

## Project Data Summary Sheet<sup>143</sup>

Project Number	<b>SEA 1180 Phase 1</b>
Project Name	<b>OFFSHORE PATROL VESSEL</b>
First Year Reported in the MPR	2018-19
Capability Type	Replacement
Acquisition Type	Australianised MOTS
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)	\$3,724.3m
2018–19 Budget	\$210.0m
Project Stage	Preliminary Design Review
Complexity	ACAT II



### Section 1 – Project Summary

#### 1.1 Project Description

Project SEA 1180 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 SEA 1180 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, through a separate contract, the sea boats for the vessels. 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 \$203.6m spend out of \$210.0m budget. The EOFY variance is a result of Government Furnished Equipment (GFE) and project office cost reductions and variations in escalation costs and a re-phased contracted payment milestone amount (\$10.0m). This underspend has largely been offset by the early achievement of commencing construction of the second Offshore Patrol Vessel (OPV).

###### Project Financial Assurance Statement

As at 30 June 2019, project SEA 1180 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 Offshore Patrol Vessel in South Australia in November 2018 on schedule. A Whole of Ship Design Review is being added to the program for late 2019. The Project is on track to achieve the Initial Materiel Release (IMR) and Final Materiel Release (FMR) milestones.

##### Materiel Capability Delivery Performance

The project is on schedule to deliver 12 Offshore Patrol Vessels.

##### Note

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

#### 143 Notice to reader

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

## 1.3 Project Context

<p><b>Background</b></p> <p>The SEA 1180 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.</p> <p>In August 2015, the Government announced that SEA 1180 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.</p> <p>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.</p> <p>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).</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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. CCP 007 will adjust the Support System development and also introduce a Whole of Ship Design Review enabling completion of the design phase.</p> <p>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 was achieved in February 2019 and the ceremony for Nuship <i>Arafura</i> occurred on 10 May 2019. Production of the second OPV commenced in June 2019, two months ahead of schedule.</p> <p>Nuship <i>Arafura</i> is expected to be delivered by Luerssen in December 2021 after which Navy will commence its Naval Operational Test and Evaluation (NOTE). Initial Operational Capability (IOC) is expected by December 2022.</p> <p>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.</p>
<p><b>Uniqueness</b></p> <p>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.</p>
<p><b>Major Risks and Issues</b></p> <p>The project is monitoring the potential impact to OPV production created by availability of workforce due to competing demands by other Defence projects and Industries. The project is managing a risk with delays in obtaining retransfer permission for Government Furnished Data for FMS/ITAR items. An additional risk exists if design changes occur to the Government Furnished Equipment during the Acquisition Phase.</p>
<p><b>Other Current Related Projects/Phases</b></p> <p>Related Projects include:</p> <p>SEA 5000 – 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.</p>

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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 review.

## 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>	3,639.1	
Jun 19	Exchange Variation	85.2	
Jun 19	<b>Total Budget</b>	3,724.3	
<b>Project Expenditure</b>			
Prior to Jul 18	Contract Expenditure - Luerssen Australia	(100.1)	5
	Other Contract Payments/Internal Expenses	(49.9)	6
		(150.0)	
FY to Jun 19	Contract Expenditure - Luerssen Australia	(191.2)	5
	Other Contract Payments/Internal Expenses	(12.4)	7
		(203.6)	
	<b>Total Expenditure</b>	(353.6)	
Jun 19	<b>Remaining Budget</b>	3,370.7	
<b>Notes</b>			
1	Funding in support of bringing forward 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 SEA 1180 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 Jul 18 comprises \$21.4m for the Risk Reduction Design Study and Schedule Protection Activity; \$14.2 to Nova for Project Office Support and \$14.3m for other contract payments/internal expenses.		
7	Other expenditure comprises 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
274.4	220.7	210.0	PBS - PAES: The variance is due to the later than expected signature of the acquisition contract and consequent flow down to planned payment dates. PAES- Final Plan: PAES: The variance was due to a re-phased contracted payment milestone of \$10.0m.
Variance \$m	(53.7)	(10.7)	Total Variance (\$m): (64.4)
Variance %	(19.6)	(4.8)	Total Variance (%): (23.5)

### 2.2B In-year Budget/Expenditure Variance

Estimate Jun Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	
			Foreign Industry	
			Early Processes	
		(6.4)	Defence Processes	

			Foreign Government Negotiations/Payments	EOFY variance is a result of GFE and project office cost reductions. In addition, a contracted payment milestone (\$10m) has been re-phased together with delayed escalation costs. This underspend has largely been offset by the early achievement of the commencement of construction of the second Offshore Patrol Vessel (OPV).
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
210.0	203.6	(6.4)	Total Variance	
		(3.0)	% Variance	

## 2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Luerssen Australia	31 Jan 18	1,988.0	2,421.1	Fixed with forecast Escalation	ASDEFCON (Complex)	1,2
<b>Notes</b>						
1	Contract value as at 30 June 19 is based on actual expenditure to 30 June 19 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 19 value will reflect a variance to prior reporting period.					
2	The price is the value in out turned dollars (as at June 2019) 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 19 includes this estimate, which is the reason for the large difference between the two figures.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Luerssen Australia	12	12	12 Offshore Patrol Vessels			
Major equipment received and quantities to 30 Jun 19						
Nil						
<b>Notes</b>						
	N/A					

## Section 3 – Schedule Performance

## 3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	Platform System – Stream A	Jun 18	NA	Jun 18	0	
Preliminary Design		Aug 18	NA	Aug 18	0	
Detailed Design		Oct 18	Nov 18	Nov 18	1	1
System Requirements	Platform System – Stream B	Jun 18	NA	Jun 18	0	
Preliminary Design		Nov 18	Dec 18	Dec 18	1	1
Detailed Design		Feb 19	NA	May 19	3	1
System Requirements	Command and Control System (C2)	Jun 18	NA	Jun 18	0	
Preliminary Design		Dec 18	Nov 18	Nov 18	(1)	
Detailed Design		Mar 19	NA	Mar 19	0	
System Requirements	Communication and Navigation System (CNS)	Jun 18	NA	Jun 18	0	
Preliminary Design		Jan 19	NA	Nov 18	(2)	1
Detailed Design		Apr 19	NA	May 19	1	
Preliminary Design	Support System (SS)	Nov 18	NA	Jun 19	7	1, 2
Detailed Design		Jun 19	Jun 19	Apr 20	10	1, 2
<b>Notes</b>						
1	Variance was agreed by the parties at Contract Change Proposal (CCP) 001 and incorporated under Contract Amendment 3.					
2	CCP 007, in draft, proposes 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).					

## 3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
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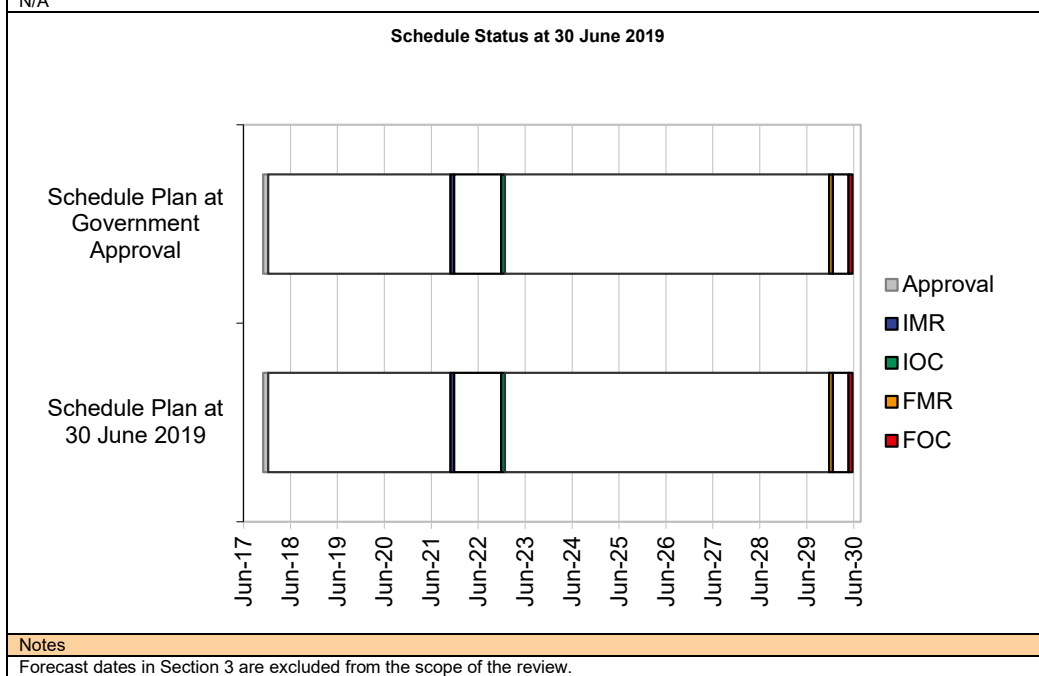
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Acceptance	OPV 1	Dec 21	N/A	Dec 21	0	
Acceptance	OPV 2	Sep 22	N/A	Sep 22	0	
Acceptance	OPV 3	May 23	N/A	May 23	0	
Acceptance	OPV 4	Feb 24	N/A	Feb 24	0	
Acceptance	OPV 5	Nov 24	N/A	Nov 24	0	
Acceptance	OPV 6	Jul 25	N/A	Jul 25	0	
Acceptance	OPV 7	Apr 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	
<b>Notes</b>						
N/A						

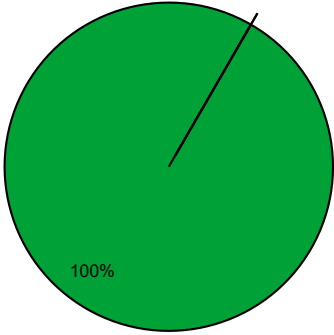
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 21	Dec 21	0	
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	
<b>Notes</b>				
N/A				



## 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 review.</p>	

### 4.2 Constitution of Initial Materiel Release and Final Materiel Release

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 December 2021.</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

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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 the OPV communications system will be affected by the late delivery of Government Furnished Data leading to an impact on schedule.	SEA 1180 project is constrained by third party retransfer permission. The project office works closely with Luerssen to understand design assumptions which are made due to the lack of GFM, in particular technical data.
There is a chance that future Government Furnished Equipment changes will be imposed on the project leading to an impact on Cost.	SEA 1180 was funded to develop a single baseline for Government Furnished Equipment which has been established. Changes to that equipment driven by obsolescence or capability are managed outside of SEA 1180. The scope of any future changes will need to consider the Arafura Class as an In Service baseline.
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.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	N/A

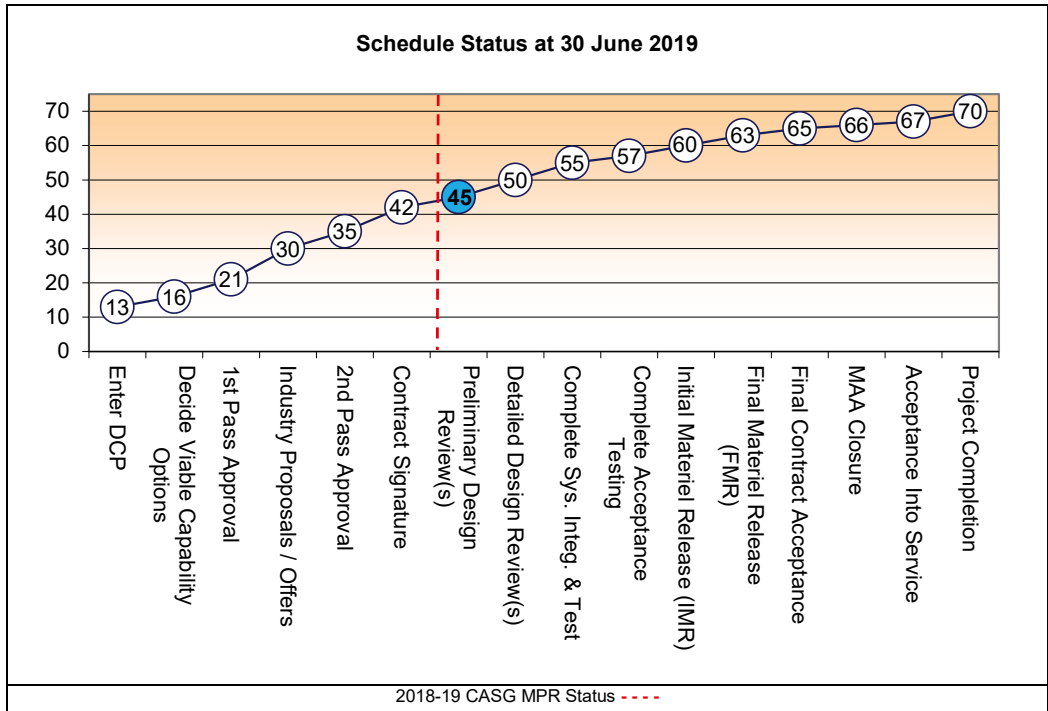
### 5.2 Major Project Issues

Description	Remedial Action
N/A	N/A
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

## Section 6 – Project Maturity

### 6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	7	6	7	7	45
Preliminary Design Review	Project Status	7	7	6	6	7	7	4	44
	Explanation	<ul style="list-style-type: none"> <li>Schedule: Project commenced construction on OPV#2 ahead of schedule.</li> <li>Cost: Project costs are within contingency and sufficient to deliver the project.</li> <li>Technical Understanding will remain 6 until Support system Design is finalised.</li> <li>Technical Difficulty: OPV design is based on an existing Reference Ship Design.</li> <li>Operations and Support: Impact on the existing operating and support environment is known, planning is yet to commence on the transition from acquisition to sustainment.</li> </ul>							



**Section 7 – Lessons Learned**

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Nil	

**Section 8 – Project Line Management**

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	Ms Sheryl Lutz
Branch Head	Mr Peter Croser
Project Director/Manager	Mr Oliver Ciano

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