

## Project Data Summary Sheet<sup>165</sup>

Project Number	<b>AIR 5431 Phase 3</b>
Project Name	<b>Civil Military Air Traffic Management System (CMATS)</b>
First Year Reported in the MPR	2016-17
Capability Type	Replacement
Acquisition Type	Developmental
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Nov 11
Government 2nd Pass Approval (or key Government pre-Second Pass Approval)	Dec 14
Budget at 2 <sup>nd</sup> Pass Approval (or key Government pre-Second Pass Approval)	\$731.4m
Total Approved Budget (Current)	<b>\$975.6m</b>
2019-20 Budget	<b>\$86.4m</b>
Project Stage	Contract Signature
Complexity	ACAT I



### Section 1 – Project Summary

#### 1.1 Project Description

AIR 5431 Phase 3 seeks to replace the current Fixed Base Defence Air Traffic Management and Control Systems at 12 Australian Defence Force (ADF) fixed base locations with a new harmonised system, referred to as the Civil Military Air Traffic Management System (CMATS). The CMATS component of AIR 5431 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

AIR 5431 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 June 2020 is \$87.5m against a budget of \$86.4m. The variation is due to payment of an additional On-Supply-Agreement invoice to Airservices (+\$12.4m). This is partly offset by a partial delivery (approximately \$0.2m of \$9.3m milestone) of Air-Ground-Air Transition Materials (-\$9.1m) and slippage in Air-Ground-Air contract milestones (-\$2.2m).

###### Project Financial Assurance Statement

As at 30 June 2020, project AIR 5431 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial 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 exited CMATS Preliminary Design Review (PDR) in December 2019. PDR was achieved through the application of a maturity-based approach to the deliverables under this milestone. The ongoing technical debt is expected to be complete by the end of July 2020. The delays in finalising the outcomes of PDR has resulted in a delay to the next engineering milestone, which is Critical Design Review entry, which is now planned for August 2020.

A revised Materiel Acquisition Agreement (MAA) was signed in April 2020, incorporating updated milestone dates for AIR5431 Phase 3 Initial Operational Capability (IOC) planned in June 2023 and Final Operational Capability (FOC) planned April 2026.

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

As foreshadowed at the time of contract signature, the CMATS contract required a number of Contract Change Proposals (CCPs) to incorporate the agreed Defence scope changes and address engineering changes, including Airservices options, known at the time of contract signature. Airservices have executed eight CCPs since contract signature. Execution of the CCPs is critical to stabilisation of the functional and schedule baselines.

The ability for Thales to progress the CCPs as well as performing the activities under the contract have been strained due to lower than desired staffing rates.

CCP4 was a Defence initiated CCP to correct the quantities of some items, and introduce a digital interface for the contemporary radios under procurement. CCP4 was signed by Airservices and Thales in July 2019 which resulted in a delay to IOC.

CCP5 incorporated the remaining Defence collaboration initiatives, the major one being the relocation of Townsville and Darwin Approaches into Brisbane centre. CCP5 was signed by Airservices and Thales in October 2019. Thales and its subcontractors are currently in the process of finalising amendments to the subcontractor agreements to flow down the changes arising from CCP5. As a result, there have been multiple baseline challenges to manage.

The CCPs 6, 7 and 8, which were signed November 19, February 20 and June 20, respectively, CCP 6 and 7 are minor scope changes and did not affect major milestone dates and CCP 008 was an administration change.

Defence's Independent Assurance Review, conducted Quarter 1 2020, recommended the project remain a project of interest, and noted the schedule challenges presented by the number of CCPs and replanning of activities. The Integrated Baseline Review (IBR), conducted December 2019 to February 2020, also noted schedule challenges and additional work required to approve the Performance Measure Baseline (PMB). Thales has yet to complete all outstanding actions from the IBR review.

The delays to IOC and FOC forecast in the previous PDSS of approximately six months have now been realised. Air Force advised Government of the delays via cabinet submission in December 2019. Based on Government's acknowledgement of those dates, an updated MAA to reflect the new dates has been signed.

#### Material Capability Delivery Performance

This program has not delivered any material 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 Material 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 material 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 AIR 5431 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.

AIR 5431 Phase 3 achieved First Pass approval in November 2011 as part of a combined project with AIR 5431 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 AIR 5431 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 AIR 5431 Phase 2 and Phase 3 as separate projects. A PIRB held April 2014 agreed to seek Second Pass for AIR 5431 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.

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AIR 5431 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 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 AIR 5431 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.

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. AIR 5431 Phase 3 was subsequently removed from the Project of Concern list on 8 May 2018 with the criteria for removal met at contract award. In recognition that AIR 5431 Phase 3 will remain complex and require significant governance to ensure capability, cost and schedule risks are adequately managed; AIR 5431 Phase 3 will continue to be managed as a Project of Interest.

#### 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 risk 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.** AIR 5431 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 AIR 5431 Phase 3 **delivery of the scope of the MAA** have been disclosed, regardless of where they are managed.

During the reporting period, the risks identified for AIR 5431 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. While five risks have been retired or downgraded in severity, a number of existing risks remain, with new sources of risk emerging **or being managed**, identified in the following summary:

- 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) 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 FATS.
- 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 for PDR and Critical Design Review (CDR).
- CMATS system maturity and residual **PDR** technical debt.
- 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.
- Impact of delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2.
- 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.
- **Cost of transition of the Project's support services arrangement to Major Service Provider contract construct.**
- **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.**
- **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.**

The key issues impacting Airservices and Defence have remained relatively stable and continue to be actively managed, these include:

- 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.**
- The joint program has yet to finalise remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities. **However the first stage of this process, moving it to an online portal, brings with it the opportunity to use new tools to automate some configuration processes.**

#### 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 AIR5431PH3 to deliver its outcomes.**

AIR5431 Phase 2 – Fixed Base ATC Replacement Capability will replace the existing fixed base defence ATC surveillance radars. **AIR5431PH3 is highly reliant on AIR5431PH2 to deliver ATC surveillance capabilities at some sites**

#### 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>			
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
	Exchange Variation	3.5	
Jun 20	<b>Total Budget</b>	<b>975.6</b>	4
<b>Project Expenditure</b>			
Prior to Jul 19	Contract Expenditure - Airservices Australia	(223.8)	
	Contract Expenditure - Jacobs Australia - Integrated Support Contract	(27.1)	
	<b>Contract Expenditure - Jacobs Australia - Integrated Work Package</b>	(2.7)	
	Other Contract Payments/Internal Expenses	(10.8)	5
		(264.4)	
FY to Jun 20	Contract Expenditure - Airservices Australia	(48.1)	
	Contract Expenditure - Jacobs Australia - Integrated Work Package	(10.3)	
	<b>Contract Expenditure - BAE</b>	(6.2)	
	Other Contract Payments/Internal Expenses	(22.9)	5,6
		(87.5)	
Jun 20	<b>Total Expenditure</b>	<b>(351.9)</b>	
Jun 20	<b>Remaining Budget</b>	<b>623.7</b>	
<b>Notes</b>			
1	In addition to these direct project costs, Defence received approximately \$175m for Major Capital Facility costs and enabling ICT costs.		

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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 <b>have been</b> incorporated into Section 2.3 as each agreement <b>was</b> reached.
5	Other contract payments/internal expenses: Operating expenditure, contractors, minor contract expenditure and other capital expenditure not attributable to the listed contracts.
6	<b>Other Contract Payments in FY 19/20 include \$14.6m expenditure on Autotrac II Procurement with the remaining \$8.3m being other contract payments/internal expenses.</b>

## 2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
92.7	86.5	86.4	PBS - PAES: The variation is primarily due to re-negotiation of the payment schedule for the On-Supply Agreement with Air Services Australia, from 2019-20 into 2020-21 and 2021-22. PAES- Final Plan: <b>Nil Variation</b>
Variance \$m	(6.2)	(0.1)	Total Variance (\$m): <b>(6.3)</b>
Variance %	(6.7)	(0.1)	Total Variance (%): <b>(6.8)</b>

## 2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(11.3)	Australian Industry	The variation is due to payment of an additional On-Supply-Agreement invoice to Airservices (+\$12.4m). This is partly offset by a partial delivery (approximately \$0.2m of \$9.3m milestone) of Air-Ground-Air Transition Materials (-\$9.1m) and slippage in Air-Ground-Air contract milestones (-\$2.2m).
			Foreign Industry	
			Early Processes	
		12.4	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
86.4	87.5	1.1	<b>Total Variance</b>	
		1.3	<b>% Variance</b>	

## 2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 20 \$m			
Jacobs Australia – Integrated Support Contract	Dec 14	107.7	27.0	Variable	Modified ASDEFCON	1,2
Airservices Australia	Feb 18	521.0	538.1	Fixed	On Supply Agreement	1,3
Jacobs Australia – Integrated Work Package	Dec 18	47.0	47.0	Variable	Integrated Work Package	1,4
<b>BAE – Air-Ground-Air Communications Solution</b>	<b>Nov 19</b>	<b>67.4</b>	<b>67.1</b>	<b>Fixed</b>	<b>Support Contract Survey and Quote</b>	<b>1</b>
<b>Notes</b>						
1	Contract value as at <b>30 June 2020</b> is based on actual expenditure to <b>30 June 2020</b> 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. The agreed acquisition price of AUD \$521m was based on the agreed Airservices and Thales EUR exchange rate of 0.6722. <b>CCP4 was at Defence cost and increased the fixed price to \$538M. Note that for reporting purposes, the project continues to use the fixed price for consistency over reporting periods. However,</b> this is not consistent with the Department of Finance exchange rate <b>variances</b> . 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	Contract value is the estimated Project share of the Branch IWP contract and is based on the estimate of project expenditure for 8 x 6 monthly work packages to the end of December 2022.					

Contractor	Contracted Quantities as at		Scope	Notes
	Signature	30 Jun 20		
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.	
<b>BAE Systems</b>	<b>N/A</b>	<b>N/A</b>	<b>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).</b>	
<b>Major equipment accepted and quantities to 30 Jun 20</b>				
Nil.				
<b>Notes</b>				
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	<b>Dec 19</b>	<b>2</b>	2,3,4,5
Critical Design Rz	CMATS	Apr 20	<b>Sep 20</b>	<b>Sep 20</b>	<b>5</b>	2,3,4
<b>System requirements</b>	<b>Alternate Towers Via Airservices</b>	<b>Not yet in contract</b>				
<b>Notes</b>						
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	Dates for Preliminary Design and Critical Design are derived from the contract Delivery Schedule. The forecast dates are subject to revalidation during the Integrated Baseline Review to reflect implementation of the CMATS scope changes.					
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 intends to conduct separate Preliminary Design Review and Critical Design Review activities for each software release for Rz, R1 and R2. The table at 3.1 will continue to be updated to reflect the design stages as the project progresses through each software release.					
5	<b>Although the design review was exited in December 19. The plan to address the technical debt not completed at exit is due to be completed by August 2020.</b>					

#### 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	<b>Mar 22</b>	<b>Mar 22</b>	0	1
System Acceptance	SATC - CMATS	Jan 22	<b>Oct 22</b>	<b>Oct 22</b>	<b>8</b>	<b>3</b>
	RAAF Base East Sale - CMATS	May 22	<b>Jan 23</b>	<b>Jan 23</b>	<b>7</b>	
	RAAF Base Amberley - CMATS	Jun 22	<b>Feb 23</b>	<b>Feb 23</b>	<b>7</b>	
	RAAF Base Edinburgh - FATS	Jun 22	TBA	TBA	0	<b>1</b>
	RAAF Base Pearce - CMATS	Oct 22	<b>Jul 23</b>	<b>Jul 23</b>	<b>8</b>	<b>3</b>
	RAAF Base Gingin - FATS	Oct 22	TBA	TBA	0	<b>1</b>
	RAAF Base Tindal - CMATS	Nov 22	<b>Jul 23</b>	<b>Jul 23</b>	<b>7</b>	
	Army Aviation Centre Oakey - FATS	Nov 22	TBA	TBA	0	<b>1</b>
	RAAF Base Townsville - CMATS	Nov 23	<b>Sep 24</b>	<b>Sep 24</b>	<b>10</b>	<b>3</b>
Naval Air Station Nowra - CMATS	Mar 24	Nov 24	Nov 24	8	<b>3</b>	

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	RAAF Base Williamtown - CMATS	Apr 24	Oct 24	Oct 24	6	3
	RAAF Base Darwin - CMATS	Apr 24	Sep 24	Sep 24	5	3
	RAAF Base Richmond - FATS	May 24	TBA	TBA	0	1
Rz System Acceptance	CMATS	Aug 22	Mar 23	Mar 23	7	2
R1 System Acceptance	CMATS	Jul 24	Dec 24	Dec 24	6	
R2 System Acceptance	CMATS	Feb 25	Jul 25	Jul 25	6	
Final Acceptance	CMATS	Aug 25	Feb 26	Feb 26	6	

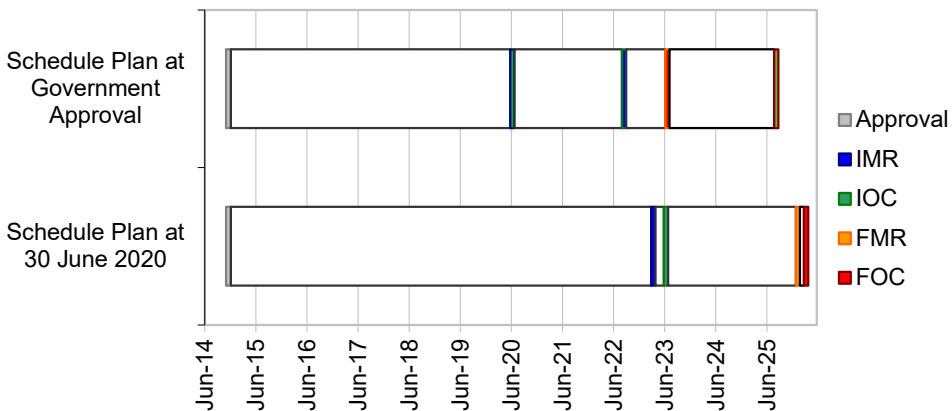
Notes						
1	The planned date was based on the original contract before these sites were descope from the Thales contract. Forecast dates are expected to be updated once the FATS agreement is in place with Airservices.					
2	Rz System Acceptance includes East Sale Tower and Approach (including the School of Air Traffic Control (SATC)), Amberley Tower and Approach including consolidated Oakey Approach and Edinburgh FATS Tower. The selected sites constitute the AIR 5431 Phase 3 IOC, as the combination of these sites demonstrates all possible system variants for Defence's portion of the CMATS system.					
3	The delay is due to the execution of Contract Change Proposal 2 in December 2018 which changed to schedule logic for the software builds post Release 1.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Aug 22	Mar 23	7	1
Initial Operational Capability (IOC)	Jun 20	Jun 23	36	2,3
Final Materiel Release (FMR)	Aug 25	Feb 26	6	1
Final Operational Capability (FOC)	Jun 23	Apr 26	33	2

Notes	
1	The IMR and FMR milestones reflect the advice provided to Government in Dec 19 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 difference 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 Feb 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. The additional delay during the reporting period 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.
3	IOC also includes Edinburgh FATS. No contract currently exists but the IOC date assumes that the delivery date will be no later than the other IOC sites.

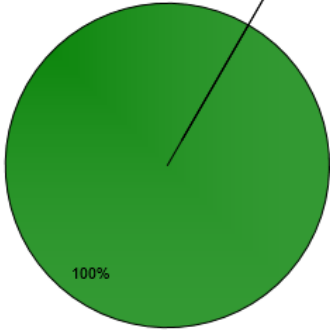
Schedule Status at 30 June 2020



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>100%</p>	<p><b>Green:</b> 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><b>Amber:</b> N/A</p> <p><b>Red:</b> 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)	Amberley, East Sale (including SATC) and Edinburgh transitioned from ADATS. Forecast achievement date <b>March 2023</b> .	Not yet achieved
Initial Operational Capability (IOC)	Amberley, East Sale, SATC and Edinburgh have been accepted into Operational service. Forecast achievement date <b>June 2023</b> .	Not yet achieved
Final Materiel Release (FMR)	Delivery of all CMATS material system elements configured to the final system build. Forecast achievement date <b>February 2026</b> .	Not yet achieved
Final Operational Capability (FOC)	All Defence Sites have been accepted into operational service. Forecast achievement date <b>April 2026</b> .	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.	<b>Although this risk was downgraded to medium in last year’s submission. The underlying risks have increased and are now being managed as a high risk. The project continues to conduct effective and regular engagement with service providers and suppliers, building confidence through working groups and configuration change boards. However, recent COVID-19 international and domestic restrictions are likely to affect this risk, particularly in relation to foreign sourced long lead time equipment and cross border travel for personnel for site based services.</b>
Delays to the Air Ground Air (AMACCS) transition solution, <b>which includes any modifications to existing gantries</b> , may result in the AGA <b>capability not available</b> to enable CMATS and FATS transition within the agreed contract schedule.	<b>Contract with BAE signed in Nov 19. 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.</b>
<b>There is a risk that the new digital radio interface may not be compatible with the current remote radios provided by Airservices.</b>	<b>The project is working with the System Program Office (SPO) to transition the remote radios to an IP based solution.</b>

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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. <b>This risk has now been downgraded to medium based on a greater understanding of the system design.</b>
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.	<b>This risk has been downgraded to Medium, through the mitigations below.</b> <b>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.</b> <b>Project resources have been identified / delegated to closely manage the requirements and AsA's delivery performance.</b>
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 <b>is working closely with Air Services in the requirements and contracts, has engaged additional resources to provide close engagement</b> of the FATS agreement development.
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.	<b>Although this risk was retired due to its specificity against the SDR milestone, the broader risk of underperformance remains at high</b>
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 Voice Communication Services and Airfield Management Services V&V activities in 2019, 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.
<b>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.</b>	<b>This risk has been downgraded to Medium, through the mitigations below.</b> <b>Technical Review Meeting (TRM) to verify and drive alignment</b> <b>Thales SoS Maturity Plan to ensure no gaps between FBL &amp; ABL and is confirmed by Internal System Reviews (ISR)</b> <b>Pursue alignment through PRM / TRM / IBR.</b>
<b>A lack of Defence and Airservices project resources may impact oversight of system design work as it relates to PDR technical debt and the Critical Design Review (CDR) milestone, and impact on system design.</b>	<b>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.</b>
CMATS system maturity and residual technical debt may impact the progression of the ABL through the PDR, CDR and Test Readiness Review (TRR) milestones, resulting in schedule impacts to Rz sites, with the potential for flow on effects to R1 and R2 implementation.	<b>Post PDR planning identified a need for the customer to focus on oversight and assurance of the system maturity profiles, areas of technical debt and reinforce Thales' role as the Prime System Integrator.</b>
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.	<b>A plan to satisfy the software design assurance objectives has been jointly developed between the Customer and Thales. This has resulted in a slippage to R1 of software requiring Assurance level 3.</b>

Thales' resource profile lacks flexibility and the necessary composition of skills to concurrently deliver the requirements for the CDR milestone, cater for ECPs and CCPs and any emergent scope should it arise. 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 the Thales Global Engineering Maturity Plan to consolidate transverse engineering activity and enhance consistency of artefacts.
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.	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.	<b>This risk has now been realised and is reported as an issue of section 5.2 in this PDSS.</b>
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 Major Service Provider contract, compared to the original Integrated Support Contract, may exceed the available budget, resulting in less support being provided or an increase in costs, leading to project delays or a requirement to seek additional funds.	The Project is monitoring the cost of resources within affordability constraints. Strategies to treat funding shortfalls might include a reduction in the joint support Defence provide to the Joint Project Team above the OSA requirement, a reduction in the oversight of supplier deliverables to free up resource availability and an increase to APS and ADF placements.
<b>Emergent Risks (risk not previously identified but has emerged during 2019-20)</b>	
<b>Description</b>	<b>Remedial Action</b>
N/A	

### 5.2 Major Project Issues

Description	Remedial Action
AIR 5431 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 <b>is now in contract</b> there is <b>still</b> uncertainty on the availability of new generation <b>radio</b> assets and viable fall-back options for ongoing delays in execution of the AGA transition contract with BAE.
<b>Delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2 has impacted development and transition into service of CMATS.</b>	<b>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 AIR5431PH2 is occurring to determine the best strategic way to manage this risk.</b>
The joint program has yet finalise remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities.	Additional configuration and data management resources have been brought on to support design and process reform. <b>The sharepoint site has now been uploaded to the cloud but the benefits of new configuration and workflow tools available has yet to be realised.</b>
<b>Note</b>	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

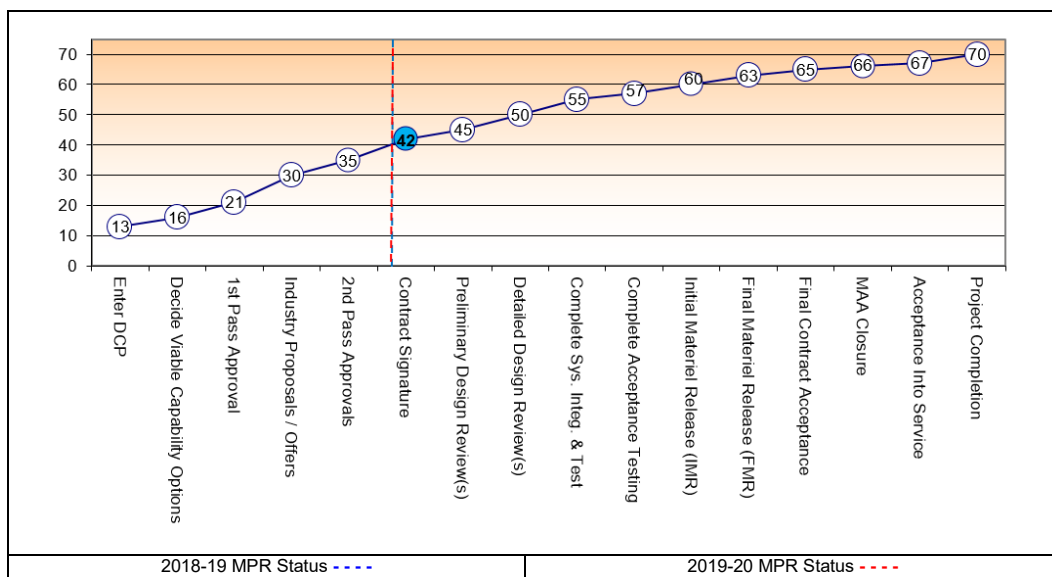
## Section 6 – Project Maturity

### 6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	6	6	6	6	42
Contract Signature	Project Status	5	6	6	6	6	6	6	41
	Explanation	<p><b>The project stage is currently contract signature as Defence is still in negotiations with Airservices on the requirements and support for the 4 Towers being delivered under separate contract.</b></p> <ul style="list-style-type: none"> <li>Schedule – Schedule confidence <b>of the CMATS components of the project</b> should increase after <b>all</b> Integrated Baseline Review <b>actions are complete. There is no current schedule for the 4 Towers being delivered by Airservices.</b></li> </ul>							

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## Section 7 – Lessons Learned

### 7.1 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 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 8 – Project Line Management

### 8.1 Project Line Management as at 30 Jun 2020

Position	Name
Division Head	Mr <b>Shane Fairweather</b>
Branch Head	AIRCDRE Phil Tammen
Project Director	GPCAPT Darren Spee
Project Manager	WGCDR Terry Atkinson

