airservices

Air Traffic Management Services Plan
2012-2017

About this plan

The Air Traffic Management Services Plan 2012–17 outlines the operational, environmental and economic context for the provision of one of our core services to industry.

The plan aligns changes in air traffic management with regulatory requirements and infrastructure implementation to meet global, regional and local performance expectations, particularly in the safety and environment management areas. It aims to ensure that service provision can cost-effectively meet increasing demand.

Our aim is to meet, or exceed, the performance expectations of our stakeholders.

Our service delivery environments

Our current plan continues to reinforce service delivery through the service delivery environment framework – East Coast, Regional and Upper Airspace Services.

These service delivery environments are supported by Network Management Services and remain the preferred way to match services to expectations through this planning period. As traffic levels increase, so will the degree of network interaction and complexity. This means greater focus on effective whole-of-network management will be required through collaborative decision making.

Meeting customer demand

The future direction for air traffic management is one of increasing automation, collaborative decision making, flight deck autonomy, less dependence on traditional navigation facilities and improved flexibility to meet customer needs.

There will be greater focus on connecting the aviation industry to ensure the air traffic management network and services are managed to provide value to our customers.

Collaborative decision making will improve air traffic management by sharing information and data between stakeholders. Together with new software tools, technological advances and supporting procedures, collaborative decision making ensures cohesive whole-of-network management that benefits all our customers and stakeholders.

Overview

Our Air Traffic Management Services
Plan 2012-2017:

- describes the key service outcomes of our delivery environments
- outlines the capabilities required to achieve performance expectations
- identifies high level air traffic management requirements for service delivery
- provides an operational and performance justification for system enhancement
- indicates areas where capital and operations investment is required to meet the growth in demand for the air traffic management system.

Across all service delivery environments there will be greater focus on quality of service and performance-based air traffic management as detailed in the Airservices Service Charter.

We aim to continue to provide safe, secure, efficient and environmentally responsible air traffic management services and to check performance against stakeholder expectations.

Future developments

Major activities across all service delivery environments during the planning period include:

- reviewing tower operations through the Airport Capacity Enhancement program to improve capacity and predictability in all weather conditions and to standardise industry operating practices. This review will include an analysis of factors affecting runway occupancy time
- enhancing control tower services with new functionality and capability
- increasing data sharing between Airservices and airlines to better manage operational flow and improve predictability
- implementing arrivals and departures management as part of collaborative decision making
- enabling wider use of surveillance separation minima to enhance service capability. This will be supported by the ADS-B program and CASA's regulation for aircraft to be equipped with ADS-B
- introducing approach surveillance services at 10 regional airports
- introducing radar surveillance services in the Paraburdoo area
- ensuring seamless airspace operations by improving coordination and communication capabilities, including data exchange, with adjacent flight information regions
- increasing performance based navigation capabilities.

Developing the plan

In developing this plan, Airservices has taken into account key strategic, tactical and operational documents and plans.

External drivers

The plan supports agreed international and domestic air traffic management stakeholder needs. These are outlined by the International Civil Aviation Organisation (ICAO), Global ATM Operational Concept (GATMOC) and the ICAO Asia/Pacific Regional Plan.

It is consistent with the National Aviation Policy White Paper, the Australian Airspace Policy Statement and the Ministerial Statement of Expectations. It also aligns with the Australian Strategic Air Traffic Management Group's Australian Air Traffic Management Strategic Plan.

Internal drivers

This plan is supported by, and contributes to, a series of operational and strategic goals within Airservices.

Airservices Corporate Plan 2011–2016

The corporate plan outlines how Airservices intends to progress towards its mission, vision and values over the next five years. Key strategies cover four themes:

- maximising safety performance
- core operational and business excellence
- creating new value for industry
- high performing organisation.

The Air Traffic Management Services Plan 2012-2017 outlines the operational, environmental and economic context for the provision of air traffic services that support the corporate plan.

Airservices Environment Strategy 2011–16

Our environment strategy details a number of current and future actions to minimise greenhouse gas emissions and noise impacts, and to balance community, government and industry expectations.

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Challenges

Airservices has identified three key challenges during the life of this plan:

- cost effectively sustaining the ongoing growth in air traffic demand while continually improving safety
- making a meaningful contribution to global and national carbon dioxide emission control initiatives
- integrating resources and projects in those areas where value can best be created.

Other considerations with an impact on our delivery of this plan include:

- developing a joint operating concept to harmonise civil and military air traffic management functions
- capitalising on technological advances in communication, navigation and surveillance capabilities
- identifying the impact of future technology on our workforce and revising recruitment and training plans to ensure an adequate supply of skilled people.

East Coast Services

Service domain

East Coast Services airspace encompasses the climb, en route and descent of passenger aircraft flights between major east coast airports in a corridor stretching from Cairns south to Adelaide. It also includes tower services provided at major and secondary airports in the region.

Service outcome

Our primary service outcome is delivering optimised gate-to-gate operations between Australia's higher population density cities along the Cairns to Adelaide corridor, including the provision of appropriate and timely air traffic management capacity at major capital city airports.

Service demand

Demand is predicted to continue to increase, driven by an average growth in domestic traffic of around three per cent and international traffic of around four per cent a year, principally at the major airports. It is expected that by 2020 both Melbourne and Brisbane will have traffic demand equivalent to Sydney's 2010 demand.

Delivering operational improvements

Airservices is engaged in a range of projects and initiatives to help manage the predicted growth in traffic along the east coast.

Goal	Initiatives
Continuity of service	• Upgrade Eurocat hardware and software. • Enhance control tower services by providing new functionality and capability.
Performance based navigation	• Review and evolve routes to integrate performance based navigation capability. • Integrated 'en route to approach to runway' procedures. • Connect required navigational performance terminal area procedures to standard arrivals (STAR) procedures. • Deploy approach with vertical guidance procedures for runways with supporting infrastructure.
Increasing airport and runway capacity	• Implement procedures and practices to increase operational effectiveness of tower and terminal area control to better use existing latent capacity. • Implement a cross-industry program to develop procedures to safely minimise runway occupancy times at major airports.
Sustainable all weather acceptance rates	• Deploy a ground-based augmentation system to obtain maximum operational benefit. • Evaluate the benefits of Airport Surface Movement Guidance and Control System deployment and consider potential roll out to other aerodromes. • Work with Sydney, Canberra and Gold Coast airports and airlines to minimise reduction of airport capacity in bad weather conditions. • Work with Brisbane Airport and industry to identify additional requirements for a new parallel runway in 2020.
Demand and capacity management	• Increase data sharing between Airservices and airlines to better understand both capacity and demand, manage operational flow and improve predictability. • Implement arrivals and departures management practices based on collaborative decision making.
Airspace organisation and service delivery management	• East Coast Services (North) to review service delivery requirements for terminal area services at Cairns. • East Coast Services (South) to review traffic management procedures and air routes in the Adelaide area. • East Coast Services (Sydney) to review traffic management procedures for the Sydney terminal area and surface movement operations at Sydney Airport in line with proposed infrastructure changes. • East Coast Services (North) to review traffic management, air routes and Defence activity in south east Queensland.
Future developments	• Review new technologies and procedures as they become available to improve runway capacity and acceptance rates.

Upper Airspace Services

Service domain

Upper Airspace Services airspace encompasses transcontinental airspace above 28,000 feet beyond the East Coast Services domain, and all trans-oceanic airspace in the Australian Flight Information Region. It also includes upper airspace managed under contract for the Honiara and Nauru flight information regions. It is the gateway service provider for all international jet traffic to and from Australia.

Service outcome

Our primary service outcome is to continue deploying procedures and capabilities that enhance safety and flight efficiency and in the short-term, expand flexible tracking and user preferred routes. In the medium and longer term, user-preferred trajectories will be implemented in Australia's high level airspace and in adjacent flight information regions.

Service demand

Demand for service is predicted to continue to increase, driven by an average growth in domestic traffic of around 3 per cent and international traffic of around 4 per cent a year. This will result in predicted overall traffic growth of about 20 per cent during the planning period. Infrastructure, energy and mineral projects in north-west Western Australia, Queensland and Papua New Guinea are also expected to deliver above average traffic growth in these areas.

Delivering operational improvements

Airservices is engaged in a range of projects and initiatives to support the increasing demand on services in the upper airspace environment during the planning period.

Goal	Initiatives
Continuity of service	• Upgrade Eurocat hardware and software.
Enhance situational awareness and service capability	• Continue to enable the wider use of surveillance separation minima to enhance service capability, supported by the ADS-B program and the CASA regulatory mandate for ADS-B Out aircraft equipage.
	• Introduce radar surveillance services in the Paraburdoo area.
	• Enhance coordination and communication capabilities by exchanging data with adjacent flight information regions.
	• Complete integration of Flightwatch high frequency services into the Brisbane Air Traffic Services Centre.
Enhance decision support tools	• Deploy Flight Plan Conflict Function to improve conflict detection and enhance safety.
Flexible airspace and air-route management	• Enhance sectorisation and flight information region boundary management.
	• Reform controller endorsements.
	• Continue to facilitate user preferred routes and Dynamic Airborne Re-route Procedures.
	• Use airspace flexibly to enhance civil/military harmonisation.
Performance based navigation	• Review route structures associated with navigation aids that will be decommissioned.
Future developments	• Improve traffic forecasting to enhance workload management and workforce planning.
	• Receive ADS-B data from additional adjacent flight information regions.
	• Transition from a route and sector structure based on terrestrial navigation aids to one based on Performance Based Navigation capability.

Regional Services

Service domain

Regional Services provides air traffic services to lower capacity regular public transport aircraft and general aviation aircraft in transcontinental airspace below 28,500 feet, and below 24,500 feet beneath the East Coast Services domain. It also provides control tower and terminal area services in Perth and at regional airports nationally.

Service outcome

Our primary service outcome is to continue enhancing services in lower airspace, provide cost-effective terminal area services for regional Australia and effectively integrate regional traffic into east coast airport traffic streams. In Perth, our focus is on cost effective terminal area services.

Service demand

Demand for service is predicted to increase, driven by an average growth in domestic traffic of around three per cent a year. There will be greater pressure for higher service levels at uncontrolled airports. Significant growth in fly-in, fly-out operations from Perth is expected to increase overall movements at Perth airport with an average growth in domestic traffic of 3.5 per cent, international traffic of around 4.5 per cent and regional traffic of around 1.5 per cent a year.

Delivering operational improvements

Airservices is engaged in a range of projects and initiatives to support the forecast growth in the regional services environment during the planning period.

Goal	Initiatives
Continuity of service	▪ Upgrade Eurocat hardware and software. ▪ Enhance control tower services through new functionality and capability. ▪ Upgrade infrastructure at control towers.
Enhanced capacity and flow management	▪ Introduce arrival and departure traffic management systems at Perth airport. ▪ Increase operational effectiveness of tower and terminal area control at Perth to better use existing latent capacity. ▪ Implement a cross-industry program to safely minimise runway occupancy times at Perth.
Sustainable all-weather acceptance rates	▪ Work with Perth Airport and airlines on options to minimise reduced airport capacity in bad weather conditions. ▪ Deploy Airport Surface Movement Guidance and Control Systems at Perth.
Enhanced situational awareness and service capability	▪ Introduce approach surveillance services at 10 regional airports. ▪ Enable wider use of surveillance separation minima to enhance service capability with support from the ADS-B program and the CASA regulatory mandate for ADS-B Out aircraft equipage. ▪ Introduce radar surveillance services in the Paraburdoo area.
Performance based navigation	▪ Introduce required navigational performance terminal area procedures. ▪ Review route structures associated with navigation aids that will be decommissioned. ▪ Deploy approach with vertical guidance procedures for runways with supporting infrastructure.
Flexible airspace and air route management	▪ Reform air traffic controller endorsements.
Future developments	▪ Improve demand forecasting to assist workload management. ▪ Develop and review remote and virtual tower capabilities for possible deployment at non-controlled airports. ▪ Review new technologies and procedures as they become available to improve runway capacity and acceptance rates.

Network Management Services

Service domain

Network Management Services provides a data and aeronautical information integration and distribution capability across all service domains. It also incorporates Airservices Aeronautical Information Services and the Australian Flight Information Centre (AusFIC). The branch is also responsible for the National Operations Centre and plays a key role in developing and deploying collaborative decision making.

Service outcome

Our primary service outcome is optimising end-to-end air traffic management performance. To achieve this we work with other service domains and customers to implement system-wide information management and collaborative air traffic management that matches demand to system capacity.

Service demand

The number of scheduled aircraft movements is expected to increase by 2.8 per cent a year over the planning period. This includes four per cent growth in international movements, 2.7 per cent in inter-capital movements and 2.2 per cent in regional movements. Non-scheduled aircraft movements are expected to remain unchanged.

The growth in demand in Melbourne, Sydney and Brisbane will increase complexity and congestion. As the movement rates increase at each airport, latent capacity – or the ability to absorb delays – reduces and the flow between major airports becomes increasingly interdependent.

Delivering operational improvements

Airservices is engaged in a range of projects and initiatives to support this forecast growth and to respond to service demand over the medium term.

Goal	Initiatives
Service continuity	▪ Upgrade National Operations Centre operational architecture to ensure continuity and meet regulatory compliance requirements.
Maximise system capacity	▪ Identify under-used airport capacity which can be accessed to improve network traffic flow and minimise delays.
Enhanced network management	▪ Implement operational improvements to cope with increased traffic demands at east coast airports. ▪ Develop systems to predict and compare traffic demand against capacity. ▪ Amend air traffic management procedures to accommodate ICAO Document 4444 flight planning amendments. ▪ Introduce airport collaborative decision making. ▪ Implement a proactive approach to arrivals and departure management.
Enhanced aeronautical information management	▪ Continue to develop approach with vertical guidance procedures for runways with supporting infrastructure. ▪ Expand the availability of 'public' required navigational performance approach and departure procedures.
Future developments	▪ Introduce a system wide information management (SWIM) capability through which information sharing and collaborative decision making are delivered. ▪ Enhance network operations planning through collaborative decision making and SWIM.

The future

According to the Civil Air Navigation Services Organisation (CANSO), the global air traffic management system is already between 92 and 94 per cent efficient.

Achieving 100 per cent efficiency is not possible—some inefficiency will always exist due to operating constraints and interdependencies, including measures to ensure safety, manage capacity, weather avoidance and noise abatement procedures.

CANSO also notes that efficiency declines as air traffic demand, complexity and congestion increases.

To maintain the status quo, the air traffic management system must continue to improve at a rate at least consistent with the growth in demand.

During this planning period, Airservices will evaluate new air traffic control systems to ensure they have the functionality necessary to manage and deliver services into the future.

The Air Traffic Management Services Plan 2012-2017 ensures Airservices is well placed to not only keep pace with growing demand, but also exceed customer expectations for service improvement and greater efficiency as the air traffic system continues to expand.

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