



**TERMINAL CONTROL UNIT (TCU)  
INTEGRATION INITIATIVE**

**Submission to the Senate Standing Committee on  
Rural and Regional Affairs and Transport**

**August 2015**

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## 1. Introduction

Airservices Australia (Airservices) is a Government-owned organisation responsible under the *Air Services Act 1995* (the Act) for the provision of air traffic management, air navigation support (communications infrastructure, radar and navigation aids) and aviation rescue and fire fighting services to the aviation industry.

In providing these services, the Act requires Airservices to regard the safety of air navigation as the most important consideration.

## 2. Context

Forecasts for aviation traffic growth indicate passenger numbers in our region will double by 2030. This growth, along with extra-long haul airline operations, new military aircraft capabilities, the increasing use of remotely-piloted aircraft, and the limitations of legacy infrastructure, presents a significant capability challenge for Australia in the medium term. New infrastructure projects such as new runways and terminals at existing airports, new airports to serve major cities, new aircraft fleets, and new technology in aircraft and ground systems are being rapidly introduced.

Military aviation is a key component of our national security and both civil and military aviation are critical enablers to advancing Australia's global and regional interests.

A key strategy of Airservices to efficiently and effectively manage the expected forecast in air traffic growth, which has been supported by successive governments, is the partnership with Defence to develop the OneSKY Australia Program – a joint solution that will deliver the modernisation of air traffic management in Australia and take advantage of an opportunity for air traffic management alignment.

The introduction of a single harmonised Civil-Military Air Traffic Management System (CMATS) will result in significant costs savings for both Airservices and Defence and will enable a new level of operational efficiency, safety and reliability for Australia's air traffic management.

The OneSKY Program is well underway with the early stages of work jointly announced by the Ministers for Infrastructure and Defence in early 2015.

Airservices and Defence are each responsible for readying their facilities and infrastructure to accept CMATS over the next few years. Within this context, Airservices has been carefully considering the options for implementing the most appropriate and efficient design and geographical footprint of infrastructure, technology and workforce for delivering safe and efficient services over the next 20 years and beyond.

## 3. Need

Airservices air traffic management technology design and geographical footprint has evolved over the past decades as new technologies and innovations have enabled more sophisticated and efficient service delivery. It has also added safety enhancements to support air traffic controllers in delivering critical services.

Progressive advances in computer processing technology and communications capabilities have allowed widely dispersed facilities and workforces to be brought together in cases where physical presence at an airport location was not relevant. Twenty years ago, the consolidation of Air Traffic Service Centres (ATSCs) from seven state-based operations to just two, saw Australia lead the world in air traffic control safety, efficiency and service delivery. Our two ATSCs in Melbourne and Brisbane currently provide control services for 95 per cent of Australian airspace and 11 per cent of the globe. They have best practice training and simulation facilities and are home to around 600 of the most skilled and professional air traffic controllers in the world.

Australia is a world leader in aviation safety, and while setting the standard for air traffic management, we have also been able to reduce costs to industry by over 20 per cent in real terms, over the past

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decade. In part, this cost reduction has been driven through efficiencies such as the co-location of services and the provision of remote air traffic services.

As Airservices transitions to the next generation of air traffic management in Australia through the OneSKY Program, we need to consider how best to structure our operations and infrastructure to maximise the benefits of 21<sup>st</sup> century technology. The Terminal Control Unit (TCU) integration is part of this consideration and provides Airservices with the opportunity to realise benefits to our service delivery, for our workforce in the long term, and avoid investment in facilities and systems that are unnecessary. Our investment program is funded by the aviation industry, and ultimately airline passengers.

Integration of air traffic control services will also improve reliability and resilience of our services, with less sites to monitor and to maintain. It will provide greater availability of service with access to a larger pool of qualified controllers at central locations, allowing unplanned absences to be filled more easily. This will reduce the risk of service interruption and increase workforce capacity. Given the rapid rate of change being driven by the proliferation of digital technology, this will also provide the organisation with an enhanced capacity and speed to respond to any changes in Australia's aviation environment.

Terminal control services are provided in the approach and departure phases of flight, from the control tower in small airports, from a dedicated TCU or the ATSCs.

TCU integration is about changing the location from where this service is delivered, not the nature of the service. Tower control would remain on site at airports and be unaffected by this project. There will be no change in the level of service delivery to industry.

The consolidation of the two additional terminal control facilities, Cairns and Adelaide, is proposed to commence from 2017 and is a continuation of the philosophy to continually strive to provide a better and more efficient service for the Australian aviation industry.

## 4. International Best Practice

The International Civil Aviation Organisation (ICAO) is the international body that coordinates the development and maintenance of standards and recommended practices. As a member State, Australia abides by these international standards, including those that relate to the provision of approach and departure services.

ICAO Annex 11 states in Chapter 3 para 3.2.b that:

*'3.2 Provision of air traffic control service*

*The parts of air traffic control service described in 2.3.1 shall be provided by the various units as follows:*

*b) Approach control service:*

*1) by an aerodrome control tower or area control centre when it is necessary or desirable to combine under the responsibility of one unit the functions of the approach control service with those of the aerodrome control service or the area control service;*

*2) by an approach control unit when it is necessary or desirable to establish a separate unit'.*

Airservices proposal to consolidate TCU services is consistent with ICAO in that Airservices has deemed it 'desirable to combine under the responsibility of one unit'. Integrated TCU operations are also common for other Air Navigation Service Providers around the world, including Canada, Germany, the United Kingdom and the United States of America.

## 5. Business Case

In making the decision to co-locate the proposed services, Airservices undertook relevant financial analysis and preliminary safety work to inform the Board decision in December 2014.

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The financial analysis demonstrated a positive long term Net Present Value for the co-location of the Adelaide and Cairns Terminal Control Units within the Melbourne and Brisbane ATSCs respectively.

Airservices is applying extensive experience gained over 20 years with the same operational model of integrated service delivery for Canberra (delivered from Melbourne) and the Gold Coast (delivered from Brisbane).

## 6. Safety

Airservices is committed to providing safe, secure and efficient services to industry. Current air traffic control services for more than 95 per cent of all Australian airspace are already provided from the Melbourne and Brisbane ATSCs.

TCU services have been progressively co-located into the Melbourne and Brisbane centres over the past 20 years with no adverse impacts to safety. TCU services for Canberra and Gold Coast There is no operational requirement for TCUs to be co-located with the control tower or the airport. The surveillance-based approach services provided by TCUs are delivered entirely by electronic means (predominantly radar) and are not dependent on controllers visually seeing the aircraft.

The Adelaide and Cairns TCU integration will be undertaken in accordance with Airservices safety management processes and procedures which comply with regulatory requirements and standards. Safety aspects of the TCU integration will be assessed during the planning phase and will be subject to stringent safety analysis activities to ensure that any potential hazards are identified and addressed prior to integration. A Safety Case will then be prepared during the executing phase of the project for presentation to and endorsement from CASA.

Local knowledge and expertise of Adelaide and Cairns controllers will be retained. Experienced controllers will move or assist with the transition. For new controllers, a core part of the training and assessment process is familiarity with the airspace that they control, including knowledge of hotspot locations and local traffic patterns. Airservices has a long history of ensuring that remote approach services are fully prepared to deal with location specific issues and the rigorous controller training specifically addresses this requirement. At all times (now and into the future), the local tower is a key advisor to the TCU on these local issues.

Additional information about air traffic control, terminal control units and the proposed integration of services is at Appendix A.

## 7. Staff Impacts

Airservices is committed to retaining all controllers who wish to stay with Airservices. While certain positions will be relocated, Airservices is committed to offering redeployment for all employees whose positions will be relocated. This means that there will be no forced redundancies, and all affected air traffic controllers in Adelaide and Cairns have been guaranteed a job at the same level without a reduction in pay. Employees who elect not to accept redeployment and agree to termination of employment will be entitled the severance provisions of the ATC Enterprise Agreement.

TCU controllers in Adelaide and Cairns will have a choice as to whether they transfer to Melbourne or Brisbane, or redeploy to the Adelaide or Cairns air traffic control towers therefore continuing to reside in Adelaide or Cairns. Redeployment to one of Airservices other 28 locations is also an option subject to positions being available in those locations.

Management will work closely with each staff member to explore the option that best suits their personal circumstances. Any change to the employment situation for staff in Adelaide or Cairns will be covered by conditions in the relevant Enterprise Agreement.

Increased staff numbers at the ATSCs will also provide for a greater degree of schedule flexibility, which lends itself to increased opportunity for cross skilling, training and career development. Further information, including relating to staffing impacts, can be found at Appendix B.

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## 8. Consultation

Airservices has conducted extensive consultations with a range of customers and stakeholders on the proposed integration of the Adelaide and Cairns TCUs.

In June 2014, information was sent from Airservices to those federal Members of Parliament (MPs) affected by the proposal, either due to their portfolio responsibilities or electorate location, including an offer of a detailed briefing on the proposal. Other stakeholders consulted include aviation industry, state and territory governments, and relevant unions.

Staff have also been consulted and continually updated through the TCU integration planning phase, and have been provided opportunities to input into the transition strategy.

Airservices continues to offer briefings and provide information to stakeholders to ensure their concerns are identified and addressed where appropriate. For further information, please contact Andreas Marcelja, Manager, Government and International Relations

## Appendix A: Additional Background

### About Air Traffic Control (ATC)

Air traffic control is used to manage the safe and orderly flow of aircraft into, out of and across Australian airspace. There are three main types of air traffic controllers:

- Tower controllers – located at an airport's control tower, these controllers are responsible for all aircraft and vehicle movements on taxiways, runways and in the immediate vicinity of the airport.
- Terminal controllers – do not require visual contact with an aircraft, use radar and other surveillance technology to manage the flow of aircraft arriving and departing from major city airports.
- En route controllers – located in Brisbane and Melbourne, these controllers are responsible for all aircraft at all other times of flight.

Graphic 1: Who controls the phases of flight.



Terminal control operations are currently provided from the two major Air Traffic Service Centres (ATSCs) in Brisbane and Melbourne, and four TCUs in Adelaide, Cairns, Sydney and Perth. The TCU integration project will relocate approach and departure control services currently performed across four locations into two.

- Adelaide TCU into Melbourne ATSC
- Cairns TCU into Brisbane ATSC

Melbourne and Brisbane would have the capacity to serve as a back up to each other if necessary. The Perth and Sydney TCUs are not included in the current integration project.

### About Terminal Control Units (TCUs)

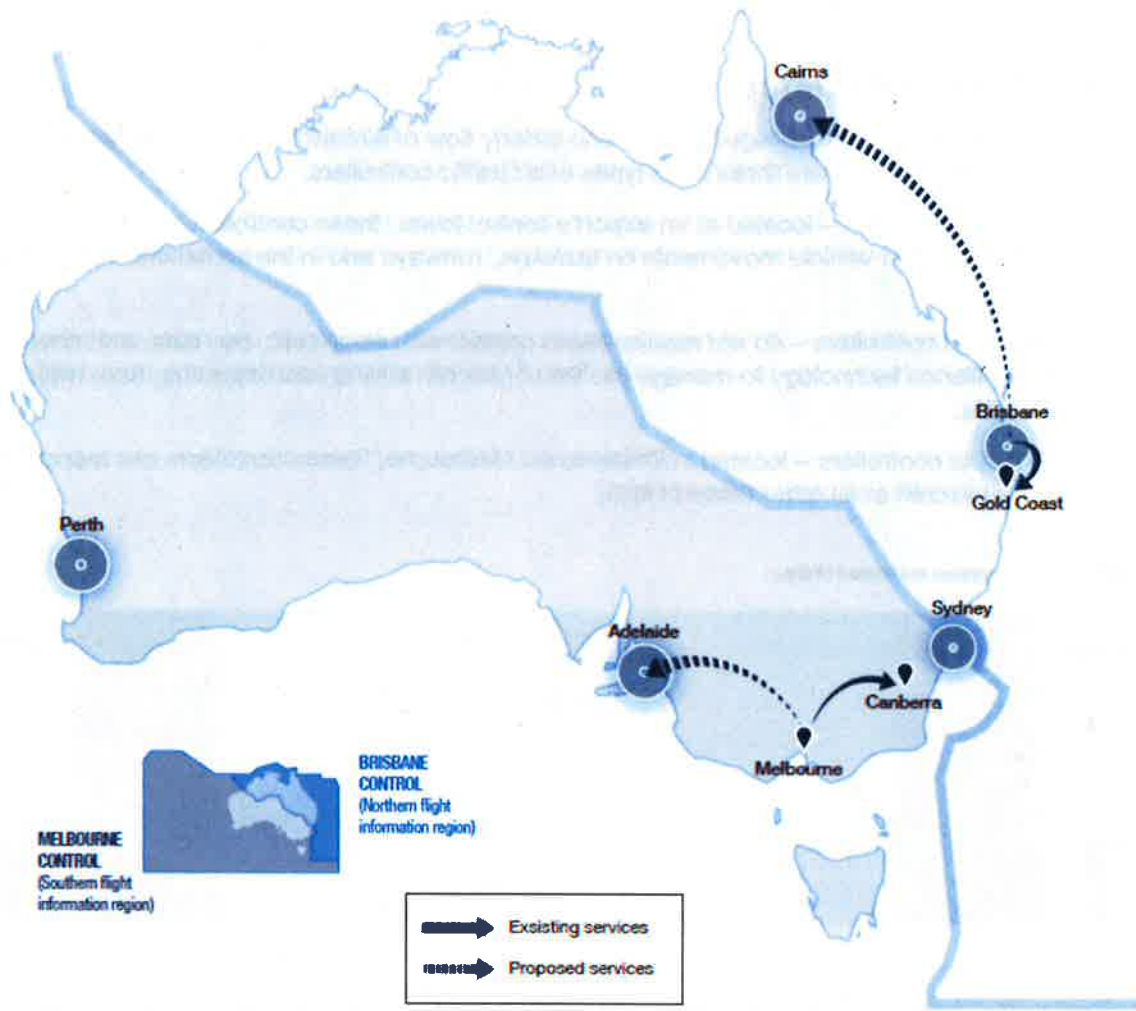
Terminal control services are provided in the approach and departure phases of flight, from the control tower in small airports or from a dedicated TCU in the ATSC in larger airports.

TCU integration is about changing the location from where this service is delivered and not the nature of the service. Tower control would remain on site at airports and be unaffected by this project. There will also be no change in the level of service delivery to the industry.

The majority of air traffic control is currently provided from Brisbane and Melbourne. The proposal is to integrate Cairns into Brisbane and Adelaide into Melbourne. Terminal control services are already provided for Canberra from Melbourne and for Gold Coast from Brisbane.

Graphic 2: Proposed co-location services

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## Appendix B: Frequently Asked Questions

### 1. Is it safe to integrate TCU facilities?

Yes. Safety is Airservices number one priority. Consolidation of facilities provides a safe model for meeting future demands.

- Prior to the Board decision and consistent with the requirements of the Airservices Safety Management System, a Safety Case and Reporting Determination (SCARD) was conducted for the integration of the Adelaide and Cairns terminal control units (TCUs) into the Melbourne and Brisbane Air Traffic Services Centres (ATSCs) and would now proceed with the development of a full safety case.
- Prior to implementation, the Civil Aviation Safety Authority (CASA) will need to approve the safety case which includes documented evidence that the safety impacts have been adequately considered and addressed.
- A Post Implementation Review (PIR) will be conducted to ensure the operations from Melbourne and Brisbane meet all the conditions required for ongoing service provision.
- It is also useful to note that terminal controllers do not require visual contact with an aircraft – their services are delivered by electronic means. Primary, secondary and tertiary layers of communication facilities are used.
- Integrated TCU services are already provided in parts of Australia and around the world and have been for more than 20 years. This is not a new concept.
- More air traffic controllers will be available at TCU locations than at present, which means workforce capacity is increased.

### 2. Was a business case developed?

In making the decision to co-locate these services, Airservices undertook a strategic business case and preliminary safety work to inform the Board decision in December 2014.

That business case demonstrated a positive long term Net Present Value for the co-location of the Adelaide and Cairns TCUs with the Melbourne and Brisbane air traffic services respectively. Airservices is applying extensive experience earned over 20 years when it first integrated services for Canberra (to Melbourne) and the Gold Coast (to Brisbane).

### 3. Will the service be affected because controllers don't live in the city?

No. All controllers receive training to their specific area of responsibility. This is of particular relevance to the terminal environment and the increasing fidelity of our surveillance, display and training systems which support the development of this knowledge.

In the integrated TCU context, Airservices also maintains dedicated hot line intercoms between the Terminal Area (TMA) controller and relevant tower to ensure a strong line of communication is available between controllers in each location. This concept is proven by the continued safe and efficient operation of Gold Coast and Canberra TCUs from Brisbane and Melbourne for the past 20 years.

### 4. Is this just a cost-saving measure?

No. The current operations model was designed over 20 years ago when technology was not as sophisticated as it is now and necessitated a larger footprint. As we prepare for the future, including the implementation of a new, harmonised civil-military air traffic management system, integration is

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part of Airservices plan to address the challenges of aviation growth through the smarter use of resources, including our people and technology.

While there will be a reduction in costs over time, the primary driver of integration is to position Airservices to realise the operational capability needed for the next 20 years while continuing to deliver safe and efficient services for its customers.

**5. Will air traffic controllers be worse off?**

No. Career development opportunities for air traffic controllers will be improved. Increased staff numbers at integrated TCU locations will provide for a greater degree of schedule flexibility, which lends itself to increased opportunity for cross skilling, training and career development.

All controllers who wish to remain at their current location will be accommodated – no one will lose their job.

**6. Don't terminal controllers need to see arriving and departing aircraft?**

No. Advances in technology allow approach, departure and en route air traffic control to be provided from any location.

TCU services are delivered by electronic means and are not dependent on controllers having visual contact with the aircraft. Integrated operations have proven effective for more than 20 years at Canberra and the Gold Coast.

**7. If there is a problem at one TCU location, will services be disrupted?**

No. The likelihood of facility loss is increased with a larger footprint, because of the greater probability of a disruptive event.

The ability to resume operations after a disruptive event is heavily influenced by controller availability. Integrated TCU facilities would result in increased staffing at the covering centre, and therefore a faster response to service resumption.

**8. What consultation will be conducted about this project?**

Airservices has been and will continue to consult with a range of stakeholders including aviation industry, staff, unions, federal and state MPs, and government officials.

**9. Why now?**

The transition to a new, harmonised civil military air traffic management system through the OneSKY Program (expected to be available from 2018) has required Airservices to consider its future infrastructure and operational needs. Air traffic growth is expected to double by 2030 and TCU integration will support Airservices service delivery into the future through OneSKY.

Furthermore, the majority of ATC staff are more than 45-years-old, and integration at this point will cause minimal disruption when considered in this context. The current age profile across TCUs flags the probability of high turnover at these locations in coming years. Recruitment and training activities are ongoing and being implemented via our resource planning.