

## Project Data Summary Sheet<sup>150</sup>

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 <sup>nd</sup> Pass Approval	\$3,639.1m
Total Approved Budget (Current)	<b>\$3,669.6m</b>
2020-21 Budget	<b>\$252.1m</b>
Complexity	ACAT II



Offshore Patrol Vessel

Part 3. Project Data Summary Sheets

### 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 Armidale Class Patrol Boats (ACPB). The primary role of the Arafura OPV is constabulary operations and each ship will carry two crane-launched 8.5m Rigid Hull Inflatable Boats (RHIB) and one 10.5m Rapid Intercept Craft (RIC) launched via the stern of the vessel.

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 Luerssen.

**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
<b>Project Budget</b>			
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
	<b>Total at Second Pass</b>	<u>3,639.1</u>	
Jun 21	Exchange Variation	30.5	
Jun 21	<b>Total Budget</b>	<u>3,669.6</u>	
<b>Project Expenditure</b>			
Prior to Jul 20	Contract Expenditure - Luerssen Australia	(503.1)	5
	Contract Expenditure - Boomeranger Boats Oy	(4.0)	
	Other Contract Payments/Internal Expenses	(101.7)	6
		<u>(608.9)</u>	
FY to Jun 21	Contract Expenditure - Luerssen Australia	(161.7)	5
	Contract Expenditure - Boomeranger Boats Oy	(1.3)	
	Other Contract Payments/Internal Expenses	(41.6)	7
		<u>(204.6)</u>	
Jun 21	<b>Total Expenditure</b>	<u>(813.4)</u>	
Jun 21	<b>Remaining Budget</b>	<u>2,856.2</u>	
<b>Notes</b>			
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 Luerssen Australia Pty Ltd. The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.		
6	Other expenditure prior to July 2020 comprises \$29.7m for the Risk Reduction Design Study and Schedule Protection Activity; \$30.6m for Project Office Support; \$7.4m Luerssen 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 Luerssen 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	<b>PBS - PAES: The variance is a result of a partial variation of Luerssen 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.</b>
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 <b>schedule delay</b> of the Luerssen <b>Integrated Baseline Review and Support System Detailed Design Review</b> . Additionally, spend on GFE, <b>OPV</b>
			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
<b>Notes</b>						
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						
<b>Notes</b>						
	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
<b>Notes</b>						
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. <b>Outstanding actions were identified and due to exit in September 2021.</b>

3.2 Contractor Test and Evaluation Progress

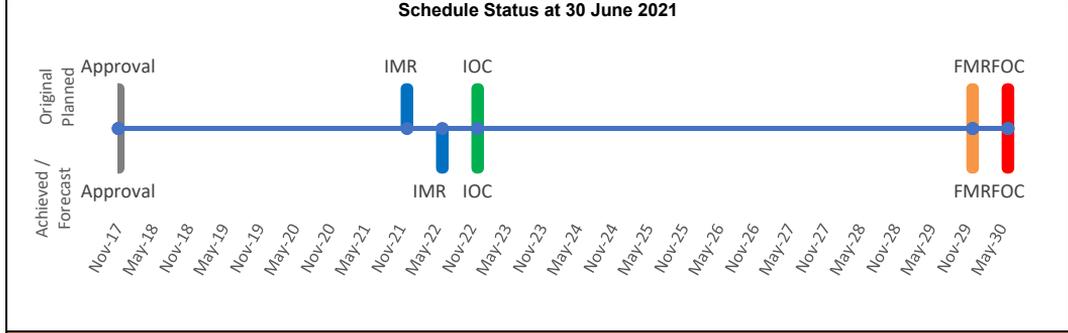
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Contracted	Achieved / Forecast	Variance (Months)	Notes
Acceptance	OPV 1 (Arafura)	Dec 21	N/A	Jun 22	6	1
Acceptance	OPV 2 (Eyre)	Sep 22	N/A	Mar 23	6	1
Acceptance	OPV 3 (Pilbara)	May 23	N/A	May 23	0	
Acceptance	OPV 4 (Gippsland)	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	

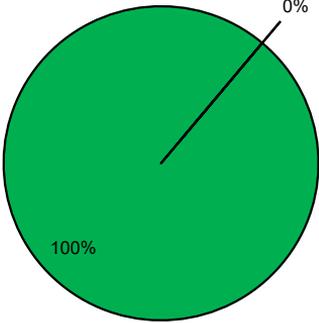
**Notes**  
 1 The COVID-19 pandemic has impacted multiple aspects relating to construction and in particular, activities at Osborne Shipyard in South Australia from March to October 2020.  
 2 Further clarification of milestones will be reflected in Section 4.2.



**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	
	<p><b>Green:</b> 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.</p>
	<p><b>Amber:</b> N/A</p>
	<p><b>Red:</b> N/A</p>
<p><b>Note</b> 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)	<p>OPV1 delivered ready for Operational Test and Evaluation (OT&amp;E).</p> <p>Those CASG Fundamental Inputs to Capability (FIC) elements including transition into sustainment as defined by the OPV Support System sufficient to support OT&amp;E.</p> <p>IMR is expected to be achieved <b>June 2022</b>.</p>	Not yet achieved
Initial Operational Capability (IOC)	<p>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.</p> <p>IOC is expected to be achieved December 2022.</p>	Not yet achieved
Final Materiel Release (FMR)	<p>OPVs 1-12 delivered in accordance with Government Approved scope.</p> <p>OPV12 delivered ready for OT&amp;E.</p> <p>Those CASG FIC elements including transition into sustainment as defined by the OPV Support System sufficient to support OT&amp;E for each OPV.</p> <p>FMR is expected to be achieved December 2029.</p>	Not yet achieved
Final Operational Capability (FOC)	<p>OPVs 1-12 complete in accordance with Functional Performance Specification and Operating and Support Intent.</p> <p>OPV12 delivered and OT&amp;E completed.</p> <p>All Facilities accepted.</p> <p>All support organisations functioning.</p> <p>FOC is expected to be achieved June 2030.</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
<p>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.</p>	<p>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.</p> <p>The Naval Shipbuilding College is identifying the increased demands and skillsets required.</p> <p>The current workforce numbers are supporting the OPV build, however the risk continues to be monitored and is tracking at a Medium rating.</p>

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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

