

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

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.

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.

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.

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.

1.2 Current Status

Cost Performance

In-year

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.

Project Financial Assurance Statement

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.

Contingency Statement

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

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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2020–21 Major Projects Report

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) | - | |
| | Other Contract Payments / Expenses | (9.2) | 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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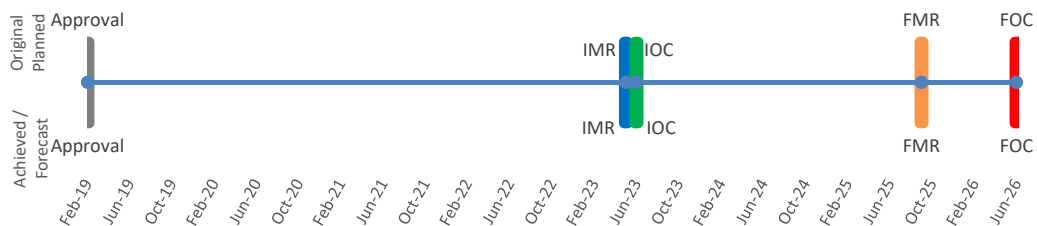
3.2 Contractor Test and Evaluation Progress

| 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

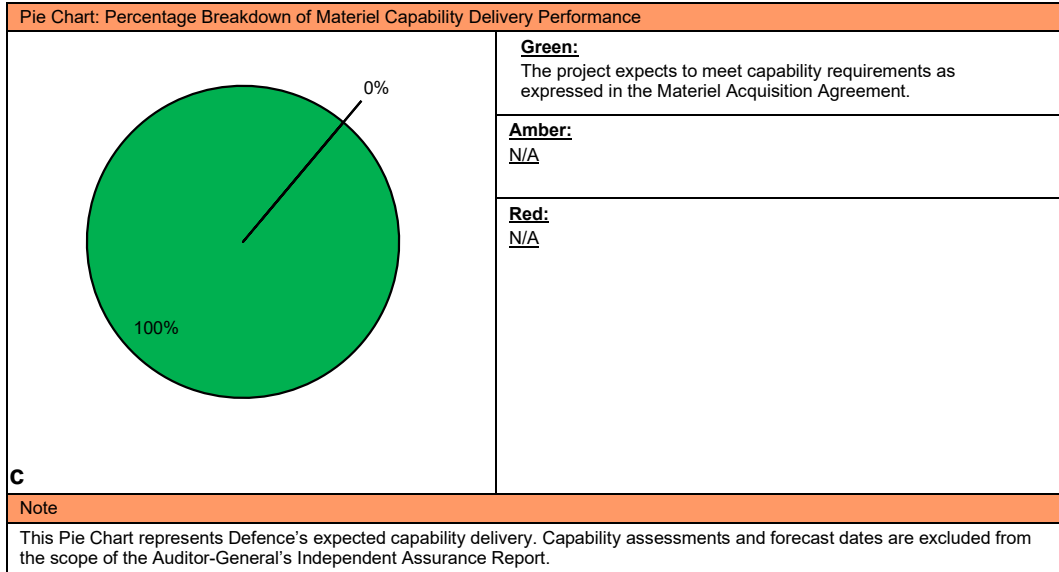


Note

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 Radar Classroom Trainer installed) Basic Support Equipment Initial Spares Systems accepted and certified Support 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 Unit Vehicles to support Fire Unit Operator and maintainer training Completion 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"> All Fire Units All Radars All 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 FMR Doctrine published All certification and accreditation complete Facilities complete FOC is expected to be achieved in June 2026. | 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 |
| <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. 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 |