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Preface

As a Commonwealth government authority, CASA must ensure that the decisions we make, and the processes by which we make them, are effective, efficient, fair, timely, transparent, properly documented and otherwise comply with the requirements of the law. At the same time, we are committed to ensuring that all of our actions are consistent with the principles reflected in our Regulatory Philosophy.

Most of the regulatory decisions CASA makes are such that conformity with authoritative policy and established procedures will lead to the achievement of these outcomes. Frequently, however, CASA decision-makers will encounter situations in which the strict application of policy may not be appropriate. In such cases, striking a proper balance between the need for consistency and a corresponding need for flexibility, the responsible exercise of discretion is required.

In conjunction with a clear understanding of the considerations mentioned above, and a thorough knowledge of the relevant provisions of the civil aviation legislation, adherence to the procedures described in this manual will help to guide and inform the decisions you make, with a view to better ensuring the achievement of optimal outcomes in the interest of safety and fairness alike.

Mark Skidmore AM
Chief Executive Officer and
Director of Aviation Safety
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# Glossary

## Acronyms and abbreviations

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<td>Australian Airspace Policy Statement</td>
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<td>AA- SRP</td>
<td>Australian Airspace Sector Risk Profile</td>
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<td>AAS</td>
<td>Australian Airspace System</td>
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<td>AACF</td>
<td>Airspace and Aerodrome Consultative Forum</td>
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<td>ABF</td>
<td>Australian Balloon Federation</td>
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<td>AC</td>
<td>Advisory Circular</td>
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<td>ACP</td>
<td>Airspace Change Proposal/s</td>
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<td>AGL</td>
<td>Above Ground Level</td>
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<td>AIC</td>
<td>Aeronautical Information Circular</td>
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<td>Aeronautical Information Management</td>
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<td>AIP</td>
<td>Aeronautical Information Publication</td>
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<td>AIRAC</td>
<td>Aeronautical Information Regulation and Control</td>
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<td>Airservices</td>
<td>Airservices Australia</td>
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<td>ALARP</td>
<td>As Low As Reasonably Practicable</td>
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<td>ANAA</td>
<td>Air Navigation, Airspace and Aerodromes</td>
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<td>ANSP</td>
<td>Air Navigation Services Provider</td>
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<td>AOPA</td>
<td>Aircraft Owners and Pilots Association</td>
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<td>APF</td>
<td>Australian Parachute Federation</td>
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<td>ARASMM</td>
<td>Airspace Risk and Safety Management Manual</td>
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<td>ARIS</td>
<td>CASA Business Process Management Publisher</td>
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<td>AS/NZS</td>
<td>Australian/New Zealand Standard</td>
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<td>Aviation Safety Incident Report</td>
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<td>Air Traffic Services</td>
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<td>Australian Transport Safety Bureau</td>
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<td>BITRE</td>
<td>Bureau of Infrastructure, Transport and Regional Economics</td>
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<td>CASA</td>
<td>Civil Aviation Safety Authority</td>
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<td>CASA SOE</td>
<td>CASA Standard Operating Environment</td>
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<td>CASR</td>
<td>Civil Aviation Safety Regulation 1998</td>
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<td>CRMF</td>
<td>Common Risk Management Framework</td>
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<td>CTA</td>
<td>Control Area</td>
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<td>Control Zone</td>
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<td>Acronym / abbreviation</td>
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<td>DAH</td>
<td>Designated Airspace Handbook</td>
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<td>DAP</td>
<td>Departure and Approach Procedures</td>
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<td>DAS</td>
<td>Director of Aviation Safety</td>
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<td>Defence</td>
<td>Department of Defence</td>
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<td>EI Form</td>
<td>Environment Implications Form</td>
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<td><em>Environment Protection and Biodiversity Conservation Act 1999</em></td>
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<td>ERSA</td>
<td>En Route Supplement Australia</td>
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<td>ES</td>
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<td>FNA</td>
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<td>FP DAM</td>
<td>The IDS Flight Procedure Design Tool</td>
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<td>HAZID</td>
<td>Hazard Identification</td>
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<td>ICAO</td>
<td>International Civil Aviation Organisation</td>
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<td>IFP</td>
<td>Instrument Flight Procedures</td>
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<td>Instrument Flight Rules</td>
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<td>MATS</td>
<td>Manual of Air Traffic Services</td>
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<td>NLT</td>
<td>Not Later Than</td>
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<td>NOF</td>
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<td>NOTAM</td>
<td>Notice to Airmen</td>
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<td>OAR</td>
<td>Office of Airspace Regulation</td>
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<td>OWI</td>
<td>OAR Work Instruction/s</td>
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<td>PBN</td>
<td>Performance Based Navigation</td>
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<td>PRD</td>
<td>Prohibited, Restricted and Danger Area/s</td>
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<td>QRIR</td>
<td>Quality Risk Indicator Report</td>
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<td>RAPAC</td>
<td>Regional Airspace Procedures Advisory Committee</td>
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<td>RA-Aus</td>
<td>Recreational Aircraft Australia</td>
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<td>RIA</td>
<td>Regulatory Impact Analyst</td>
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<td>Regulation Impact Statement</td>
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<td>RMF</td>
<td>Risk Management Framework</td>
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<td>SDPM</td>
<td>Standards Development Procedures Manual</td>
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<td>SEA</td>
<td>Sensitive Environmental Areas</td>
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<td>TAAM</td>
<td>Total Airspace and Airport Modeller</td>
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<td>the Act</td>
<td><em>Airspace Act 2007</em></td>
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<td>the Regulations</td>
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<td>VFR</td>
<td>Visual Flight Rules</td>
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**Definitions**

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<td>Australian Airspace System (AAS)</td>
<td>Is a concept that incorporates aircraft operations, the rules of the air, air traffic services, communications, navigation and surveillance capabilities, supported by airspace design and the airspace regulation, policy and administration.</td>
</tr>
<tr>
<td>Air Traffic Service (ATS)</td>
<td>A generic term meaning (variously) flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).</td>
</tr>
<tr>
<td>Classified Airspace</td>
<td>A volume of airspace classified, in accordance with Annex 11 to the Chicago Convention, as Class A, B, C, D, E, F or G.</td>
</tr>
<tr>
<td>Control Area (CTA)</td>
<td>A controlled airspace extending upwards from a specified limit above the earth,</td>
</tr>
<tr>
<td>Control zone (CTR)</td>
<td>A controlled airspace extending upwards from the surface of the earth to a specified upper limit.</td>
</tr>
<tr>
<td>Designated Airspace</td>
<td>A volume of airspace within Australian territory designated to be a prohibited area, restricted area or a danger area.</td>
</tr>
<tr>
<td>Airspace Volume</td>
<td>Means a volume of airspace defined by reference to specified horizontal and vertical points.</td>
</tr>
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</table>
References

- CASA Non-Regulatory Policy - DAS-PN027-2011 - Risk Management Policy
- Manual of Air Traffic Services
- CASA Risk Management Framework
# Revision history

Amendments/revisions of this Manual are recorded below in order of most recent first.

<table>
<thead>
<tr>
<th>Version No.</th>
<th>Date</th>
<th>Parts/Sections</th>
<th>Details</th>
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<tr>
<td>1.0</td>
<td>September 2016</td>
<td>All</td>
<td>First issue</td>
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1. Introduction

1.1 Purpose of this manual

The purpose of the Airspace Risk and Safety Management Manual (ARASMM) is to record CASA’s policies and processes in performing the functions and exercising the powers in connection with the administration and regulation of Australian-administered airspace under the Airspace Act 2007 (the Act). The ARASMM replaces the Office of Airspace Regulation (OAR) Operations Manual (2010) and details the risk and safety management processes and methodologies, and the consultation and environment considerations, required to ensure that Australian-administered airspace is administered and used safely.

1.2 Description of this manual

The ARASMM is divided into six functional parts:

- Part 2: Regular reviews of Australian-administered airspace.
- Part 3: Airspace change
- Part 4: Management and assessment tools
- Part 5: Data, information and stakeholder management
- Part 6: Support tools and services
- Part 7: OAR Work Instructions (OWI).

The processes in each Part permit the OAR to conduct its activities in a graduated and structured manner. For example, a review of a volume of airspace (Part 2), or an airspace change assessment (Part 3), may utilise airspace risk processes (Part 4), data information and stakeholder input (Part 5), support tools and services (Part 6) and OWI (Part 7).

1.3 OAR structure

CASA exercises its responsibility to administer and regulate airspace through the OAR. The OAR is a distinct operational unit of CASA’s Air Navigation, Airspace and Aerodromes (ANAA) Branch, Aviation Group. The Aviation Group Manager (GM) reports directly to the Director of Aviation Safety/Chief Executive Officer as depicted in the CASA Organisational Structure.

The OAR is made up of two distinct work areas; Airspace Operations and Airspace Reform with a Department of Defence (Defence) Liaison Office supporting both work areas as depicted below.
1.4 Definition of roles

The OAR Manager is responsible for the ARASMM. The OAR Manager may delegate responsibility for elements of the ARASMM to the appropriate OAR Team Leader(s).

To meet CASA’s requirements according to legislation, the OAR collectively undertakes a number of activities which include:

- conducting aeronautical studies and airspace reviews to determine the appropriateness of the classifications of volumes of Australian-administered airspace and of the services and facilities provided by air navigation service providers
- managing and undertaking detailed reviews of submissions and/or requests for airspace changes and airspace reservations
- conducting detailed analysis and assessment of aviation activity within Australia for the purposes of determining the need for airspace changes
- undertaking airspace change activities including development, consultation, implementation and education
- assessing and managing airspace change proposals
- providing environmental specialist expertise on airspace matters
- developing and proposing legislation for the airspace architecture, protective airspace and air routes
- reviewing designated airspace (prohibited, restricted and danger areas)
- liaising with Airservices Australia (Airservices) and Defence on airspace matters
- assisting to implement the airspace changes identified by the OAR
- liaising with industry on airspace change matters.
1.4.1 Airspace Operations Team
The Airspace Operations Team is focused on the day-to-day administration and regulation of Australian-administered airspace including processing proposals for airspace change. The Operations Team tasks include:

- managing the day-to-day airspace requirements throughout Australia which includes declaring and disestablishing Prohibited, Restricted and Danger Areas (PRD)
- conducting ongoing airspace risk identification and management
- assessing and managing Airspace Change Proposals (ACP)
- ensuring appropriate consultation takes place with industry on airspace matters
- other tasks as required in support of OAR and CASA functions.

1.4.2 Airspace Reform Team
The Airspace Reform Team is focused on the strategic review of Australian-administered airspace and making recommendations for airspace change. The Airspace Reform Team conducts the regular review of Australia’s airspace to ensure the airspace is used safely, taking into account the safety of air navigation, while also taking into account the protection of the environment, the efficient use and equitable access to airspace and national security. CASA’s Airspace Reform Team activities consider the requirements of the Act, Airspace Regulations 2007 (the Regulations), Australian Airspace Policy Statement (AAPS), International Civil Aviation Organisation (ICAO) Standards and Recommended Practices, Government Policy and the CASA Corporate Plan.

The Airspace Reform Team conducts regular reviews of Australian-administered airspace on the basis of Airspace risk assessments as detailed in Part 2. Airspace reviews are consulted with other airspace users, Air Navigation Services Providers (ANSP), Government agencies, aviation advisory groups, expert panels and other relevant stakeholders.

1.4.3 Airspace review and PBN
From February 2016, Air Navigation in Australia will be founded upon the accuracy, utility and reliability of Performance Based Navigation (PBN). The Australian Airspace System (AAS) assumes the use of PBN consistent with ICAO and Government policy objectives. The Airspace Reform Team will when appropriate, make recommendations in order to deliver the dividends in safety and efficiency from the adoption of PBN.

1.4.4 Airspace review process
The ARASMM translates the obligations of the Act, the Regulations and AAPS into activities that CASA will conduct, in order to satisfy those obligations of:

- determining whether the current airspace classifications, in accordance with ICAO Annex 11 - Air Traffic Services, are appropriate
- determining whether the types of services and facilities provided by air navigation service providers in relation to particular volumes of airspace are appropriate
- identifying risk factors to determine whether there is safe, secure and efficient use of that airspace and equitable access for all users.
The airspace review process is achieved through the review of:

- existing classified and designated airspace
- air routes
- air traffic control services
- containment of instrument flight procedures
- ICAO Standards and Recommended Practices
- international best practice adapted to the benefit of the AAS.

Recommendations are made when required so that the airspace reflects the most appropriate safety outcome taking into account the protection of the environment, the efficient use and equitable access to airspace and national security.

1.4.5 Defence Officers in the OAR

Defence officers are placed within the OAR as OAR officers consistent with the Government’s policy of a harmonised national civil and military air traffic management system and to effect better coordination of national civil and military airspace requirements.

1.4.6 Airspace legislative and policy framework

The Civil Aviation Act 1988, is the enabling legislation for the establishment of CASA, and has the primary aim of establishing a regulatory framework for maintaining, enhancing and promoting the safety of civil aviation, with particular emphasis on preventing aviation accidents and incidents. Furthermore, the Civil Aviation Act 1988 states that, ‘In exercising its powers and performing its functions, CASA must regard the safety of air navigation as the most important consideration’.

The Act establishes a head of power for CASA to regulate and administer Australian-administered airspace to ensure it is used safely, taking into account protection of the environment, efficient use of that airspace, equitable access to that airspace for all users of that airspace and national security.

Australian administered airspace1 is made up of the following components:

- The airspace over Australian Territory:
  - the territory of Australia and of every external Territory
  - the territorial sea of Australia and of every external Territory
  - the airspace over any such territory or sea.
- The airspace that has been allocated by the ICAO and for which Australia has accepted responsibility.
- Airspace administered by Australia at the request of another country.

---

1 Australian-administered airspace has the meaning given by paragraphs (a) and (b) of the definition of Australian-administered airspace in subsection 3(1) of the Air Services Act 1995.
The Regulations confer functions and powers on CASA in connection with the administration and regulation of Australian-administered airspace, including:

- the determination of the classification of volumes of Australian-administered airspace in accordance with Annex 11 to the Chicago Convention, as Class A, B, C, D, E, F or G
- the determination of the services and facilities to be provided by the providers of air navigation services in relation to particular volumes of Australian-administered airspace
- the designation of volumes of Australian-territory for the purposes of prohibiting and restricting access to, or warning about dangers within or over, that airspace
- the designation of air routes and airways in Australian-administered airspace and the conditions of use of a designated air route or airway
- the giving of directions in connection with the use or operation of a designated air route or airway or of air route or airway facilities
- the determination of aerodromes as controlled aerodromes
- the determination of volumes of Australian-administered airspace as flight information regions, flight information areas, control areas or control zones
- review of instruments made under the regulations.

Defence has limited powers under the Defence (Special Undertakings) Act 1952 to declare airspace. Defence may declare Prohibited Areas over land and water when required for the defence of Australia. Defence may also declare Restricted Areas which prohibit or restrict flight over an area when required to protect a Defence special undertaking.

In addition to the Act and Regulations, the AAPS made by the Minister for Infrastructure and Regional Development under the Act, establishes the Australian Government’s policy objectives for CASA’s administration and regulation of Australian-administered airspace.

The CASA Corporate Plan, overseen by the CASA Board, presents CASA’s goals, strategies and initiatives to support the Government’s aviation policy. The Corporate Plan expresses what CASA has set out to achieve and how CASA will measure its performance to improve aviation safety in Australia and contribute to global aviation safety initiatives through ICAO.

The Australian airspace regulatory framework is depicted in Figure 1.2 below.
The Civil Aviation Act 1988, states CASA must regard the safety of air navigation as the most important consideration. The OAR approaches the development of its advice on airspace regulation on the same basis. The legislation and regulations which govern airspace administration require a broad range of activities to be undertaken by CASA in order to ensure Australian-administered airspace is administered and used safely. While the AAPS focuses on priorities and processes for a selection of those activities, all roles, functions and responsibilities under the Act and the Regulations must be fulfilled by CASA.

The process for changing airspace may commence with CASA following an airspace review or from a proponent requesting a change to the airspace. Where a change to the airspace classification or designation is identified, such application for change must be accompanied by comprehensive supporting evidence as described in Part 3.

1.5 Airspace risk in context
The level of risk present in a volume of airspace is dependent on a range of interrelated factors. These factors include:

- number and type of aircraft and their operations
- the rules of the air and procedures published in the Aeronautical Information Publication (AIP)
- ANSP communications, navigation and surveillance capabilities
- airspace classification generally aligned with ICAO Annex 11 and ANSP services required
- CASA’s airspace design principles.
These interrelated elements, depicted below when considered together are the existing controls of the AAS.

Figure 1.3: Australian Airspace System Concept

1.6 Airspace Risk and Safety Management Manual Overview

1.6.1 General

The CASA Risk Management Framework (RMF) Version 2.0 December 2014 and CASA Risk Management Policy DAS-PN027-201112 define the policy and processes for risk management. The CASA RMF states that all operational areas have a responsibility to ensure their functions (the specific roles each area is tasked with) are fully supported by appropriate risk management practices and that specific risk management instructions will be developed with respect to safety risk management and other operational activities as identified.

The ARASMM provides a holistic approach to managing airspace risk and safety. It is based on the CASA RMF which closely aligns with Australian/New Zealand Standard (AS/NZS) ISO-31000 Risk Management - Principles and Guidelines and the Common Risk Management Framework for Airspace and Air Traffic Management. Figure 1.4 illustrates the CASA risk management process.

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The airspace risk management and assessment tools/methods described in Part 4 may be employed as part of work conducted under Parts 2 and 3 of the ARASMM.

1.6.2 Manual elements

The ARASMM is made up of six functional parts comprised of sections, elements, sub-elements and processes. This document is structured around each of the functional parts as described in section 1.2. The combination and interaction of different parts enables the OAR to perform its functions.

The structure of the functional parts and some sections are shown in Figure 1.5 below.
1.7 Airspace regulation administration

1.7.1 Regulation Impact

The Office of Best Practice Regulation (OBPR) requires compliance with the procedures and processes outlined in the Australian Government Guide to Regulation when making, reviewing and reforming regulations. CASA policy is detailed in paragraph 6.2.2 of the Standards Development Procedures Manual (SDPM). A Regulation Impact Statement (RIS) may be required in some circumstances. Where an airspace change is consequent to other regulation, approval or determination then a RIS is not required.
Examples are:

- when aircraft or passenger movement numbers exceed the criteria in thresholds in the AAPS
- when the airspace determination or declaration is consequent to an approved airport Master Plan or Master Development Plan
- when the airspace determination or declaration enables compliance with other Civil Aviation legislation.

If a recommendation or airspace change is proposed, which is not consequential from other decisions or regulation it must be referred to the OAR Manager for review and potential referral under the SDPM to CASA’s Regulatory Impact Analyst (RIA). If required, the OAR Manager shall refer the recommendation or airspace change through the ANAA Branch Manager, to the RIA for further action following the SDPM processes.

### 1.7.2 Airspace regulations delegations

The OAR is the only authority Delegated to apply the Regulations. OAR Officers, both CASA and Defence, may be delegated powers under the Regulations. Air Traffic Controllers (civil and military) do not hold Delegations under the Airspace Regulations. Part 175 of *Civil Aviation Safety Regulations 1998 (CASR)* regulates the persons authorised to issue a Notice to Airmen (NOTAM), including those that can activate and deactivate controlled and designated airspaces. Partial activations of areas is also permitted in certain circumstances which are specified in the non-legislative instrument – Declaration designating PRD made bi-annually.
2. Regular reviews of Australian-administered airspace

2.1 Introduction

Section 13 of the Act requires CASA to conduct regular reviews of Australian-administered airspace in order to:

- determine whether the airspace classifications are appropriate
- determine whether the services and facilities provided by air navigation service providers in relation to particular volumes of airspace are appropriate
- identify risk factors to determine whether there is safe and efficient use of that airspace and equitable access to that airspace for all users.

To meet its obligations under the Act, the OAR conducts a number of different types of airspace reviews. The type and scale of a review depends on the type of airspace being reviewed, relative level of risk compared to other areas and the complexity of the airspace under review.

The ARASMM divides Australian-administered airspace into three broad types for the purposes of conducting regular reviews:

- **Aerodrome related airspace** that primarily supports aircraft operations at a particular aerodrome(s) and includes terminal areas that may support multiple aerodromes. PRD may also be considered where relevant
- **En route airspace** that primarily supports aircraft en route between the departure point and destination. Specific PRD may also be considered where relevant
- **PRD:**
  - Prohibited Area - airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited for reasons of military necessity
  - Restricted Area - airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions
  - Danger Area - airspace of defined dimensions, above the land areas or territorial waters of a State, within which activities of potential danger to aircraft may exist.

Some reviews may require a combination of elements of these three review types in order to achieve the overall objectives of the review. One type of review may also identify the need for another type to be conducted, e.g. an aerodrome related review may identify some issues in the en route environment.

Figure 2.1 shows the high level structure of Part 2 of the ARASMM.

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3 Section 13 of the *Airspace Act 2007*

4 Restricted Areas are declared only in the interests of public safety including the safety of aircraft in flight, the protection of the environment or security
The following sections describe the processes associated with each type of airspace review.

### 2.2 Aerodrome related airspace

The level of airspace risk in the vicinity of an aerodrome is generally considered to be higher than other areas (e.g. en route airspace) as aircraft are in critical phases of flight, closer to the ground and air traffic density is higher. As a result, these types of reviews are CASA’s primary consideration when conducting regular reviews of Australian-administered airspace.

Aerodrome related airspace is airspace primarily supporting aircraft operations at an aerodrome(s), including terminal areas that may support multiple aerodromes. Airspace containing instrument flight procedures is considered aerodrome related airspace. Specific PRD may also be considered.

Figure 2.2 provides an overview of the four phase aerodrome related airspace review process. Airspace assessments shown in Phase 3 of this process may also be conducted at the direction of the OAR Manager when necessary.

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5 Instrument flight procedures include instrument approach procedures, standard instrument departures and standard arrival routes.
The following sections describe the processes associated with each phase of the review of aerodrome related airspace.

2.2.1 Phase 1 – Quarterly Risk Indicator Report (Coarse Filter)

The Quarterly Risk Indicator Report (QRIR) is the first phase (coarse filter) in the regular review of aerodrome related airspace completed for the quarters ending March, June, September and December annually. The QRIR reports the findings of a coarse risk filter\(^6\) which considers the AAPS airspace criteria thresholds in the light of incident reports, and flight rules ratios in order to develop a risk score for aerodromes. This risk score is used to identify aerodromes that require a further investigation or review in accordance with Phase 2 or Phase 3 of the aerodrome related airspace review process at Figure 2.2.

The QRIR considers the following when determining the relative airspace risk score for an aerodrome’s airspace:

- aircraft movements

\(^6\) The QRIR is a spreadsheet quantitative coarse risk filter based on the Dawes and Meehl’s Theory. A detailed explanation of the QRIR is at RM8 D15/402254.
Airspace Risk and Safety Management Manual

• passenger movements
• Aviation Safety Incident Reports (ASIR)
• IFR to VFR traffic ratios
• previous airspace assessments.

The input data for the QRIR is primarily Airservices and Australian Transport Safety Bureau (ATSB) data as described in Part 5 of this manual. The output of the QRIR coarse filter is an aerodrome risk score. Pre-assessment risk scores are quantitatively derived. Post assessment risk scores may be adjusted by the OAR, in a screening process, through for example the analysis of incident data and flight rule ratios.

QRIR Process Map

Figure 2.3 provides an overview of the QRIR process. Refer to the relevant OWI for further details to complete individual tasks.

QRIR Process Details

A summary of each step in the QRIR process is shown below. OWI 04-01 details procedures to conduct the QRIR.

1. Collate aircraft and passenger movement data
   Aircraft and passenger movement data is primarily sourced from Airservices as it is usually the most complete. The movement data utilised by the QRIR includes:
   - total aircraft movements (take offs and landings)
   - aircraft types by port (traffic mix)
   - total passenger movements.

2. Collate ASIR data
   ASIR data is obtained from the ATSB and is provided for use in accordance with section 5.4 of this manual and OWI 02-01 and used as an input to the QRIR.
3. Load movement and incident data into QRIR tool
   Once loaded the data is compared to criteria defined within the QRIR tool to allocate
   a relative risk score for the following elements:
   - total aircraft movements
   - total passenger movements
   - ASIRs
   - IFR to VFR traffic mix ratio.

4. Review pre-assessment risk scores
   The pre-assessment score is the sum of the individual elements from step 3.
   Results should be reviewed and anomalies investigated.

5. Screen Results
   OAR subject matter experts review the pre-assessment risk scores in the light of
   incident report contents, additional information, previous airspace assessment and
   any industry intelligence that may have been received by CASA. The risk scores
   may then be qualitatively adjusted.

6. Review post assessment risk scores
   The post-assessment risk scores are reviewed to identify any aerodromes with a
   post assessment risk score of eight or higher which will require explanation and a
   recommendation in the report.

7. Compile Quarterly Risk Indicator Report document
   Draft the report utilising the QRIR document template. The report identifies and
   comments on any aerodromes with:
   - a post assessment risk score of eight or higher
   - where the AAPS movement and/or passenger thresholds are exceeded
   - where there is more than one serious incident recorded.

8. Recommendations are made to the ANAA Manager, through the OAR Manager.

**QRIR Output**

The QRIR will make recommendations for further assessment of airspace risk or other actions
by CASA as appropriate. These locations will be assessed using the airspace assessment
methods in Figure 2.2.

**2.2.2 Phase 2 – Airspace Assessment**

An airspace assessment reviews those locations as recommended by the QRIR or any
location as directed by the OAR Manager.

An airspace assessment considers the relative risk rankings from the QRIR. The assessment
aims to develop recommendations in response to the identified risks specific to the
assessment area. Data collected through the QRIR is utilised during an airspace assessment
in greater detail.

Determining the appropriate airspace assessment technique may vary and is driven by the
complexity of the airspace and the results of the previous phases. The airspace assessment is
a graduated approach which provides an increasingly detailed airspace assessment commensurate to risk, complexity and other factors in the following sequence:

- Preliminary Review
- Airspace Review
- Aeronautical Study.

**Phase 2: Determination of Airspace Assessment**

1. Location(s) considered for Airspace Assessments based on the results of the QRIR.
2. QRIR results are considered in addition to other relevant intelligence and information.
3. Consider the appropriate level of airspace assessment required.
   - Preliminary Review
   - Airspace Review
   - Aeronautical Study
4. OAR Manager directs appropriate airspace assessment to be carried out at specific locations or within specific airspace volumes.

The OAR Manager will provide the requirements of airspace assessment(s), including post report reviews through a Terms of Reference.

A summary of each type of airspace assessment is shown in the sections below.

**Preliminary Review**

The Preliminary Review will attempt to achieve an understanding of the risks that are potentially associated with the airspace being considered.

The Preliminary Review is a brief assessment and is designed to be conducted within a short time frame normally conducted without a site visit. The level of detail of the analysis is generally lower than the more detailed assessments and is used to assess less complex airspace environments. The types of information that should be considered and evaluated in a Preliminary Review and the types of assessments include:

- aircraft and passenger movements
- aviation safety incidents
• aeronautical information
• previous airspace assessments
• industry intelligence
• limited remote consultation
• desktop risk factor identification.

The results of a Preliminary Review are presented in a report consistent with OWI 04-02. When additional risks or factors are identified during the conduct of a Preliminary Review, which would require an amendment to the Terms of Reference, the matter should be referred to the OAR Manager.

Airspace Review

The Airspace Review is a more detailed airspace assessment and with site visits and greater consultation with stakeholders.

Sources considered as part of an Airspace Review may include:
• evaluate the findings of previous recommendations and implementations
• a site visit and/or phone interviews with appropriate stakeholders
• analysis of aircraft movement and passenger data
• detailed analysis of safety incident reports
• risk assessment(s).

The results of an Airspace Review are presented in a report consistent with OWI 04-03. When additional risks or factors are identified during the conduct of the Airspace Review, that would require an amendment to the Terms of Reference, the matter should be referred to the OAR Manager.

Aeronautical Study

The Aeronautical Study is the most detailed form of airspace assessment. The purpose of an Aeronautical Study is to assess the airspace arrangements to determine if they are appropriate in the context of any identified risks.

The outcome of an Aeronautical Study is to demonstrate that all sensible and practicable precautions are in place to reduce the risk of collision to acceptable levels. For the purpose of the studies, a multifaceted approach is used including quantitative and qualitative analysis.

Formal notification of the commencement of a study to the Department of Infrastructure and Regional Development via CASA Corporate Relations may be required for certain Aeronautical Studies at the discretion of OAR Manager.

Most Aeronautical Studies include the following:
• review of any previous airspace assessments
• detailed review of relevant aeronautical information
• considerable consultation with relevant stakeholders
• detailed analysis of aircraft and passenger movement data from a variety of sources
• analysis of other relevant data where applicable (may include flight plan data and surveillance data)
• detailed analysis of ASIRs
• review of relevant ATSB safety incident investigations and reports
• risk assessments
• fast time simulation modelling (as applicable)
• consideration of applicable airspace reform initiatives.

The results of an Aeronautical Study are presented in a report consistent with OWI 04-04. When additional risks or factors are identified during the conduct of the Airspace Study, that would require an amendment to the Terms of Reference, the matter should be referred to the OAR Manager.

2.2.3 Phase 3 – Implementation (Risk Management / Treatment)

The airspace assessments performed during Phase 3 may identify and recommend changes to address any identified risks to the safety of air navigation, the efficiency of the airspace, equitable access to the airspace, the protection of the environment or national security. In addition, any recommendations should include consideration of PBN as discussed in Section 1.4.3.

Some examples of airspace assessment recommendations are shown below:

• a stakeholder should submit an ACP to disestablish or change restricted or danger area lateral and/or vertical limits
• a stakeholder should submit an ACP to change the lateral and/or vertical limits of controlled airspace
• an aerodrome operator or ANSP should implement a local traffic information service at an aerodrome
• the ANSP should establish an air traffic control service
• a review of the aerodrome’s instrument flight procedures should be conducted by the relevant procedure design organisation
• an aerodrome should be allocated a discrete, or be removed from, a common traffic advisory frequency
• changes to published air routes should occur to enhance traffic segregation.

Recommendations should clearly identify who is required to perform what actions. Implementing the recommendations may be CASA's or another stakeholder’s responsibility.

Implementation Process

Figure 2.5 provides a general process for implementing recommendations to manage/treat identified risks.
2.2.4 Phase 4 – Implementation Review

The Implementation Review records and tracks the progress of the implementation of recommendations. The review will also include an assessment of the efficacy of the recommendation in treating the respective risk or other factors identified in the airspace assessment.

An Implementation Review may be conducted where the scope of the recommendations and subsequent changes warrant. Where an implementation review is warranted, it will be conducted after the risk management/treatments have been implemented and taken effect.

Should the Implementation Review identify the risk management/treatments are not effective, then a further Airspace Assessment (Phase 2) may be warranted and/or the OAR will reconsider the risk management/treatment strategies (Phase 3).

OWI 04-05 provides further details for the conduct and reporting of an Implementation Review.

Implementation Review process

Figure 2.6 provides an overview of the Implementation Review process. Refer to the applicable OWI for further details to complete the individual tasks.
2.3 En Route Airspace

En route airspace is airspace that primarily supports aircraft en route between the departure point and destination. Specific PRD may also be considered.

The OAR Manager may direct an en route airspace assessment to be performed as required.

2.4 Prohibited, restricted and danger area review program

The PRD review program considers all Australian administered PRD through a rolling review program. Specific individual PRD are also reviewed during aerodrome related and en route airspace assessments. OWI 04-06 provides further detail on the conduct and reporting of the PRD Review Program.
3. Airspace change

3.1 Airspace change process

This part of the ARASMM describes the overall airspace change process guidance on submitting CASA Form 1284 - Airspace Change Proposal (ACP Form) and the internal processes that the OAR uses when processing ACP.

3.1.1 What constitutes an airspace change

An airspace change may be in connection with one or more of the following:

- determination of airspace classification
- determination of controlled airspace
- designation of PRD
- changes to the type of operation, for example from flying to firing or both, within a volume of airspace and/or the conditions of its use
- changes to the provision of ATS within any volume of airspace
- temporary situations requiring designated airspace
- changes to air routes
- changes to the controlling authority or contact for a given volume of airspace.

3.1.2 Why an airspace change may be Initiated

An airspace change may be initiated due to any of the following:

- person(s) or organisation (a proponent) identifying the need for change
- the outcome of an airspace review.

3.1.3 Who may initiate an airspace change

A person(s) or organisation who initiates an airspace change and/or CASA Form 1284 - Airspace Change Proposal (ACP Form) is referred to as the proponent. Where the airspace controlling authority (civil or Defence) considers that the airspace volume requires change, that controlling authority is recommended to act as the proponent for the necessary airspace. To maintain independence as a regulator, the OAR recommends that another party acts as the proponent in submitting an ACP, where a recommendation is made following an aeronautical review; see Part 2 of this manual. The exception is when the proposed airspace change occurs at a national level, where CASA or the OAR may act as the proponent.

3.1.4 Airspace change proposal contents

An ACP must be submitted using CASA Form 1284 – Airspace Change Proposal except for requests for temporary PRD in response to emergency events, which pose a risk to aviation or public safety, security or the environment. The form has been developed to ask the key questions of proponents and guides them, in addition to this manual, on what is expected to be detailed or attached to the ACP:

- the nature of the activity and the reason for the change and any relevant background information
• airspace description and Controlling Authority/Contact information including:
  – maximum vertical limit of the activity (not the proposed PRD)
  – maximum lateral limit of the activity as of latitude and longitude conforming to the rules in Designated Handbook INTRO 2 Preface
  – proposed hours of activity of the PRD
  – the telephone contact details for:
    o controlling authority (prohibited and restricted areas)
    o contact (danger area)
  – the Restricted Area status RA1, RA2 or RA3 (definitions are available in DAH and AIP).
• For Airservices and Defence:
  – the calculation of airspace buffers using MATS 2.4.8
  – what Air Traffic Control services will be provided if any
• where the change is to existing Classified airspace (CTR/CTA) or PRD or air routes identify the changes
• where the proposed airspace/air route/or ATS to be varied/other change is located
• when the change is proposed to take effect
• planned AIRAC date for publication
• a risk or safety assessment:
  – include the detail of the safety/risk assessment
  – identify any residual risk
  – identify any impact on:
    o safety of air transport operations
    o instrument flight procedures (IFP)
    o efficiency of the airspace
    o equitable access for other airspace users
    o national security if applicable
• a record of consultation completed with other airspace users in the area to be impacted by the proposal
• following consultation an assessment of the impact on the access to the airspace by other airspace users or to the efficient operations of aerodrome operations, air routes, VFR routes or IFP
• an environmental impact assessment.

3.1.5 Airspace Containment

When submitting an ACP, the proponent must consider and address the containment of any impacted IFP. It is best practice that IFP should be contained or remain outside the lateral and vertical dimensions of controlled airspace or designated airspace wherever possible. This is to ensure aircraft only need to monitor the minimum number of radios/frequencies in critical phases of flight and that there is the greatest likelihood of alerted see and avoid between aircraft. This is consistent with the Civil Aviation Safety Regulations Manual of Standards Part
Chapter 8 Design Standards. A proponent can address containment of IFP by completing one or more of the following and including in the ACP:

- redesign the IFP so that it is contained or remains outside the lateral and vertical dimensions of controlled airspace or designated airspace
- propose an increase or reduction in the lateral and vertical dimensions of controlled airspace or designated airspace, to ensure the IFP is contained or remains outside the lateral and vertical dimensions of controlled airspace or designated airspace
- submit a safety case to justify the IFP being wholly or partially un-contained (this may follow a redesign of IFP which improves safety)
- withdraw the IFP.

3.2 ACP Service Standards

ACP Service Standards provide temporal guidance and information to persons proposing an airspace change in order make a change to the Australian-administered airspace or air routes. The ACP Service Standards are congruent with OAR Key Performance Indicators used to report to the CASA Board.

The Service Standards detailed below are consistent with the temporal guidance CASA has provided to persons seeking exemptions against the Civil Aviation Safety Regulations 1998, Civil Aviation Regulations 1988 and Civil Aviation Orders as detailed in Advisory Circular (AC) 11-02 (2). This guidance will also provide advice on selecting an appropriate AIRAC effective date in order that sufficient time is provided for changes, other than emergency airspace change requests, to ensure they are given proper consideration by the OAR and are promulgated to other airspace users in sufficient time for the changes to be incorporated in the AIP and electronic navigation systems.

Airspace changes may be proposed to make emergency, temporary or permanent changes to the Australian-administered airspace or changes to air routes pursuant to the Regulations. These airspace change proposals are categorised as either urgent or routine. Urgent and routine change requests have appropriately different service standards as described below.

3.2.1 Urgent airspace change request service standards

Urgent airspace change requests are requests for temporary PRD in response to emergency events which pose a risk to aviation or public safety, security or the environment. These are considered urgent requests and the OAR will action these requests with the highest priority. The OAR will process these requests as follows:

- airspace requests are reviewed and a decision made by the Delegate not later than (NLT) 60 minutes from receipt of the initial request
- if approved, airspace declared by Instrument and a correctly formatted and complete NOTAM template to be provided to NOTAM Office (NOF) NLT 75 minutes from receipt of the initial request
- proponent advised of the decision NLT 90 minutes from the initial request.
3.2.2 Routine airspace and air route change request service standards

Routine airspace changes includes both requests for temporary and permanent airspace changes to PRD and for permanent changes to the airspace classifications and air routes. Whilst routine in nature, ACP on the basis of their complexity, duration and impact on other airspace users, may require more detailed consideration. In these cases the Service Standards detail a graduated approach, with specific Service Standards for temporary and permanent changes.

Temporary airspace change requests

The OAR will consider complete airspace change requests submitted by an ACP, for temporary Danger, Restricted or Prohibited airspace, not in response to an emergency, within 40 working days. Incomplete requests will be processed within 30 working days following receipt of the additional information required to complete the ACP or such other time as agreed with the proponent. The OAR will process these requests as follows:

- the ACP will be reviewed and the proponent advised of receipt of the proposal, and any additional information required to complete the ACP NLT 10 working days from receipt
- consideration of a complete ACP will be completed by the OAR NLT 20 working days from receipt
- consideration of an incomplete ACP will be completed by the OAR NLT 10 working days from receiving the additional information required to complete the ACP or such other time as agreed with the proponent
- the OAR internal approval documents will be drafted and submitted to the appropriate Delegate NLT 20 working days from receipt for complete ACP or NLT 10 days from receiving the additional information required for incomplete ACP
- the Delegate will consider the proposal and makes a decision NLT 5 working days from submission of the ACP and internal approval documents to the Delegate
- the proponent will be advised of the Delegate’s decision NLT 5 working days following the decision
- if the ACP is approved, the airspace will be declared by Instrument, if required AIP Supplement authorised and NOTAM submitted to the NOF NLT 10 working days from approval by the Delegate.

Permanent airspace and air route change requests

The OAR will consider complete airspace change requests submitted by ACP, for Permanent Danger, Restricted or Prohibited airspace changes, changes to airspace classifications and air routes, within 70 working days. Incomplete requests will be processed within 60 working days following receipt of the additional information required to complete the ACP; or such other time as agreed with the proponent. The OAR will process these requests as follows:

- the ACP will be reviewed and the proponent advised of receipt of the proposal, and any additional information required to complete the ACP NLT 10 working days from receipt
• consideration of a complete ACP will be completed by the OAR NLT 30 working days from receipt or such other time as agreed with the proponent

• consideration of incomplete ACP will be completed by the OAR NLT 20 working days from receiving the additional information required to complete the ACP or such other time as agreed with the proponent

• the OAR internal approval documents will be drafted and submitted to the appropriate Delegate NLT 50 working days from receipt for complete ACP or 40 days from receiving the additional information required for incomplete ACP or such other time as agreed with the proponent

• the Delegate will consider the proposal and makes a decision NLT 5 working days from submission of the ACP and internal approval documents to the Delegate

• the proponent will be advised of the Delegate’s decision NLT 5 working days following the decision

• if approved, the airspace will be declared by biannual Instruments. If required additional temporary airspace will be declared, AIP Supplement authorised and NOTAM submitted to the NOF NLT 10 working days from approval by the Delegate.

3.2.3 Selecting an AIRAC effective date

The AIRAC effective date is based on the ICAO Annex 15 AIRAC cycle of every 28 days. This Annex defines that in all instances, information provided via AIRAC notification shall be published in paper copy and shall be distributed by Airservices Aeronautical Information Management (AIM) at least 42 days in advance of the effective date with the objective of reaching recipients at least 28 days in advance of the effective date.

Whenever major changes, as described in ICAO Annex 15, are planned and where additional notice is desirable and practicable, a publication date of at least 56 days in advance of the effective date shall be used.

Part 175 of CASR requires that aeronautical data and information is to be notified by AIRAC as set out in ICAO Annex 15. Airservices publishes the integrated AIP in accordance with the international schedule of AIRAC effective dates. AIRAC effective dates must be used for all integrated Aeronautical Information Package change requests.

7 Some complex and large changes may be submitted in several phases and take greater than 70 days to consider. In these instances the OAR will consult with the proponent and develop an acceptable time frame consistent with the graduated approach based on the complexity, duration and impact on other airspace users.
Adherence to the AIRAC ensures that the coordinated publication of safety-critical information in the integrated AIP is assured using a common set of internationally agreed dates. In order to accomplish this, data must be submitted well in advance of the target AIRAC date to permit enough time for processing and distribution, thereby affording reasonable notice to end users. For AIRAC cycle see AIP, GEN 3.1 – 4.

3.2.4 Selection of a submission date to the OAR

Airspace change proponents are responsible for determining an appropriate submission date to the OAR after considering the OAR’s Service Standards and selection of an appropriate AIRAC date criteria where applicable. The OAR is aware there may be unforeseen circumstances when a routine airspace or air route change will be required within a shorter time frame than the Service Standards. In these circumstances, the OAR will consider a late ACP provided the proponent submits suitable justification as to why the ACP was not submitted in line with the temporal guidance above. Consistent with CASA AC 11-02 (2), the OAR will not accept poor planning or commercial impact on business as suitable justification for late applications. CASA will also need to establish if the reduced timeframe available will be adequate for proper assessment of the safety, environment, equitable access, efficiency and national security impacts of a proposed airspace or air route change and advise the proponent accordingly.

3.3 ACP evaluation and assessment

The process used for evaluating and assessing ACPs will vary slightly depending upon what type of change has been proposed. The process for Temporary and Permanent change described and depicted below are similar. The process for assessing an Urgent ACP has a compressed timeline as detailed in paragraph 3.2.1. The assessment and evaluation of ACP are completed using the following criteria:

- safety
- protection of the environment
- efficient use of airspace
- equitable access
- national security
- current and future needs of the Australian aviation industry
- advances in technology
- international best practice as may be adapted to benefit Australia’s aviation environment
- ICAO Standards and Recommended Practices.

3.3.1 ACP received

When an ACP is received, it will initially be assessed for completeness and how most effectively the ACP will be processed. Information provided by the proponent on the ACP form is evaluated to establish if it is complete. Proponents will be advised if an ACP is incomplete and further assessment of the ACP will not be conducted until the required information is provided. The receive request for Airspace Change Process is depicted at Appendix A.
3.3.2 ACP assessment

Once the actions of initial receipt have been performed, the ACP will undergo assessment, as depicted at Appendix B in the Assess proposed airspace change process. The ACP will be reviewed and assessed consistent with the Act, the Regulations, AAPS and other policies including PBN and IFP containment. An allocated Job Manager will finalise the required information to complete the airspace change assessment which is then peer reviewed.

3.3.3 Recommendation and determination by the Delegate

The ACP will be recommended to a Delegate for consideration as depicted in Appendix C. Not all ACPs will receive a recommendation as they may not satisfy the criteria in the Act, Regulations or AAPS. In some instances, the OAR assessment may identify an alternative means of achieving the intended safety, environment or security outcomes.

Following the final assessment, the proponent will be advised if approval has been granted. If approved, a legislative Instrument is prepared for signature by the Delegate and action taken to promulgate the change through the Aeronautical Information Service process.

The change does not become effective until publication in the integrated AIP and/or as a NOTAM.

3.3.4 Urgent change

The process for the receipt and assessment of urgent airspace changes, as detailed in paragraph 3.2.1, is depicted at Appendix D. After receipt of CASA Form 1284 – Airspace Change Proposal advised as urgent or when advised of an urgent change by other means, the OAR Duty Delegate will determine whether an abbreviated assessment process is appropriate. Urgent change proposals can usually be processed quickly and regulatory action taken even out of hours. CASA contact numbers can be found at Contact CASA.

Following the assessment, the proponent will be advised whether approval has been granted. If approved, a legislative Instrument is prepared for signature by the Delegate and action taken to promulgate the change through the Aeronautical Information Service process.

The change does not become effective until publication in the integrated AIP and/or as a NOTAM.

3.4 Consultation and communication

The proponent is required to consult with other organisations commensurate with the change proposed and provide evidence of the consultation with the ACP. Consultation is conducted:

- to identify the impact on other airspace users impacted by the ACP, including aircraft operators/owners, Aerodrome operators and Sport aviation organisations or their representative organisations who are likely to utilise the airspace
- to identify the impact of the activity on the safe, orderly and expeditious flow of air traffic provided by the ANSP.

Further consultation guidance is provided in Part 5. CASA posts a summary of the ACP when received on the CASA website, for public information and comment.
3.5 Airspace risk assessment

The proponent is expected to provide an airspace risk assessment commensurate with the change proposed. Risk assessments that comply with the Common Risk Management Framework and the Australian/New Zealand Standard on Risk Management – Principles and Guidelines (AS/NZS ISO 31000:2009) are suitable. Further guidance on the OAR airspace risk assessment processes is provided in Part 4.

As a minimum an airspace risk assessment using CASA Form 1589 - Airspace Risk Assessment Template is required.

3.6 Environment assessment

ACP for PRD established for public safety, including the safety of aircraft in flight, and security require an assessment for their impact on any known matters of national environmental significance. The airspace change proponent can complete this assessment by accessing the Protected Matters Search Tool. The Search Tool provides an Environment Protection and Biodiversity Conservation Act (EPBC) 1999 Protected Matters Report. A check of the Report should ensure that there are no aviation threats to matters of national environmental significance. Guidance on using the tool is provided below:

- navigate to the Department of Environment website EPBC Act Protected Matters Search Tool Protected Matters Search Tool
- select Report by Coordinates and insert the proposed lateral dimensions in the ACP
- complete the Report by Coordinates sheet and select Report (bottom of sheet)
- a Protected Matters Report will be emailed to the proponent for review
- review the Protected Matters Report to confirm that there are no aviation threats to matters of national environmental significance and annotate any areas of concern on the Protected Matters Report.

If aviation threats are identified, contact the relevant natural resource management authority to seek clearance to conduct the aviation activity and provide conformation in the CASA Form 1284 – Airspace Change Proposal. Finally attach a copy of the e-mail to the ACP.

ACP for PRD established for the protection of the environment require a detailed environmental assessment. A complete Environmental Impact Assessment, if completed, may be used as evidence to support the ACP. If an Environmental Impact Assessment has not been completed as a minimum CASA Form 080 – Office of Airspace Regulation Environment Implications should be completed.

3.7 Fly Neighbourly Advice

A Fly Neighbourly Advice (FNA) is a voluntary code of practice established between aircraft operators and communities or authorities that have an interest in reducing the disturbance caused by aircraft within a particular area. FNAs were introduced in Australia in 1994 as a tool to reduce the effects of aviation on environmentally sensitive areas within uncontrolled airspace. The development of a FNA is facilitated by the OAR.

A FNA might include recommended limitations on operating altitudes, the frequency of operations and areas of operation. The nature, scope and terms of the advice are matters for
the stakeholders to determine. Arrangements for the monitoring and adherence with a FNA are also matters that may be addressed.

An FNA must be consistent with Civil Aviation Safety Regulations 1998, Civil Aviation Regulations 1988 and any air traffic management procedures applicable to the area. Mandatory aviation operating and safety procedures (as well as any aviation requirements relevant to the area) have precedence over a FNA in all circumstances.

A FNA should also acknowledge the necessity for police, fire, search and rescue, other emergency services and infrastructure-monitoring organisations to have access to low level airspace when the need arises.

Although a FNA must have the concurrence of relevant aviation authorities, it cannot be enforced under aviation law. Notification of a FNA may be published in aeronautical charts and documents. FNAs are recorded in the En Route Supplement - Australia (Special Procedures). Examples are:

- Kakadu National Park
- Blue Mountains National Park
- Moorabbin Training Area.

3.7.1 Establishing a Fly Neighbourly Advice

A decision to establish a FNA would normally be taken by a local government authority, an interested State or Commonwealth government authority, a business operator or a group formed within a community that is materially affected by the operation of aircraft.

A decision to develop a FNA would be based on identifying:

- the extent and values of the designated area over which an FNA would cover
- the nature and extent of the disturbance caused by aircraft and, where possible through measurement or other scientific analysis
- all principal stakeholders in the potential FNA
- the nature and purpose of aircraft operations that are affecting the designated area
- mandatory procedures that apply to aircraft operating in the proposed area of the FNA
- targets for reasonable reductions in the disturbance being caused by aircraft operations
- opportunities for aircraft operators to vary their operations to reduce disturbance without being unreasonably penalised by doing so
- aviation safety requirements.

The successful development of a FNA normally requires a facilitator with the standing or authority to guide the consultation and development processes. The facilitator should preferably be a person or organisation known to and trusted by the participants involved, who can act as an independent arbiter if the need arises. In some circumstances, it may be prudent to engage a professional facilitator.

It also requires the goodwill of all parties and a willingness to compromise towards achieving the common good. The OAR is able to advise proponents on the form and content of a FNA and arrange for publication in aeronautical documentation.
Consultative processes should be open and transparent. Consultation behind closed doors is likely to drive key parties from the development process. Although the form of consultation is a matter for the stakeholders and facilitator to agree, effective public advertising of the intention to develop a FNA should be considered.

Once a FNA is drafted, it should be referred to the OAR for consideration in regard to related aviation issues. The OAR will also consult with Airservices as a part of this process.

### 3.7.2 Possible opportunities to vary aircraft operations

The opportunities for an aircraft operator to vary an operation to reduce disturbances is limited by the nature of the operation, the terrain over which the operation is conducted, the type of aircraft being used, airspace limitations and mandatory operational and safety requirements. Within these limitations, opportunities to vary operations to reduce impacts by varying:

- the number of operations
- the altitude of operations
- flight tracks used, including the avoidance of sensitive areas and the repetitive use of particular tracks
- the origins and destinations of operations
- times of operations
- operating procedures available to the type of aircraft in use
- changing the type of aircraft used
- Fly Neighbourly piloting techniques and principles including:
  - avoiding noise-sensitive areas
  - follow high ambient noise routes (highways, etc)
  - follow unpopulated routes (waterways, etc).
- when operating near noise-sensitive areas:
  - maintain an appropriate fly-over altitude (most National Parks have suggested 1,500 to 2,000 feet above ground level)
  - maintain an appropriate hover/circling altitude
  - speed reduction
  - low noise speed/descent settings
  - route variation
  - use high take-off/descent profiles.

### 3.7.3 Altitude considerations

In nominating operating altitudes and/or recommendations for use in a FNA, stakeholders should consider the following:

- *Civil Aviation Regulations 1988* require aircraft to maintain a minimum height of 1,000 feet above ground level (AGL) over built up areas and 500 feet over all other areas
- special terrain/weather conditions that may affect the operation of aircraft, and the overlying airspace arrangements applicable to the area.
Note: recommended operating altitudes will not apply if these altitudes would jeopardise the safe conduct of the flight.

3.7.4 The form of a Fly Neighbourly Advice

The wording of a FNA is a matter for the participants involved. However, a FNA would typically have the following elements:

- a preamble that would set out the intent of the FNA
- the proponents of the FNA
- the geographic area and coordinates of the area over which the FNA would apply (including a map)
- the matters of concern to the stakeholders affected by aircraft operations
- matters of concern to the aircraft operators
- undertakings by aircraft operators to reduce the disturbances or the impact of their operations
- the means of monitoring the FNA, including the identification of indicators of the performance of operators in achieving the undertakings given
- the means by which failure to achieve the undertakings should be considered and remedied
- undertakings by the aircraft operators to accept the FNA and adhere to it
- acknowledgement by the stakeholders that emergency services including police, fire, search and rescue and infrastructure-monitoring operations may not always be able to adhere with the FNA
- a process to review the FNA after a set period of time.

The FNA might cover some or all of the following areas:

- a title and definition
- airspace management above (and if applicable, name of the National Park)
- airspace management above the (relevant geographical area).

The definition of the area covered by the FNA can be narrative, but preferably should also include a map. An example FNA can be found in Enroute Supplement Australia (ERSA) GEN Special Procedures.

3.7.5 Sensitive Environmental Areas (SEA)

The FNA should identify any natural environment areas or National Park areas which are considered particularly sensitive, for example due to concerns over disturbance of the environment because of vibration or noise.

Any (scenic) flight penetration into these zones would be subject to agreement with the relevant National Parks and Wildlife Service.

Avoidance of SEAs, or a minimum overflight altitude above ground or water that might apply. The determination of the overflight altitude would be developed by the stakeholders.
3.7.6 Preferred flight routes and altitudes

Flight routes and altitudes in the FNA may be selected either by voluntary arrangement between aircraft operators or through discussion with other participants (particularly National Park Authorities, where appropriate). If applicable under State legislation, the prescribed routes may be promulgated. Flight altitudes would depend on the local environment and apply except when landing or taking off at an aerodrome. Flight routes may have a timing component in them e.g. in relation to bird-breeding seasons or other sensitive times.

‘Ground level’ is defined as the highest point of terrain, and any object on it, within a radius of 600m of a point vertically below the aircraft.

Minimum flight altitudes above ground or water may be referenced to reduce noise and visual impact of aircraft operations. The determination of the altitude would be through stakeholder discussion.

3.7.7 Overriding provision

All the above provisions or requests should be considered not applicable if, for any reason, their observance would jeopardise the safety of a flight or put a pilot in conflict with any provision of the Civil Aviation Regulations 1988.

3.7.8 Developing and publishing the Fly Neighbourly Advice

The establishment of an FNA should be published in local media and made available on relevant web sites, in particular, the web site maintained by relevant local government authorities. More than one local government area might be affected by an individual FNA.

Subject to the FNA meeting the required standards, an FNA may be published in aeronautical charts and the ERSA. Aeronautical Charts and ERSA are published by Airservices and are amended at six-monthly and three monthly intervals.

Summary steps to develop Fly Neighbourly Advice

The OAR has a coordinating role and provides advice and guidance on how to prepare an FNA. The steps to establish an FNA are:

- FNA proponent (e.g. park authority) contacts OAR to facilitate the establishment of a FNA
- OAR provides the proponent with FNA information and guidelines and industry contact details
- proponent prepares draft FNA for OAR and Convenor Regional Airspace and Procedures Advisory Committee (RAPAC) comment
- OAR invites proponent to RAPAC meeting to discuss draft FNA with regional aviation community
- proponent incorporates feedback from stakeholders into draft FNA
- proponent finalises FNA
- FNA forwarded by OAR to Airservices Aeronautical Information Service for publication (subject to criteria)
- FNA published in ERSA by Airservices and advertised by the proponent.
4. Management and assessment tools

4.1 Introduction

CASA takes a risk based approach to airspace regulation. Other Parts of the ARASMM call on risk assessments as part of other individual processes. Risk assessments are performed during regular reviews (Part 2), and the airspace change process (Part 3). The risk management policies and risk assessment methods in this section supports other Parts of the ARASMM.

The CASA RMF and CASA Risk Policy DAS-PN027-2011 define the policy and processes for risk management. In accordance with the CASA RMF all operational areas have a responsibility to ensure their functions (the specific roles each area is tasked with) are fully supported by appropriate risk management practices and that specific risk management instructions will be developed with respect to safety risk management and other operational activities as identified. The CASA policy and processes do not specifically articulate risk evaluation, acceptability and acceptance authority for Groups or Branches.

CASA’s risk appetite is defined though the application of a risk tolerance matrix contained within the RMF which incorporates the ‘As Low As Reasonably Practicable’ (ALARP) principle for evaluating risks.

The risk evaluation process compares the results of the analysis of the adequacy of airspace safety, protection of the environment, efficient use of airspace, equitable access to airspace and national security with the risk consequence and likelihood criteria established for the risk assessment. This analysis uses OAR or stakeholder generated post additional risk treatment values of the likelihood of the risk occurring and the magnitude of its associated consequence to determine the residual risk. Those risks that are acceptable are accepted and monitored. Those that require further treatment are referred to the OAR Manager or the relevant ANAA Manager for consideration.

4.2 Hazard identification

A hazard is anything that could cause harm, damage or injury, or have a negative consequence, such as bad weather, mountainous terrain, high workload/fatigue or use of alcohol and other drugs. There are many ways of identifying hazards and quantifying risks, but to do it successfully you have to think laterally, unencumbered by past ideas and experiences. Operational hazards can be obvious, such as lack of training or local knowledge of the airspace environment. In other cases they may be subtle, such as the insidious effects of long term fatigue.

There are several useful methods of identifying hazards:

- brainstorming - small discussion groups meet to generate ideas in a non-judgmental way
- formal review of standards, procedures and systems
- staff surveys or questionnaires
- one person standing back from the operation and monitoring it critically and objectively
- internal or external safety assessments
Hazard identification generally involves three steps:

- stating the generic hazard (hazard statement) e.g. considerable increase in air traffic due to special event
- identifying specific components of the hazard e.g. lack of local knowledge or poorly articulated procedures
- identifying project-specific risk/s associated with each hazard e.g. potential breakdown of separation.

### 4.3 Airspace sector risk profile

The Australian Airspace Sector Risk Profile (AA-SRP) exists to inform all the phases of the ARASMM process about hazards and risks in the airspace sector. The AA-SRP is a combined assessment of all the risks within the total Australian airspace volume, assessed within a five-year period, covering risks created by:

- hazardous operation within and between aircraft and other airspace users
- location topography
- weather patterns
- flying wildlife patterns
- the adequacy or otherwise of the airspace classification, dimensions, design, services and operating hours.

The AA-SRP relies heavily upon accident, incident, terrain, wildlife and weather related data for the first three dot-point aspects and a review of airspace architecture and design and flight procedure containment risks for the last dot-point item. The AA-SRP identifies and categorises the airspace risks within the aerodrome, en route and PRD areas airspace.

### 4.4 Risk assessments

In line with the Australian/New Zealand Standard on Risk Management – Principles and Guidelines (AS/NZS ISO 31000:2009), the OAR has a process for identifying, analysing, evaluating and treating risk. In addition, the OAR follows the guidance described in the AAPS for changing the class or designation of a volume of airspace.
The overall process used by the OAR for the risk management of airspace is based upon the principles in Figure 4.1 but can follow many forms. A key process commonly utilised by the OAR is an Aeronautical Study. Aeronautical studies are conducted in line with AS/NZS ISO 31000:2009.

4.4.1 Identifying risk (establishing the context)

The OAR identifies risk by assessing aircraft movement data, passenger data, safety incident and accident data and stakeholder feedback. Stakeholder feedback can come in many forms such as intelligence received from private entities, organisations or industry.

Feedback may also come to the OAR through various consultative channels. Part 5 gives further detail on the various Consultative forums utilised for this purpose.

4.4.2 Analysing and evaluating risk

The OAR undertakes quantitative and qualitative analysis and evaluates risk by using recommendations from a combination of sources and methodologies:

- AS/NZS ISO 31000:2009
- ICAO’s Safety Management Manual
- Common Risk Management Framework (CRMF)
- due diligence utilising a precautionary approach.

In addition, in accordance with the AAPS, the OAR seeks to ‘ensure that appropriate airspace arrangements are in place at major regional aerodromes regularly served by passenger transport services which respond to changes in aviation activity over time.'
Not all organisations who will propose an airspace change will have an established airspace risk management framework. A template and guidance consistent with the processes above is provided to assist these organisations as CASA Form 1589 - Airspace Risk Assessment Template.

4.4.3 OAR use of the ICAO analytical methods and tools

Not all methods and tools are used in all situations; rather the OAR uses those that are most appropriate for the task at hand. The following summarises the way OAR uses each of the ICAO methods and tools.

4.4.4 Statistical analysis

The OAR collects aeronautical data for statistical analysis including:

- aircraft movement numbers
- passenger numbers
- review of incident and accident data.

Statistical analysis allows the OAR to create trend analyses, develop and test hypotheses, make recommendations for aerodromes and selected airspace volumes. The process also provides data for predicting and forecasting changes to the AAS.

4.4.5 Normative comparison

The OAR uses Normative Comparison to compare aircraft movement numbers and passenger numbers at different locations around Australia and, if similarities exist, with locations in other jurisdictions. These comparisons may be considered in support of airspace determinations.

4.4.6 Simulation and testing

The OAR makes use of a variety of simulation tools to model current airspace. These tools can also be used for scenario analysis studies and to assess alternative options. Simulation and testing are used as planning tools or to conduct analyses and feasibility studies of airspace risk and should be considered purely indicative in their output.

4.4.7 Fault Tree Analysis

Fault tree analysis is a top down, deductive failure analysis in which an undesired state of a system is analyzed using Boolean logic to combine a series of lower-level events.

The OAR uses fault tree analysis to understand how aviation operations can fail, to identify the best ways to reduce risk or to determine event rates of a safety accident or a systemic or functional failure.

4.4.8 Expert Panel

The OAR accesses expert panel input on a regular basis through both internal and external means. Expert panel input can be sourced from the RAPACs, and on a case-by-case basis through generative interviews and by invitation to stakeholders. In many cases this is to obtain comment on draft aeronautical studies published on the CASA website. From time-to-time, the OAR may also facilitate Hazard Identification (HAZID) Workshops to address specific issues.
4.4.9 Common Risk Management Framework

The CRMF provides high level guidance to aviation agencies in their risk management activities.

The CRMF lays down the agreed structure and processes to be followed by the aviation agencies and supports a consistent approach to risk management in relation to airspace and air traffic management.

4.4.10 Treating risk

Following analysis and evaluation of risk, the OAR develops and assesses various risk treatments which are then evaluated by a team of specialists appropriate to the risk being treated to ensure residual risk is ALARP. As part of this risk treatment wider stakeholder consultation may be deemed appropriate, the volume of airspace reviewed or the present airspace architecture and usage reviewed.

4.4.11 Risk monitoring and review

The OAR, as part of its daily business, monitors and reviews traffic movement data, incident and accident data, where necessary carrying out trend analysis to identify airspace requiring further analysis.

The OAR uses this data in conjunction with intelligence received from a variety of private and industry sources to inform airspace assessments as detailed in Part 2.

4.5 Environment assessment

ACP for PRD established for public safety including safety of aircraft in flight and security require an assessment for their impact on any known matters of national environmental significance. The airspace change proponent can complete this assessment by accessing the Protected Matters Search Tool. The Search Tool provides an Environment Protection and Biodiversity Conservation Act (EPBC) 1999 Protected Matter Report. The Report is checked by the OAR Environment Specialist (ES) to ensure there are no aviation threats to matters of national environmental significance.

The environment assessment process for PRD established for Public safety including safety of aircraft in flight and security involves a number of steps:

- proponent completes the ACP form
- ES assesses ACP form
- ES reviews the Protected Matter Report attached to the ACP
- ES endorses the ACP or refers the proponent to the Commonwealth Department of Environment.

ACP for PRD established for the protection of the environment require a detailed environmental assessment. A complete Environmental Impact Assessment, if completed, may be used as evidence to support the ACP. If an Environmental Impact Assessment has not been completed as a minimum Casa Form 080 – Office of Airspace Regulation Environment Implications should be completed.

ACP for the protection of the environment are assessed for environmental effects according to CASA’s obligations under the Act, the Regulations and EPBC Act.
The environment assessment process involves a number of steps:

- the proponent completes an ACP
- the ES assesses ACP form responses
- the ES approves assessment with or without conditions, or requests further information by requesting that the proponent complete CASA Form 080 – Office of Airspace Regulation Environment Implications
- the ES assesses EI form responses.

ES approves assessment with or without conditions. EPBC Act issues should be referred by the proponent to the Commonwealth Department of Environment.
5. Data, information and stakeholder management

5.1 Introduction
This section describes the inputs to the Manual and how they are managed. Inputs include a range of data types from various sources, stakeholder reports, feedback and comments.

5.2 Stakeholder management
Regular and ongoing consultation and input from stakeholders on airspace reviews, aeronautical studies, airspace issues, operational assessments and proposed airspace changes is a critical part of airspace administration. The OAR engages regularly with stakeholder groups and individuals including government authorities, ANSP, commercial stakeholders, private operators and other relevant bodies and organisations where appropriate.

The OAR website is the primary mechanism by which the OAR makes reports available to stakeholders. The aim of the website is to provide an informative and readily accessible interface with stakeholders on airspace activities, while providing information of general interest to a wider audience.

The method and scope of the consultation undertaken by the OAR is dependent on the task being undertaken. Stakeholders may include, but are not limited to:

- Aerodrome Operators
- ANSP
- Airline, charter and general aviation operators
- Airspace and Aerodrome Consultative Forum (AACF)
- Aviation Safety Forum
- Defence
- Department of Infrastructure and Regional Development
- Emergency services
- CASA (Aviation Safety Advisors, Flight Operations Inspectors, Aerodrome Inspectors, CNS/ATM Inspectors)
- Air Traffic Service specialists
- Local or State Government
- Other aerodrome users
- Private and recreational/sports pilots
- RAPAC
- Standards Consultative Committee
- National aviation organisations such as ABF, AOPA, APF and RA-Aus
- Any other interested parties.
5.2.1 Stakeholder engagement – airspace reviews and assessments

As part of the OAR’s process of regularly reviewing Australian-administered airspace (refer to Part 2) and conducting airspace proposal assessments (Part 3), stakeholders are consulted to gather feedback regarding the airspace under review or proposal/request under assessment.

Feedback provided by stakeholders will be considered in conjunction with other elements (e.g. traffic data and incident reports) to determine the appropriateness of the airspace arrangements as part of an airspace assessment.

The OAR specialist conducting an airspace review is responsible for identifying relevant stakeholders and seeking their input through the most appropriate means. Relevant stakeholders may be identified through a combination of different methods including:

- previous airspace reviews
- airline flight schedules
- aerodrome operators
- locally based aircraft operators
- flight tracking websites
- aviation associations, clubs and groups
- aircraft type movement data
- flight plan data.

The OAR may consult with stakeholders via phone, email, standard letter, surveys and face to face during site visits. Proponents of an airspace change are expected to provide evidence to the OAR of appropriate consultation commensurate with the change proposed. The OAR may also require the proponent to consult with other organisations where appropriate, to:

- consider the needs of aircraft operators/owners and other users likely to utilise the airspace, or their representative organisations
- ensure that the change allows the ANSP to maintain a safe, orderly and expeditious flow of air traffic
- satisfy any consultative requirements of the AAPS.

The proponent will be advised of the consultation requirements associated with the proposed airspace change.

5.2.2 Stakeholder details management

The OAR stores stakeholder details in a central database within CASA’s record management system. During the conduct of stakeholder engagement activities OAR staff members are responsible for updating stakeholder details as appropriate.

5.2.3 Stakeholder analysis

Stakeholder analysis helps to identify and contextualise the issues of concern raised by stakeholders. The following guidance should be considered when conducting stakeholder analysis:

- who are the stakeholders
- what are the stakeholder’s backgrounds that may influence their needs, issues and concerns
• will an activity or decision impact stakeholders
• do stakeholders perceive they are at risk as a result of an activity or potential decision
• does a stakeholder have a high, medium or low interest in the issue
• consider stakeholders’ needs, issues and concerns related to the issue and how they might be met
• consider stakeholders’ current level of knowledge with respect to the issue
• consider any significant knowledge gaps or misconceptions stakeholders may have
• consider what communication processes stakeholders may prefer.

5.2.4 OAR web page

The OAR has a dedicated section of the CASA website which is the primary mechanism which the OAR utilises to consult with representatives from the aviation industry and to convey information to the wider community. The web page contains information about the OAR, airspace, environment, consultation, regulatory responsibilities, RAPAC meeting dates and previous minutes, published papers and reports and contact details.

OAR Web page:

The information published on the OAR web page is reviewed on a six monthly basis to ensure published material remains valid. Airspace assessments and other papers should be archived on the Papers and Reports page every six months.

OAR team members shall ensure that any information which is to be placed on the OAR web page has been cleared by the OAR Manager. Details on the process to follow to update the OAR web page are contained within the appropriate OAR Work Instruction.

5.3 Data

A critical component of the Manual, particularly the airspace review process and the airspace change process, is the evaluation of data. Data analysis allows the OAR to better understand the local aviation activity and safety incidents.

It is important that all reasonable precautions have been taken to ensure that the data being reviewed is as accurate and reliable as possible. This can be done by consulting with the airspace users, industry bodies and aerodrome operators to determine whether the data is valid, reliable and how appropriate and representative the data is, of actual activity.

Data is gathered from a number of sources including, but not limited to:

• Aerodrome operators
• Airline schedules
• Airservices
• Defence
• ATSB
• The Bureau of Infrastructure, Transport and Regional Economics (BITRE)
• Third party monitoring services (e.g. Avdata Australia Pty. Ltd, HoekSec Pty. Ltd).
Note: It is critical that OAR specialists identify, consider and make allowances for the sources of the data in use and any associated limitations.

The following sections describe the regular types of data utilised by the OAR.

**Aircraft and passenger movement data**

Aircraft and passenger movement data is specific to individual aerodromes and is the OAR’s primary indicator of aviation activity.

**Airservices Movement Data**

Airservices is the primary data source for aircraft and passenger movement data.

**Bureau of Infrastructure, Transport and Regional Economics**

BITRE data consists of international, domestic, and regional passenger transport services. It is important to note that the data only includes passenger and aircraft movement data on scheduled regular public transport services at selected Australian airports, it does not include charter or other non-scheduled activity. Generally the BITRE aircraft movements are usually less than the Airservices IFR scheduled air transport movements.

**Other Aircraft and Passenger Movement Data Sources**

In addition to Airservices and the BITRE aircraft and/or passenger movement data can be gathered from other sources. The OAR may source aircraft and/or passenger movement data from other sources which include but are not limited to:

- Aerodrome operators
- Defence
- Local aircraft operators
- Third party monitoring services (e.g. Avdata Australia Pty. Ltd, HoekSec Pty. Ltd).

Where movement data is not available, of low quality or does not adequately capture the desired activity, the OAR may conduct movement monitoring activities on site or make arrangements with a local third party to monitor aircraft and/or passenger movements for a short period.

**5.3.1 Safety incident data**

Safety incident data is utilised in various areas of the ARASMM to indicate current and historic levels of risk/safety and is analysed to identify potential airspace issues and trends.

**ATSB Aviation Safety Incident Reports (ASIR)**

The ATSB is CASA’s primary source for safety incident data. All incidents and accidents involving Australian registered aircraft, or foreign aircraft in Australian airspace must be reported to the ATSB. Large quantities of ASIR data for particular applications and special projects may also be requested through CASA Information Management Team.

**5.3.2 Flight Plan Data**

The OAR may request flight planning data from Airservices to enhance the understanding of aviation activity as part of aeronautical studies, airspace reviews, risk assessments and other specific projects. Flight plan data is of particular use for the review of en route airspace.
The OAR may also request flight planning data in a file format suitable for use in the Total Airspace and Airport Modeller software tool (refer to Part 6).

### 5.3.3 Surveillance data
Surveillance data provides accurate traces of aircraft ground tracks and may be used to more accurately review local traffic patterns, particularly in complex terminal areas (e.g. Sydney Basin). Combining surveillance data with relevant airspace design information allows for a detailed assessment of airspace volumes with respect to flight trajectories.

### 5.4 Aeronautical Information and Data
Aeronautical information and data are critical components in the administration of Australia’s airspace. The Designated Airspace Handbook (DAH) is the source document for classifications and designated airspace and air routes, which forms part of the integrated

During airspace assessments, OAR specialists review airspace related published aeronautical information and data and consider stakeholder comments regarding relevant publications. Airspace assessments (refer to Part 2) may recommend changes to airspace volumes, routes or related details/information which in turn is reflected in the published information and data.

Airspace operations activities (refer to Part 3) may result in changes to airspace volumes, routes or related details/information which must be reflected in published information and data. Temporary and permanent changes shall be notified or published via the most appropriate means with consideration given to:

- safety implications associated with any change
- the effective date/urgency of the change
- the duration of a temporary change
- the size and number of stakeholders affected by any change.

### 5.4.1 Aeronautical Information Package
The integrated AIP is the OAR’s primary source of airspace related aeronautical information and data. Airspace changes made or approved by the OAR will be reflected in the integrated AIP. The integrated AIP is made up of the following documents and includes (but is not limited to) the following airspace related information:

- AIP Book
- AIP Supplements and Aeronautical Information Circulars
- Departure and Approach Procedures
- DAH and aeronautical charts
- ERSA.

Electronic versions of AIP documents and charts are published by Airservices and are available on their website [Aeronautical Information Publication (AIP)](https://www.airservices.gov.au).

### 5.4.2 Airspace related AIP amendments
The integrated AIP is routinely updated throughout the year in line with international publication cycles. Details regarding the publication cycle and associated cut off times for changes to take effect in future cycles can be found on the Airservices Publications.
(Document Amendment Calendar) website. More information on selecting an AIRAC effective date for a change is at paragraph 3.2.3.

5.4.3 CASA Aeronautical Database

Reserved
6. Support tools and services

6.1 Introduction
This section describes the support tools and services the OAR utilises within the ARASMM process.

6.2 Google Earth
Google Earth is a geographic information system that presents topographical maps and satellite images of the Earth which can be enhanced by various overlays such as grid references and diagrammatic information.

The OAR uses the Google Earth application with an Australian airspace overlay to view airspace, map and terrain data, suburban areas and aerodromes.

6.3 MicroStation
MicroStation is a computer aided drafting system that enables the user to draw polygons which have associated geospatial referencing.

The OAR uses MicroStation to check airspace designs or to design airspace volumetric changes or solutions to satisfy the operational requirements for airspace.

6.4 IDS Software Package
The IDS Software package is a computer aided drafting system that enables the user to design IFP which have associated geospatial referencing to the airport at which they are located.

The OAR uses the IDS Software Package to check or design IFPs to satisfy the operational requirements for flight procedures inside and outside of controlled airspace.

6.5 Total Airspace and Airport Modeller
The OAR makes use of the Jeppesen Total Airspace and Airport Modeller (TAAM) for scenario analysis studies and to assess alternative options. Simulation and testing are used as planning tools or to conduct analyses and feasibility studies of airspace risk and should be considered purely indicative in their output.

6.6 CASA Standard Operating Environment
The CASA Standard Operating Environment (SOE) provides both fixed and transportable IT equipment with standard imaging including Microsoft software suite. The OAR uses the CASA SOE to describe, depict, calculate, assess and present many aspects of the classification, dimensions, design and services of airspace.
6.7 **Internal departments within CASA and other agencies**

The OAR routinely works with CASA Groups and with Defence which has a collocated Defence Liaison Office. There is also a close working relationship with Airservices.

6.8 **Intra-Agency Data**

The OAR routinely works with the following agencies to obtain and exchange information:

- Airservices
- ATSB
- Bureau of Meteorology
- BITRE
- Defence.

6.9 **Specialist aviation guidance, workshops and consultation groups**

The OAR routinely consults specialist aviation organisations. Consultation may be in the form of workshop and consultation groups such as the RAPAC. CASA completes consultation in order to gather advice and feedback about specific aspects of airspace provision and operation or about the aviation operations and trends at particular locations.

6.10 **Consultant and Contractor Services**

The OAR may engage external consultants for specific projects or tasks. Consultants may be contracted to perform a range of functions which may include but are not limited to:

- capturing aircraft and/or passenger movement data
- conducting airspace assessments
- conducting risk assessments
- data analysis
- other functions as required by the OAR Manager.

Engagement of consultants are subject to CASA’s procurement policy.

6.10.1 **Consultant Guidance**

The following guidance is to be followed by OAR Contract Managers when engaging consultants for OAR funded activities:

- inform the OAR Manager of intention to seek external contract services
- generate an Enterprise Document and Records Management System file for saving all contract process correspondence regarding the contract process
- raise a business case for approval by ANAA Branch Manager and Aviation GM as appropriate
- complete the procurement according to the CASA Procurement Manual.
7. OAR Work Instructions (OWI)

7.1 Introduction
OWI provide the procedural/technical level of detail to assign and conduct ARASMM tasks and activities.

7.2 Authority and sponsor
OWI detail the responsibilities for the assignment and completion of tasks and activities in a standardised and consistent manner. When approved, an OWI is attached to the applicable ARIS process diagram. OWI are sponsored by the Airspace Reform and Airspace Operations Team Leaders and are approved by the OAR Manager. Any OAR Officer can recommend the development of an OWI through their Team Leader to the OAR Manager.

7.3 OWI structure
The OWI are structured functionally as described below:
- 00 – Executive Instructions (ANAA Manager and Manager OAR determinations) like this one
- 01 – Personnel (hiring, PACS and leave)
- 02 – Airspace data
- 03 – Airspace operations (ACP et al)
- 04 – Airspace Reviews and Assessments
- 05 – Plans (work program, BRMP etc)
- 06 – IT and communications
- 07 – Training
- 08 – Budgets and finance
- 09 – CASA Defence cooperation.

7.4 OWI content
The OWI should provide sufficient detail so that OAR staff can identify the responsible task and activity owner and how to complete the task in a standardised and consistent way. The following provides guidance on the elements to be included in an OWI.

Each procedure should address, where required:
- what must be done
- who should do it
- when it must be done
- where it must be done
- how it must be done
- record-keeping
- how the procedure is monitored and improved.
7.5 Using OWI
This manual and ARIS, the CASA business process management publisher, makes reference to a number of OWI that detail how to complete individual tasks. Availability of an OWI within a process can also be identified by the light blue elements in the process diagrams in this manual.

7.6 Accessing OWI
Authorised OWI are stored in the Enterprise Document and Records Management System within the file F15/8436.

7.7 Review of OWI
OWI must be reviewed at least annually or as required following changes to the legislative framework, integrated AIP, CASA Policy or as required as directed by the OAR Manager.
Appendix A. Receive request for airspace change process

![Diagram of Receive Request for Airspace Change process]

- **KPI - Temporary and Permanent Airspace Change**: The ACP has been reviewed and the proposal assessed no later than 15 working days from receipt.
- **KPI - Temporary Airspace Change**: A completed request for ACT will be considered no later than 10 working days from receipt. Incomplete ACT requests will be considered no later than 15 working days from receipt. Additional information required.
- **KPI - Permanent Airspace Change**: A completed request for AP will be considered no later than 10 working days from receipt. Incomplete AP requests will be considered no later than 15 working days from receipt. Additional information required.

Figure A-1: Receive request for airspace change process
Appendix B. Assess proposed airspace change process

Figure B-1: Assess proposed airspace change process
Appendix C. Finalise recommendation and issue airspace change process

Figure C-1: Finalise recommendation and issue airspace change process
Appendix D. Urgent airspace change process

Figure D-1: Urgent airspace change process