achievement supported by the project schedule (e.g. as recorded in Open Plan Professional (OPP)).
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.2 Contractor Test and Evaluation Progress	Test and Evaluation	The events to be included are shown below as they are applicable to the project: <ul style="list-style-type: none"> • System Integration; and • Acceptance. If some or all of the above events are not applicable, other or alternative test and evaluation activities, for instance, unique arrangements or activities associated with redesign, should be included.
	Major System/ Platform Variant	State the major system that the Test and Evaluation event refers to. If there are significant variants for the major systems, then state what they are.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Contracted	The revised planned achievement dates as evidenced by a contract amendment.
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved as supported by evidence; or <u>Forecast</u> : The expected date for achievement supported by the project schedule (e.g. as recorded in OPP).

Heading	Data	Definition/Description
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.3 Progress Toward Materiel Release and Operational Capability Milestones	Item	Represented at a whole of capability level, unless key milestones are broken out under individual Mission or Support Systems.
	Original Planned	The original date on which the Materiel Release or Operational Capability milestone was scheduled for achievement.
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved as supported by evidence; or <u>Forecast</u> : The expected date for achievement supported by the project schedule (e.g. as recorded in OPP).
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A note against all milestones should direct the reader to Section 4.2 for definitions of the milestones. A top level description of the reasons for and implications of the variance to 'Achieved/Forecast' dates. Where the project has achieved a milestone with caveats, a brief description of the caveats should be added. This should be consistent with the description in section 5.2.
Schedule Status at 30 June 2021	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 / SCOPE DELIVERY PERFORMANCE		
Section 4.1 Measures of Materiel Capability Delivery Performance	Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	<p>This section presents a forecast of the materiel capability to be delivered by the acquisition project by FOC. Materiel capability is assessed as:</p> <ul style="list-style-type: none"> • Green – a high level of confidence that the capability outcome will be met; • Amber – the capability outcome being under threat but still considered manageable and able to be met; or • Red – at this stage, the capability outcome is unlikely to be fully met. <p>The Pie Chart and associated narratives will provide a percentage breakdown of the Materiel Release Milestones and Completion Criteria for the project, as identified in the MAA and/or government approval, at 30 June 2021.</p> <p>Where materiel deliverable/s is assessed as Amber or Red, the pie chart analysis/narrative should describe what deliverable/s is under threat or unlikely to be met and what action is being taken to address this. Where there is no data insert 'N/A'.</p>

Heading	Data	Definition/Description
		<p>Detailed technical performance of systems is to be avoided, and classified information is not to be disclosed.</p> <p>Where the project has not yet achieved IMR, the statement against the Green traffic light should be written in future tense, i.e. <i>“The project expects to meet capability requirements as expressed in the Materiel Acquisition Agreement...”</i>, as opposed to <i>“The project is currently meeting...”</i>.</p> <p>Note: The analysis and narrative disclosures should align with information in the MRM. Defence may need to provide alternative evidence to support disclosures which are not able to be supported by MRM.</p>
Section 4.2 Constitution of Materiel Release and Operational Capability Milestones	Item	Represented at a whole of capability level, i.e. IMR, IOC, FMR and FOC.
	Explanation	<p>A description of the materiel release and operational capability elements as stipulated in the MAA, at 30 June 2021, including an indication of whether or not these milestones have been achieved.</p> <p>If the milestone has not been met, include a statement to indicate when the milestone is expected to be achieved.</p> <p>The milestones to be included are shown below as they are applicable to the project:</p> <ul style="list-style-type: none"> • Initial Materiel Release; • Initial Operational Capability; • Final Materiel Release; and • Final Operational Capability. <p>If some or all of the above events are not applicable, other or alternative milestones, for instance operational release milestones, should be included.</p> <p>Note: Where the project has achieved a milestone with caveats, a brief description of the caveats should be added. This should be consistent with the description in Section 5.2</p>
	Achievement	Standard text, i.e. Achieved; Not yet achieved; or Achieved with caveats.
SECTION 5 – MAJOR RISKS AND ISSUES		
Section 5.1 Major Project Risks	Identified Risks (risks identified by standard project risk management processes)	<p><u>Description:</u> A major project risk is one that is rated high or extreme pre-mitigation in accordance with Defence's risk management framework.</p> <p><u>Remedial Action:</u> The risk mitigation/treatment proposed for the risk identified (these must be actionable measures).</p> <p><u>Note 1:</u> If the risk has been retired or the pre-mitigation rating has been downgraded to medium, this should be documented along with the reason; the risk can then be removed in the subsequent MPR.</p> <p><u>Note 2:</u> All high and extreme risks require disclosure. The disclosures may be aggregated to</p>

Heading	Data	Definition/Description
		include multiple risks against one common description. In addition, a mapping of all risks from project risk logs to the PDSS is required. <u>Note 3:</u> Where contingency has been applied to treat a risk the wording should be consistent with Section 1.2 Current Status - Cost Performance - Contingency Statement.
	Emergent Risks (risks not previously identified but have emerged during 2020–21)	<u>Description:</u> A major project risk that was not previously identified in the risk log but has emerged this year, rated as high or extreme pre-mitigation. This includes project risks previously rated medium or low pre-mitigation. <u>Remedial Action:</u> The risk mitigation/treatment proposed for the risk identified (these must be actionable measures). The risk becomes an Identified Risk in the subsequent MPR. <u>Note 1:</u> All high and extreme emergent risks require disclosure. The disclosures may be aggregated to include multiple risks against one common description. In addition, a mapping of all emergent risks from project risk logs to the PDSS is required. <u>Note 2:</u> Where contingency has been applied to treat a risk the wording should be consistent with Section 1.2 Current Status - Cost Performance - Contingency Statement.
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. <u>Note 1:</u> All high and extreme issues require disclosure. In addition, a mapping of all issues from project issues logs to the PDSS is required. <u>Note 2:</u> Where the project has achieved a milestone with caveats, caveats should be disclosed as separate issues. On the removal of the caveat, it should also be clear to the reader whether the underlying shortfall/issue has been resolved. (See also Section 1.3 Major Risks and Issues, Section 3.3, and Section 4.2).
	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 – LESSONS LEARNED		
Section 6.1 Key Lessons Learned	Description	Describe the project lesson (at the strategic level) that has been learned.
	Categories of Systemic Lessons	Select from the following 'Systemic Lessons' ¹⁸⁵ categories where they are applicable to the project: <ul style="list-style-type: none"> • Requirements Management; • First of Type Equipment; • Off-The-Shelf Equipment;

¹⁸⁵ ANAO Report No.13 2009–10, *2008–09 Major Projects Report*, November 2009, Part 3, paragraph 3.25, p. 122.

Heading	Data	Definition/Description
		<ul style="list-style-type: none"> Contract Management; Schedule Management; Resourcing; and/or Governance.
SECTION 7 – PROJECT LINE MANAGEMENT		
Section 7.1 Project Line Management as at 30 June 2021	Position and names of the Project's Line Management	<p>List the names of the senior management team as appropriate to the project. This should include:</p> <ul style="list-style-type: none"> Division Head or Program Manager; and Branch Head. <p>This list will contain those persons who occupied their respective position as at 30 June 2021.</p>

Project Data Summary Sheet Template¹⁸⁶

Project Number	XXX XXX	Project Image.
Project Name	XXX XXX	
First Year Reported in the MPR	20XX–XX	
Capability Type	XXX	
Capability Manager	XXX	
Government 1st Pass Approval	XXX	
Government 2nd Pass Approval/ or key Government pre-Second Pass Approval (<i>specify one</i>)	XXX	
Budget at 2nd Pass Approval/or key Government pre-Second Pass Approval (<i>specify one</i>)	\$XXX.Xm	
Total Approved Budget (Current)	\$XXX.Xm	
2020–21 Budget	\$XXX.Xm	
Complexity	ACAT XXX	

Section 1 – Project Summary

1.1 Project Description

1.2 Current Status

Cost Performance
<u>In-year</u>
<u>Project Financial Assurance Statement</u>
<u>Contingency Statement</u>
Schedule Performance
Materiel Capability Delivery Performance
Note
Forecast dates and capability assessments are excluded from the scope of the Auditor-General's Independent Assurance Report.

1.3 Project Context

Background
Uniqueness
Major Risks and Issues

¹⁸⁶ 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.

Other Current Related Projects/Phases
Note
Major risks and issues are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
	Original Approved (Government First/Interim/Second Pass Approval)	XXX.X	X
	Real Variation – Scope	XXX.X	
	Real Variation – Transfer	XXX.X	
	Total at Second Pass Approval /or key Government pre-Second Pass Approval (<i>specify one</i>)	XXX.X	
	Real Variation – Budgetary Adjustment	XXX.X	
	Real Variation – Real Cost Increase / Decrease	XXX.X	
		XXX.X	
Jul 10	Price Indexation*	XXX.X	
Jun 21	Exchange Variation	XXX.X	
Jun 21	Total Budget	XXX.X	
	Project Expenditure		
Prior to Jul 20	Contract Expenditure – Contractor 1	XXX.X	X
	Contract Expenditure – Contractor 2	XXX.X	
	Contract Expenditure – Contractor 3	XXX.X	
	Contract Expenditure – Contractor 4	XXX.X	
	Contract Expenditure – Contractor 5	XXX.X	
	Other Contract Payments / Internal Expenses	XXX.X	
		XXX.X	
FY to Jun 21	Contract Expenditure – Contractor 1	XXX.X	
	Contract Expenditure – Contractor 2	XXX.X	
	Contract Expenditure – Contractor 3	XXX.X	
	Contract Expenditure – Contractor 4	XXX.X	
	Contract Expenditure – Contractor 5	XXX.X	
	Other Contract Payments / Internal Expenses	XXX.X	
		XXX.X	
Jun 21	Total Expenditure	XXX.X	
Jun 21	Remaining Budget	XXX.X	X
Notes			
1	XXX		
2	XXX		
3	XXX		
4	XXX		

*Note – Those projects approved in 'out- turned' dollars will not contain an entry for 'Price Indexation'. In these instances this line can be removed.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
	XXX.X	XXX.X	
Variance \$m	XXX.X	XXX.X	Total Variance (\$m): XXX
Variance %	XXX.X	XXX.X	Total Variance (%): XXX

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		XXX.X	Australian Industry	
		XXX.X	Foreign Industry	
		XXX.X	Early Processes	
		XXX.X	Defence Processes	
		XXX.X	Foreign Government Negotiations/Payments	
		XXX.X	Cost Saving	
		XXX.X	Effort in Support of Operations	
		XXX.X	Additional Government Approvals	
XXX.X	XXX.X	XXX.X	Total Variance	
		XXX.X	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 21 \$m			
Contractor 1	XXX	XXX.X	XXX.X	XXX	XXX	X
Contractor 2	XXX	XXX.X	XXX.X	XXX	XXX	X
Contractor 3	XXX	XXX.X	XXX.X	XXX	XXX	X
Contractor 4	XXX	XXX.X	XXX.X	XXX	XXX	X
Contractor 5	XXX	XXX.X	XXX.X	XXX	XXX	X
Notes						
1	XXX					
Contractor	Contracted Quantities as at		Scope			Notes
	Signature	30 Jun 21				
Contractor 1	XXX	XXX	XXX			X
Contractor 2	XXX	XXX	XXX			X
Contractor 3	XXX	XXX	XXX			X
Contractor 4	XXX	XXX	XXX			X
Contractor 5	XXX	XXX	XXX			X
Major equipment accepted and quantities to 30 Jun 21						
XXX						
Notes						
1	XXX					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Requirements	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X

	XXX	XXX	XXX	XXX	XXX	X
Preliminary Design	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
Critical Design	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
Notes						
1	XXX					
2						
3						
4						

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Contracted	Achieved/Forecast	Variance (Months)	Notes
System Integration	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
Acceptance	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
	XXX	XXX	XXX	XXX	XXX	X
Notes						
1	XXX					
2						
3						
4						

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	XXX	XXX	XXX	X
Initial Operational Capability (IOC)	XXX	XXX	XXX	X
Final Materiel Release (FMR)	XXX	XXX	XXX	X
Final Operational Capability (FOC)	XXX	XXX	XXX	X
Notes				
1	XXX			
2				
3				
4				
Schedule Status at 30 June 2021				
Defence MPR Team to insert graph				

Note
Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

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: XXX

	Amber: XXX
	Red: XXX
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.	

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	XXX	XXX
Initial Operational Capability (IOC)	XXX	XXX
Final Materiel Release (FMR)	XXX	XXX
Final Operational Capability (FOC)	XXX	XXX

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
XXX	XXX
XXX	XXX
XXX	XXX
XXX	XXX
Emergent Risks (risk not previously identified but has emerged during 2020–21)	
Description	Remedial Action
XXX	XXX
XXX	XXX
XXX	XXX
XXX	XXX

5.2 Major Project Issues

Description	Remedial Action
XXX	XXX
XXX	XXX
XXX	XXX
XXX	XXX

Note
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
XXX	XXX
XXX	XXX
XXX	XXX
XXX	XXX

Section 7 – Project Line Management

7.1 Project Line Management as at 30 June 2021

Position	Name
Division Head	XXX
Branch Head	XXX

Indicative 2020–21 MPR Program Schedule

Event	Start Date	End Date
Planning for the 2020–21 MPR (including review of outcomes of the 2019–20 program)	Dec 20	Jan 21
Defence and ANAO finalise preparations for the 2020–21 MPR program in time for the JCPAA Hearing	Jan 21	Mar 21
ANAO provide the Engagement Letter and Review Strategy to the Secretary of Defence ¹⁸⁷	Feb 21	Jun 21
Defence MPR provide program advice to the project offices	Feb 21	Feb 21
Defence MPR management finalise preparation with the project offices	Feb 21	Feb 21
Project site visits conducted by the ANAO	Mar 21	Jun 21
End Of Financial Year advice to project offices	Jul 21	Jul 21
Post 30 June PDSS reviews	Jul 21	Sep 21
ANAO submits 2021–22 MPR Guidelines and Project Selection to the JCPAA	Aug 21	Aug 21
Development of the Defence 2020–21 MPR	Aug 21	Oct 21
ANAO develops its Assurance, Review and Analysis for provision to the Secretary	Aug 21	Oct 21
Defence provides advice to the ANAO regarding the security classification of the aggregated PDSS suite	Oct 21	Oct 21
Secretary submits formal draft Defence section of the 2020–21 MPR to the Auditor-General	Oct 21	Oct 21
Defence response to the ANAO Assurance, Review and Analysis for provision to the Auditor-General	Oct 21	Oct 21
ANAO response to the Defence 2020–21 MPR to Defence	Oct 21	Oct 21
ANAO internal clearance of the 2020–21 MPR (Publication and Tabling)	Nov 2021	

¹⁸⁷ Timing will depend on the JCPAA hearing to ensure key priorities of the JCPAA are considered.

