Project Data Summary Sheet[158]

Project Number	**AIR5431 Phase 3**
Project Name	**Civil Military Air Traffic Management System (CMATS)**
First Year Reported in the MPR	2016-17
Capability Type	Replacement
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Nov 11
Government 2nd Pass Approval	Dec 14
Budget at 2nd Pass Approval	$731.4m
Total Approved Budget (Current)	**$974.5m**
2020-21 Budget	**$135.5m**
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

AIR5431 Phase 3 seeks to replace the current Fixed Base Defence Air Traffic Management and Control Systems at 12 Australian Defence Force (ADF) fixed base locations with a new harmonised system, referred to as the Civil Military Air Traffic Management System (CMATS). The CMATS component of AIR5431 Phase 3 is being conducted as a joint acquisition program with Airservices Australia (Airservices). New and refurbished control towers and approach centres, and upgraded network infrastructure, are being delivered under separately funded works through the Estate and Infrastructure Group, the Chief Information Officer Group and Air Force.

1.2 Current Status

Project Status
AIR5431 Phase 3 was removed from the Project of Concern list on May 2018 but remains a Project of Interest.

Cost Performance
In-year
In-year expenditure to **30 Jun 2021** is **$121.5m** against a budget of **$135.5m**. The variation is due to **delays in Air-Ground-Air Radios contract milestones ($4m), contractor delay on Site Preparation and Support Costs ($4m), less than forecast achievement on the On-Supply Agreement (OSA) prime contract ($4m), and less than forecast requirement for contracted workforce due to delays in the Thales schedule ($2m).**

Project Financial Assurance Statement
As at 30 June **2021**, project AIR5431 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial contractual obligations of Defence for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining, including contingency, for the project to complete against the agreed scope, noting currently unrealised risks carry some cost risk.

Contingency Statement
The project has not applied contingency in the financial year.

Schedule Performance
Thales continues to experience challenges in progressing parallel streams of work under the prime contract, which has been further affected by work impacts arising out of COVID workplace restrictions.

Thales was provided conditional approval to exit the Release Zero (Rz) Critical Design Review (CDR) in December 2020 with the signing a side deed with Airservices, which required the completion of identified deficiencies at a later date. CDR commencement was delayed due to a delay in the Preliminary Design Review (PDR) and the difficulty in completing all technical work required to exit the review. There will still be CDR design related work underway until early 2022 and this may impede the ability to commence test activities. The Support System review has been delayed to September 2021 as it is dependent on outputs from the CDR.

Work also continues on the Preliminary Design Review (PDR) for Release 1 (R1 batch 1), which was exited with minor outstanding items in June 2021, as well as the Detailed Design Review (DDR) arising out of the Contract Change Proposal (CCP) 5, which introduced the collaboration options of including Darwin and Townsville approaches into Brisbane Centre and Oakey Approach into Amberley, into the CMATS scope. Note that this DDR is not part of the contracted Major systems Reviews under the contract, but specific to CCP 5 scope only.

158 Notice to reader

Forecast dates and Sections: 1.2 (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.

Defence has agreed with Thales to limited early installation activities at a number of sites where the systems to be installed were assessed to be mature. Thales retains the risk of rework at these sites, should any design changes be identified in any remaining design work.

In December 2020 following a detailed schedule review, Thales declared delays to milestones on which IOC and FOC are based. Defence is still analysing the impact of these delays on the IOC and FOC schedule. The primary reasons for the delays were an underestimation of the complexity of the project and difficulties recruiting the required workforce. COVID-19 also contributed to declining schedule performance, due to state border restrictions, however the full impact is still being investigated.

In late 2020 Defence and Airservices, via the overarching On Supply Agreement, agreed on the final requirements of the alternate tower solution known as the Airservices Defence OneSKY Tower System (ADOTS). Airservices signed contracts with both SAAB and Frequentis who will deliver the Supplies to Defence.

Materiel Capability Delivery Performance

This program has not delivered any materiel capability to date. As a result of affordability constraints, Defence has accommodated a number of CMATS scope changes to deliver an equivalent capability more cost effectively. The most significant changes are:

- Airservices supplying alternative, non-CMATS Tower Air Traffic Management systems at four locations – Edinburgh, Richmond, Gingin and Oakey via separate contractor;
- Relocating Darwin and Townsville Approach from Darwin and Townsville to the Airservices Approach Centre in Brisbane; and
- Relocating Oakey approach from Oakey to Amberley.

The majority of changes to the CMATS contract with Thales to affect the above changes have now been signed by the contractor. Thales is still finalising flow down of these changes to all of its subcontractors.

Related Materiel Capability is also being managed by Defence and delivered by BAE Systems Australia for the Air Ground Air (AGA) transition solution, Raytheon for the ADATS life-of-type extension and Defence site preparation and support. Delivery of materiel capability associated with these procurements are delivered outside the On-Supply Agreement.

Note

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

1.3 Project Context

Background

AIR5431 Phase 3 will acquire a fixed Air Traffic Management (ATM) system to replace the existing Australian Defence Air Traffic System (ADATS) capability (Tower and Approach Centres) at 12 ADF fixed base locations, and a simulator system for the School of Air Traffic Control (SATC). Defence is procuring for its replacement ATM capability under AIR5431 Phase 3, a common Civil Military Air Traffic management and control System (CMATS) through a joint acquisition and support program with Airservices, also referred to as OneSKY Australia (OneSKY).

Beyond the joint CMATS procurement, Defence is also acquiring elements necessary for successful integration of the CMATS into the broader Defence ATM system.

The strategic objectives of Airservices and Defence for the CMATS program include:

- To harmonise Australia's civil and military air traffic management systems so as to deliver improvements in safety, efficiency, flexibility, economy and business continuity and accords with the Australian Government's policy to maximise the efficiency of Australian airspace through increased cooperation and collaboration between Airservices and Defence; and
- To successfully acquire, transition, support and operate the CMATS across Australia's national airspace and every major civil and military aerodrome in Australia within agreed schedule, cost and performance constraints.

Consistent with the Government's 2013 Policy for Aviation, Defence will work jointly with Airservices as the lead agency for the CMATS, to establish a harmonised national air traffic system.

AIR5431 Phase 3 achieved First Pass approval in November 2011 as part of a combined project with AIR5431 Phase 2, which included combined Defence Capability Plan (DCP) capital and Net Personnel and Operating Costs (NPOC) provisions. The Project Initial Review Board (PIRB) held in November 2013, subsequently directed AIR5431 Phase 2 and Phase 3 be presented to government as separate projects, which was noted by the Minister for Defence in March 2014. The revised DCP 2014 included AIR5431 Phase 2 and Phase 3 as separate projects. A PIRB held April 2014 agreed to seek Second Pass for AIR5431 Phase 3 in December 2014, vice March 2015, to better align with Airservices' project approval timeline and to mitigate the identified Defence risks with the delivery of associated facilities and communications projects.

AIR5431 Phase 3 achieved Second Pass approval in December 2014 on the basis of tender agnostic capability, schedule and cost data provisioned by Airservices in the form of a Not-to-Exceed (NTE) price for the Defence share of the common and Defence unique elements of the CMATS. After a period of complex negotiations, AIR5431 Phase 3 formally returned to Government in February 2018 and was granted a real cost increase (RCI) of $243.0m (including contingency) to cover additional CMATS costs, a transition radio solution (AMACCS), Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation. Approval of the RCI for AIR5431 Phase 3 included a requirement that Defence provide 6 monthly updates to Government.

The CMATS offer and negotiation process was protracted, primarily due to the difficulties experienced by Thales in producing an acceptable offer that represented value for money for Defence and Airservices, an underestimation of the time required to settle the requirements, total cost and cost attribution of a harmonised capability and alignment of customer approval processes through two separate governance structures. Notwithstanding, Airservices signed both acquisition and support contracts with Thales in February 2018.

The joint civil-military acquisition originally intended to procure a principally commercial off-the-shelf (or military off-the-shelf) system; however, the only compliant and viable solutions tendered all required significant development and integration effort to deliver the specified capability. Furthermore, there were no similar civil-military Air Traffic Management systems fielded elsewhere in the world. Due to this, Thales priced a large portion of risk into the fixed price offer to cover uncertainty in software development and site implementation. To better manage this risk, Airservices and Thales agreed to move from a Fixed Price to a Target Price Incentive contract, in order to incentivise Thales to deliver the capability at the lowest price possible. Defence is not subject to the risks or benefits associated with the Target Price Incentive arrangement. The Target Price Incentive model, along with improved relational governance arrangements, provide Defence and Airservices stakeholders confidence that challenges presented during contract execution can be overcome collaboratively through transparency of technical, schedule and cost risk between the parties.

Airservices' management of the contracts with Thales and on-supply to Defence will be governed by an On-Supply Agreement (OSA) executed in February 2018. In addition to defining the on-supply to Defence of the Defence supplies and services delivered to Airservices by Thales, the OSA is underpinned by a principles-based governance framework, aligned to that established between Airservices and Thales for the CMATS acquisition and support contracts.

The CMATS program organisation is structured to ensure Defence provides an equitable contribution towards the delivery of the CMATS. This is achieved through the implementation of a Joint Program Team consisting of both Airservices and Defence subject matter experts, a CMATS Review Group (CRG), consisting of Defence and Airservices senior representatives, and higher level forums above the CRG consisting of the Program Sponsors including CEO Airservices, Chief of Air Force and Deputy Secretary CASG. Whilst the parties have opted for a lead agency construct, the organisation is underpinned by embedded staff and decision-makers to assure that both parties' interests and requirements are addressed in terms of management of the project. However, the dual sponsorship, and the governance and stakeholder management that arises, does lead to challenges where there is a variation between the timelines of approval or organisational direction.

On 18 August 2017, the Ministers for Defence and Defence Industry announced this project as a Project of Concern **based on the Project's difficulties in finalising negotiations with Thales as well as concerns over cost and schedule risk**. AIR5431 Phase 3 was subsequently removed from the Project of Concern list on 8 May 2018 **as a result of the contract being signed in February 2018**. In recognition that AIR5431 Phase 3 will remain complex and require significant governance to ensure capability, cost and schedule risks are adequately managed, AIR5431 Phase 3 will continue to be managed as a Project of Interest **with six monthly updates to Government**.

Uniqueness

CMATS represents the first time that a Defence project is contributing to a major national infrastructure project. The December 2009 National Aviation White Paper identified the need to implement a harmonised national civil and military air traffic management system. The activities identified in the White Paper for the implementation of a comprehensive, collaborative approach to nation-wide air traffic management included the procurement of a single solution air traffic management (ATM) platform between civil and military agencies.

At the time of decision to enter into a joint project arrangement there was no history of a similar governance structure in operation that aligned with the scope of this project. As a consequence, Airservices and Defence have established and continued to refine the CMATS joint delivery structure without the benefit of adapting from proven existing models.

Major Risks and Issues

While both organisations have risk policy and practices in place, Airservices and Defence manage risk separately in accordance with their respective risk management frameworks. The CMATS joint program risk register is maintained and managed by Airservices on behalf of the CMATS program and considers risks that may collectively impact both Defence and Airservices. The joint project risks and issues (those that affect the risks and obligations Airservices and Defence jointly share under the On-Supply Agreement) are managed using the Airservices risk matrix. AIR5431 Phase 3 operates a separate risk register for Defence specific/unique risks and issues, such as resourcing and delivery of items to the joint project. All major risks that have an impact on AIR5431 Phase 3 delivery of the scope of the Materiel Acquisition Agreement (MAA) have been disclosed, regardless of where they are managed.

During the reporting period, the risks identified for AIR5431 Phase 3 and the CMATS joint program have shifted as a result of progress through the system design milestones and a maturing of the agreed Defence scope changes. **The following risks remain under management:**

- Consolidation of approach services into Amberley approach centre and removal of four Defence towers from CMATS scope in absence of detailed definition and planning.
- Delays to the procurement of the Air Ground Air Transition (AGAT) solution may result in insufficient radio assets to enable CMATS and Four Alternate Tower Solution (FATS/**ADOTS**) transition within the agreed contract schedule.
- Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues.
- Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources for the **ADOTS**.
- The functional availability of external Defence delivered systems on CMATS implementation within the Defence ATM environment.
- Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW.
- Inadequate levels of appropriately trained Verification and Validation (V&V) personnel to support V&V activities.
- Availability of the Joint Software Support Facility in time for Rz system of systems readiness demonstration for Rz transition.
- Delayed delivery of the Support System Specification (SSS).
- Insufficient Defence and Airservices project resources to oversight system design work.
- CMATS system maturity and residual **CDR technical work to be completed**.
- Alignment of the maturity-based engineering approach with the software design model and design assurance activities.
- Composition and flexibility of Thales' resource profile.
- Onerous, long-term and ongoing travel obligations associated with site acceptance integration and verification activities.
- If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose.
- Poor provision of Customer Furnished Materials, Supplies and Services including non-compliance of, deficiencies in, or unavailability of CIOG and E&IG infrastructure and networks, will result in the customer impacting the contracted schedule.

- 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 **due to the requirement to have data from those radars available to the CMATS system prior to on site testing**.
- **Sustained COVID-19 international and domestic restrictions are impacting Thales productivity and their ability to bring specialist resources into country.**

Other Current Related Projects/Phases

AIR5431 Phase 1 – Deployable Air Traffic Control (ATC) Capability will introduce Deployable Air Traffic Management (ATM) command and control systems into the ADF inventory. This phase has no impact on the ability of AIR5431 Phase 3 to deliver its outcomes.

AIR5431 Phase 2 – Fixed Base ATC Replacement Capability will replace the existing fixed base defence ATC surveillance radars. AIR5431 Phase 3 is highly reliant on AIR5431 Phase 2 to deliver ATC surveillance capabilities at some sites.

Note

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Dec 14	Original Approved (Second Pass Approval)		731.4	1
Dec 17	Real Variation – Budgetary Adjustment		(6.8)	2
Feb 18	Real Variation – Real Cost Increase		247.5	3
Jun 21	Exchange Variation		2.4	
Jun 21	**Total Budget**		974.5	4
	Project Expenditure			
Prior to Jul 20	Contract Expenditure - Airservices Australia	(213.4)		
	Contract Expenditure - Jacobs Australia - Integrated Support Contract	(27.0)		
	Contract Expenditure - Jacobs Australia - Integrated Work Package	(8.1)		
	Contract Expenditure - BAE	(15.2)		
	Other Contract Payments/Internal Expenses	(34.5)		5
			(298.2)	
FY to Jun 21	Contract Expenditure - Airservices Australia	(73.4)		
	Contract Expenditure - Jacobs Australia - Integrated Work Package	(12.9)		
	Contract Expenditure - BAE	(27.5)		
	Other Contract Payments/Internal Expenses	(7.8)		6
			(121.6)	
Jun 21	**Total Expenditure**		(419.9)	
Jun 21	**Remaining Budget**		554.6	

Notes

1	In addition to these direct project costs, Defence received approximately $175m for Major Capital Facility costs and enabling ICT costs.
2	This variation is due to administrative decisions to temporarily harvest funds from the project. These funds were returned to the project as part of the RCI approved in February 2018. These funds were part of the original Second Pass approval budget.
3	A RCI of $249.7m was approved by Government in February 2018 to cover additional costs related to the acquisition. This includes $2.2m for Air Force to relocate the current Tindal Australian Military Airspace Control Communications System (AMACCS) air traffic control radio equipment site, leaving $247.5m for CASG related costs (additional CMATS costs, AGAT radio solution, Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation). This figure includes the $6.8m returned to the project to correct the Budgetary Adjustment which occurred in December 2017. Given this, the total approved RCI above Second Pass approval is $242.9m including the $2.2m for Air Force.
4	The total budget included planned expenditure for the Air Ground Air Transition Solution, ADATS life-of-type extension and Defence site preparation and support. These procurements have been incorporated into Section 2.3 as each agreement was reached.

5	Other contract payments/internal expenses **to 30 Jun 2020 include $16.3m expenditure on Autotrac II with the remainder being** Operating expenditure, contractors, minor contract expenditure and other capital expenditure not attributable to the listed contracts.
6	Other Contract Payments in FY **20/21** include **$5.7m expenditure on site preparation, $1.7m** on Autotrac II Procurement **and the remaining $0.4m** being other contract payments/internal expenses.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
93.7	**136.3**	**135.5**	PBS - PAES: The variation is primarily due to **a change in the phasing of expected On-Supply Agreement costs with Airservices Australia.** PAES - Final Plan: **Exchange Rate** Variation
Variance $m	**42.6**	**(0.8)**	Total Variance ($m): **41.8**
Variance %	**(45.5)**	**(0.6)**	Total Variance (%): **44.6**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		13.9	Australian Industry	**The variation is due to slippage in Air-Ground-Air Radios contract milestones ($4m), contractor delay on Site Preparation and Support Costs ($4m), less than forecast achievement on the OSA prime contract ($4m), and less than forecast requirement for contracted workforce due to delays in the Thales schedule ($2m).**
			Foreign Industry	
			Early Processes	
		0.1	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
135.5	**121.5**	**14.0**	**Total Variance**	
		10.3	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 21 $m			
Jacobs Australia – Integrated Support Contract	Dec 14	107.7	27.0	Variable	Modified Standard Defence Contract	1,2
Airservices Australia	Feb 18	521.0	**551.4**	Fixed	On Supply Agreement	1,3
Jacobs Australia – Integrated Work Package	Dec 18	47.0	**78.9**	Variable	Integrated Work Package	1,4
BAE – Air-Ground-Air Communications Solution	Nov 19	67.4	**67.2**	Fixed	Support Contract Survey and Quote	1

Notes

1	Contract value as at 30 June 2021 is based on actual expenditure to 30 June 2021 and remaining commitment at current budgeted exchange rates, and includes adjustments for indexation (where applicable).
2	This contract is closed following the transition to a Branch wide Integrated Work Package (IWP) contract.
3	CMATS will be procured via the Contracts (Acquisition) and (Support) between Airservices and Thales. Airservices manages both Contracts with Thales on behalf of Defence through the OSA. Due to exchange rate variance, the addition of Defence approved scope and the inclusion of Contract (Support), the price of the OSA will increase over time.
4	**The project workforce structure is based on the CASG First Principles Review with 80% of the project staff being delivered under the IWP contract.** Contract value is the estimated Project share of the Branch IWP contract and is based on the estimate of project expenditure for **10** x 6 monthly work packages to the end of December **2023. The increase in contract price from the original is not a reflection on Jacobs' contract performance. It is mainly due to a combination of the increase in length of the project due to delays by Thales, and the incremental strategy in CDRL delivery and the increase in resources required to support the extra parallel activities as a result of the aggressive schedule Thales adopted.**

Contractor	Contracted Quantities as at		Scope	Notes
	Signature	30 Jun 21		
Jacobs Australia	N/A	N/A	Service based integrated support.	

Airservices Australia	N/A	N/A	Through the OSA, delivery of CMATS control tower and approach centres at Amberley (including Oakey approach), East Sale, Williamtown, Tindal and Nowra, consolidated Darwin and Townsville approach services at Airservices Brisbane approach centre, CMATS control towers at Darwin, Townsville and Pearce and a simulator system at SATC.	1
Jacobs Australia	N/A	N/A	Serviced based integrated work package.	
BAE Systems	N/A	N/A	Procurement, design, integration and installation of a new Air Ground Air Communications system across the twelve Defence Sites. This includes the procurement and integration of radio communications equipment that will replace the existing AMAAC System (currently sustained by BAE).	

Major equipment accepted and quantities to 30 Jun 20

Nil.

Notes

1	This was a result of revised schedule Control tower systems for Oakey, Gingin, Richmond and Edinburgh (also referred to as the Four Alternate Tower Solution (FATS)) will be delivered within the agreed fixed-price cap of $521.0m. The obligation for Airservices to provide FATS was established through the OSA signed 22 February 2018. The FATS Statement of Work and Functional Performance Specification are the subject of negotiations between Defence and Airservices.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	CMATS System Requirements Analysis	Aug 17	N/A	Jan 18	5	1
Preliminary Design Rz	CMATS	Oct 19	N/A	Dec 19	2	3, 5
Critical Design Rz	CMATS	Apr 20	Sep 20	**Dec 20**	**8**	3,**6**
Design Release Baseline Review Rz batch 1	**CMATS**	**Apr 21**	**Jun 21**	**Jun 21**	**2**	**9,6**
Support System Critical Design Review Rz	**CMATS**	**Apr 20**	**Jun 21**	**Sep 21**	**17**	
Preliminary Design Review R1 final	**CMATS**	**Jan 22**	**Mar 22**	**TBA**	**2**	**4,10**
Critical Design Review R1	**CMATS**	**Sep 22**	**Jan 23**	**TBA**	**4**	**4,10**
Preliminary Design Review R2	**CMATS**	**Jun 23**	**Nov 23**	**TBA**	**5**	**4,10**
Critical Design Review R2	**CMATS**	**Feb 24**	**Jul 24**	**TBA**	**5**	**4,10**
System requirements	Alternate Towers Via Airservices	not yet **agreed**				**7**

Notes

1	Airservices entered into contact with Thales for the acquisition of the CMATS in February 2018; System Requirements Analysis was achieved later than expected due to an underestimation of the effort required to develop the Functional Baseline.
2	**Not used**
3	Rz is the initial Defence system build for the first five Defences sites and represents the minimum software functionality for safe air traffic services at Defence sites. R1 is a software release that represents the minimum functionality required for Airservices to operate Brisbane and Melbourne Air Traffic Centres. R2 is a software release that represents the full CMATS functionality.
4	**Thales is currently conducting a significant schedule replan of the CMATS deliverables. This will also affect the timing of when the ADOTS sites can be delivered. The project expects this replan to be complete by November 2021 and the project will then update this table. The variance column has been retained to track the last reported variances**
5	Although the design review was exited in December **2019,a number of technical issues were not resolved but were** due to be completed by August 2020. **This was not achieved and the issues rolled into CDR activities.**
6	**CMATS CDR was exited with a number of significant deficiencies. These are being managed through a new process called a design release baseline review (DRBR). DRBR was completed in June 2021 but the specifications at DRBR still require updating to meet the entry criteria for Test Readiness Review (TRR) Rz.**

7	**Airservices signed contracts with SAAB and Frequentis in December 2020, These contractors have yet to provide a schedule for the system engineering milestones for ADOTS that can be agreed by the customer**
8	**Not used.**
9	**This milestone is not part of the original contract milestones and is specific to the Deed negotiated with Thales to complete the significant number of outstanding actions arising from CDR Rz. However, the DRBR in June 2021 was for an interim Specification and did not meet the entry criteria for entry into TRR Rz.**
10	**Thales have provided schedule analysis for dates associated with IMR, IOC, FMR and FOC, based on a 90% probability of achieving those dates. These Intermediate milestones have not yet been through that process and will need to be updated when that information is available.**

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved / Forecast	Variance (Months)	Notes
Rz System verification	CMATS	N/A	Mar 22	**TBA**	0	
System Acceptance	SATC - CMATS	Jan 22	Oct 22	**TBA**	8	**4**
	RAAF Base East Sale - CMATS	May 22	Jan 23	**TBA**	7	**4**
	RAAF Base Amberley - CMATS	Jun 22	Feb 23	**TBA**	7	**4**
	RAAF Base Edinburgh - FATS	Jun 22	TBA	TBA	0	1,**4**
	RAAF Base Pearce - CMATS	Oct 22	Jul 23	**TBA**	8	**4**
	RAAF Base Gingin - FATS	Oct 22	TBA	TBA	0	1
	RAAF Base Tindal - CMATS	Nov 22	Jul 23	**TBA**	7	4
	Army Aviation Centre Oakey - FATS	Nov 22	TBA	TBA	0	1,**4**
	RAAF Base Townsville - CMATS	Nov 23	Sep 24	**TBA**	10	4
	Naval Air Station Nowra - CMATS	Mar 24	Nov 24	**TBA**	8	4
	RAAF Base Williamtown - CMATS	Apr 24	Oct 24	**TBA**	6	4
	RAAF Base Darwin - CMATS	Apr 24	Sep 24	**TBA**	5	4
	RAAF Base Richmond - FATS	May 24	TBA	TBA	0	1
Rz System Acceptance	CMATS	Aug 22	Mar 23	**TBA**	7	2
R1 System Acceptance	CMATS	Jul 24	Dec 24	**TBA**	6	**4**
R2 System Acceptance	CMATS	Feb 25	Jul 25	**TBA**	6	**4**
Final Acceptance	CMATS	Aug 25	Feb 26	**TBA**	6	**4**

Notes

1	The planned date was based on the original contract before these sites were de-scoped from the Thales contract. Forecast dates are expected to be updated once the **ADOTS schedules have been agreed**
2	Rz System Acceptance includes East Sale Tower and Approach (including the School of Air Traffic Control (SATC)), Amberley Tower and Approach including consolidated Oakey Approach and Edinburgh **ADOTS** Tower. The selected sites constitute the AIR5431 Phase 3 IOC, as the combination of these sites demonstrates all possible system variants for Defence's portion of the CMATS system.
3	**Not used.**
4	**Thales is currently conducting a significant schedule replan of the CMATS deliverables. This will also affect the timing of when the ADOTS sites can be delivered. The project expects this replan to be complete by November 2021 and the project will then update this table. The variance column has been retained to track the last reported variances**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

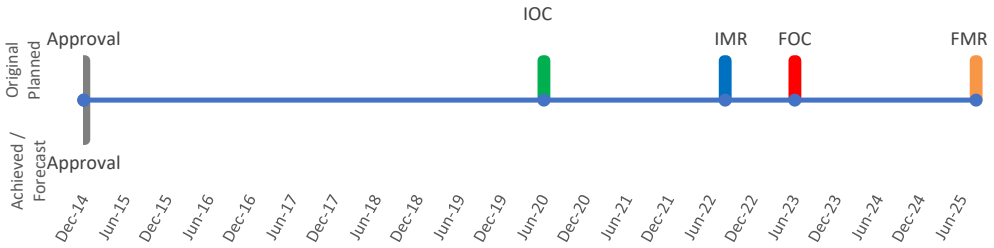
Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Aug 22	**TBA**	7	1,**4**
Initial Operational Capability (IOC)	Jun 20	**TBA**	**48**	2,3,**4**
Final Materiel Release (FMR)	Aug 25	**TBA**	6	1,**4**
Final Operational Capability (FOC)	Jun 23	**TBA**	**46**	2.**4**

Notes

1	The IMR and FMR milestones reflect the advice provided to Government in December 2019 and are included in MAAv3. The timing between IMR to IOC and FMR to FOC are constant. The apparent differences in variance between IMR/IOC and FMR/FOC is the result of using a different basis for the original date. The original date for IOC/FOC is the tender documentation whereas the original date used for IMR/FMR is the February 2018 Thales contract date for those milestones. The IMR/FMR dates are only for the Thales contract.

2	The initial delay to IOC and FOC is due to a protracted period of complex negotiations between the customer and Thales. Previously reported delay to IOC and FOC against the original planned dates were 29 and 28 months respectively. Additional delay **was reported** during the **last** reporting period **and** was 7.2 months to IOC and 6 months to FOC. The IOC slippage was due to delays in executing, and additional design work resulting from, CCPs 4 and 5. The slippage of FOC was due to the incorporation of additional system automation requirements arising from CCP2. **In December 2020, Thales announced additional delays which are likely to delay the IOC and FOC milestones further; the implications to IOC/FOC remain under analysis by Defence.**
3	IOC also includes RAAF Base Edinburgh **ADOTS**. **There is no firm date for RAAF Base Edinburgh delivery.** The IOC date assumes that the delivery date will be no later than the other IOC sites.
4	**Thales is currently conducting a significant schedule replan of the CMATS deliverables. This will also affect the timing of when the ADOTS sites can be delivered. The project expects this replan to be complete by November 2021 and the project will then update this table. The variance column has been retained to track the last reported variances**

Schedule Status at 30 June 2021



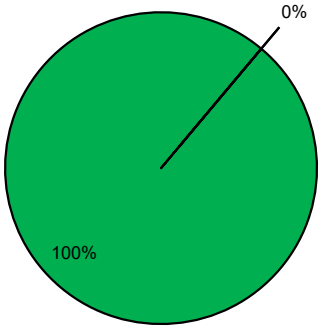
Notes

Forecast dates in Section 3 are excluded from the scope of the Auditor-General's Independent Assurance Report.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green: The project 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.

Amber:
N/A

Red:
N/A

Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the Auditor-General's Independent Assurance Report.

4.2 Constitution of Materiel Release and Operational Capability Milestones

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Amberley, East Sale (including SATC) and Edinburgh transitioned from ADATS. Forecast achievement date March 2023.	Not yet achieved
Initial Operational Capability (IOC)	Amberley, East Sale, SATC and Edinburgh have been accepted into Operational service. Forecast achievement date June 2023.	Not yet achieved

Final Materiel Release (FMR)	Delivery of all CMATS material system elements configured to the final system build. Forecast achievement date February 2026.	Not yet achieved
Final Operational Capability (FOC)	All Defence Sites have been accepted into operational service. Forecast achievement date April 2026.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Poor provision of Customer Furnished Materials, Supplies and Services including non-compliance of, deficiencies in, or unavailability of CIOG and E&IG infrastructure and networks, will result in the customer impacting the contracted schedule.	The project continues to conduct effective and regular engagement with service providers and suppliers, building confidence through working groups and configuration change boards. However, **sustained** COVID-19 international and domestic restrictions are likely to **continue to** affect this risk, particularly in relation to foreign sourced long lead time equipment and cross border travel for personnel for site based services.
Delays to the Air Ground Air (AMACCS) transition solution, which includes any modifications to existing gantries, may result in the AGA capability not available to enable CMATS and FATS transition within the agreed contract schedule.	Contract with BAE signed in November 2019. Strategies such as progressive delivery and concurrent build, installation and testing are being considered to meet site schedule constraints. However, now site work has started, this has exposed some additional issues that affect this risk area.
There is a risk that the new digital radio interface may not be compatible with the current remote radios provided by Airservices.	The project is working with the System Program Office (SPO) to transition the remote radios to an IP based solution.
Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues.	Implement recommendations articulated in the plan developed by the INFOSEC Registered Assessors Program (IRAP) assessor, outcomes from this activity will be input into the joint security working group to develop the CMATS accreditation plan. This risk has now been downgraded to medium based on a greater understanding of the system design.
Agreement to consolidate Darwin and Townsville approach services into the Airservices Brisbane approach centre, Oakey approach services into Amberley and removal of four Defence towers (Richmond, Edinburgh, Gingin and Oakey) from CMATS scope in absence of detailed definition and planning creates dependency complexity.	This risk has been downgraded to Medium, through the mitigations below. Ensure that no extant rights and protections are watered down through subsequent variations to the OSA. And ensure the Defence team understand how the OSA applies to their role and the work they do Ensure that CMATS ECPs, subsequent FATS agreement and other requirements/scope (outside of CMATS) are clearly articulated and agreed to obligate Thales/AsA to deliver CCP5 signed and initial engineering work commenced on the changes to the extant design. Project resources have been identified / delegated to closely manage the requirements and AsA's delivery performance.
Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources, may impact the delivery of the Four Alternate Tower Solution (FATS) at Richmond, Edinburgh, Gingin and Oakey.	Defence is working closely with Airservices in the requirements and contracts **and** has engaged additional resources to provide **closer** engagement.
Implementation of CMATS within the Defence ATM environment may be impacted by the functional availability of external Defence delivered systems, potentially limiting the ability of the Defence portion of the ATM solution to meet regulatory and licencing requirements.	Air Force are engaged through the Stakeholder Working Group (SWG) to analyse each function end-to-end to establish those systems that don't meet the availability requirements and identify possible mitigation options for shortfalls.
Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW, this may lead to schedule delay and cost transfer from Thales to the customer.	Defence are closely monitoring the CMATS design process to raise areas of concern early, as well as ensure the Systems Engineering Management Plan includes customer constraints.
An inadequate level of appropriately trained personnel to support V&V activities, may lead to system acceptance of test results non-compliant with JFPS requirements, resulting in delays and rework.	Action is being taken to source additional resources through the Major Service Provider (Jacobs) and suitable courses identified to ensure personnel are trained in the conduct of V&V activities.
The Joint Software Support Facility may not be available or operationally effective in time for demonstrating Rz system of systems readiness for Rz transition, this may cause delays to commissioning at Rz sites.	This risk is being addressed via a provisional acceptance process through each functional baseline validation and regression testing. Identification of alternate acceptance strategies for Defence sites may be required.

Delivery of the Support System Specification (SSS) has been delayed; this is a key product for the determining the Allocated Baseline (ABL) for CDR and may result in schedule delays to the SSCDR deliverables that influence the support system design.	This risk has been downgraded to Medium, through the mitigations below. Technical Review Meeting (TRM) to verify and drive alignment Thales SoS Maturity Plan to ensure no gaps between FBL & ABL and is confirmed by Internal System Reviews (ISR) Pursue alignment through PRM / TRM / IBR.
A lack of Defence and Airservices project resources may impact oversight of system design work as it relates to PDR **unresolved technical issues** and the Critical Design Review (CDR) milestone, and impact on system design.	Improvement in the Joint project organisational structure, and resource allocation to work packages, to enhance flexibility within the CMATS program, which have been tailored to focus on strategic elements against maturity goals.
CMATS system maturity and **outstanding technical activities not yet resolved** may impact the progression of the ABL through the PDR, CDR and Test Readiness Review (TRR) milestones, resulting in schedule impacts to Rz sites, with the potential for flow on effects to R1 and R2 implementation.	Post PDR planning identified a need for the customer to focus on oversight and assurance of the system maturity profiles, areas of **outstanding technical activities not yet resolved** and reinforce Thales' role as the Prime System Integrator.
The maturity-based engineering approach adopted for CMATS requirements analysis may not align with the software design model and design assurance activities prescribed by the relevant industry standard.	A plan to satisfy the software design assurance objectives has been jointly developed between the Customer and Thales.
Thales' resource profile lacks flexibility and the necessary composition of skills to concurrently deliver the requirements for the **Mandated System Review** milestones **and** cater for ECPs and CCPs. This risk is compounded by staff turnover, leading to productivity inefficiencies and potential schedule delay.	Ongoing monitoring of Thales' progress to address resourcing composition is occurring through the Program Review Board. Independently, Thales are implementing **an aggressive recruitment and retention activity to address the high staff turnover/ staff shortages.**
Site acceptance and the quality of site integration and verification activities, may be impacted by a requirement to support onerous, long-term and ongoing travel obligations. **State based COVID-19 restrictions may also impact these activities.**	Strategies that focus on the recruitment of suitably skilled resources within proximity of each sites is being undertaken.
Delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2 may impact development and transition into service of CMATS.	This risk has now been realised and is reported as an issue of section 5.2 in this PDSS.
If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose.	Defence teams will undertake conformance checks between key documents, and specifically assess the service delivered over interfaces as part of the test and evaluation program prior to final delivery.
The increased cost of the **project** Major Service Provider **resources supporting testing and the introduction into service of new systems as a result of potential delays to the Thales delivery schedule.**	**Project to on board resources at timings which align as far as possible with revised Thales schedules to minimise any additional costs**
Sustained COVID-19 international and domestic restrictions are impacting Thales productivity and their ability to bring specialist resources into country with a potential consequence of schedule delays.	**Thales have commenced a recruitment campaign to recruit the additional resources and are reporting regularly to the Joint Project Team on its progress towards its goals.**
Emergent Risks (risk not previously identified but has emerged during 2020-21	
Description	Remedial Action
N/A	

5.2 Major Project Issues

Description	Remedial Action
AIR5431 Phase 3 is unable to introduce CMATS into service without impacting current operations due to insufficient dependent AMACCS system assets.	While the Air Ground Air (AGA) transition solution is now in contract there is still uncertainty on the availability of new generation radio assets and viable fall-back options for ongoing delays in execution of the AGA transition contract with BAE.
Delays to the delivery of the Fixed Base Radar system under AIR5431 Phase 2 has impacted development and transition into service of CMATS **due to the need to have sensor data from those radars available for interface testing prior to CMATS installation at sites.**	Alternate sources of radar data required to enable CMATS design, test and evaluation and verification and validation activities are being investigated. Options for live data sources to support operations are also being considered. Close coordination with AIR5431 Phase 2 is occurring to determine the best strategic way to manage this risk.
Premature exit of the Critical Design Review with major deficiencies in the Release Zero Design still to be addressed.	**The lead agency, Airservices Australia, have accepted the risks and liabilities of the decision to exit Critical Design Review with major deficiencies in the Release Zero design still to be addressed.**

The increased cost of the project Major Service Provider resources supporting testing and the introduction into service of new systems as a result of potential delays to the Thales delivery schedule.	**Project to effectively on-board resources at timings which align as far as possible with revised Thales schedules to minimise any additional costs. However, as noted in Section 2.3, Note 4, the likely cost of this issue would put it into the high to extreme category**
The joint program has not yet finalised remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities.	**This risk has been retired now that Airservices have completed the transition to SharePoint and it is now the system in use for managing data and correspondence.**
Note	
Major risks and issues in Section 5 are excluded from the scope of the Auditor-General's Independent Assurance Report.	

Section 6 – Lessons Learned

6.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Set up the Governance structure earlier in the process – the decision regarding lead agency and harmonisation was determined at a strategic level without detailed analysis of the nuances between the two organisations. Although there is now a robust governance structure in place, there are still areas of disunity that are now difficult to change.	Governance
Better communication with Stakeholders - although the establishment of joint project was at the direction of a harmonisation initiative of the Government, the joint project has been slow to re-engage with stakeholders, up to and including Government, to seek refined direction based on prevailing and emerging risks and issues.	Contract management/Governance
A lack of resources at the initiation stage of the project, and during the preparation of the Request For Tender, can create a significant technical and stakeholder management debt that will affect the ability to agree on requirements, forecast a realistic schedule and determine future workforce requirements.	Resourcing
Whilst waiting to initiate dependant projects (i.e. facilities) 'just in time' increases the risk of delays to the delivery of the prime mission system, starting dependant projects too early can result in them being delivered so far in advance of the prime mission system, that the outputs of the dependant project no longer satisfy the 'evolved' mission system intent.	Schedule Management
As a result of long-running schedule maturity issues, it is recommended that long-term planning beyond the nearest major milestone is essential to reducing program risk and sub-optimal short-term planning, and furthermore schedule logic applied to the Contract Master Schedule (CMS) must reflect the logic identified in the contract to ensure activities are sequenced according to precedence and priority.	Schedule Management
Aggressive timeframes to meet schedule milestones often results in compressed timeframes to engage stakeholders (operational, engineering/technical and strategic), leading to compromises to proper requirements management. Consequently, a schedule needs to be developed to include opportunities for specified periods of stakeholder consultation and alignment during the capability delivery life-cycle.	Schedule Management/Governance

Section 7 – Project Line Management

7.1 Project Line Management as at 30 Jun 2021

Position	Name
Division Head	Mr Shane Fairweather
Branch Head	**AIRCDRE David Scheul**