

# ICAO APAC SITF/10 WP/8

presented by Australia

## DRAFT ICAO APAC Guidance Material

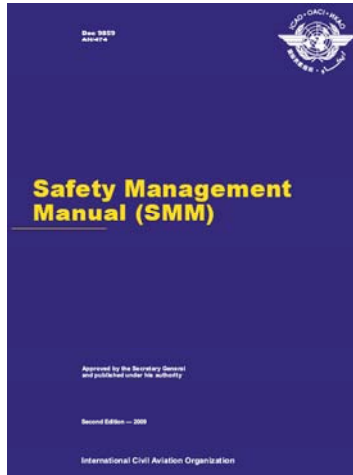
### Building a Safety Case for a Surveillance Service

for consideration by SITF/10

#### Guidance Material for Building a Safety Case for a Surveillance Service

- Guidance material does not try to reinvent anything – relies on references to 2 existing ICAO Docs and one RTCA/Eurocae doc.
- Two Parts:
  - Part A: Generic aspects of developing a safety case for any airways system or service
  - Part B: Specific elements of a safety case for an ADS-B based surveillance service

**Generic reference - HazID and Risk Management**  
**ICAO DOC 9859 Safety Management Manual**  
**Chapters 4 and 5**  
[www.icao.int/icaonet/](http://www.icao.int/icaonet/)



Specific reference for ADS-B and MULTILAT services : ICAO Circular 326  
[www.icao.int/icaonet/](http://www.icao.int/icaonet/)

Cir 326  
 AN/188



**Assessment of ADS-B and Multilateration Surveillance to Support  
 Air Traffic Services and Guidelines for Implementation**

**Notice to Users**

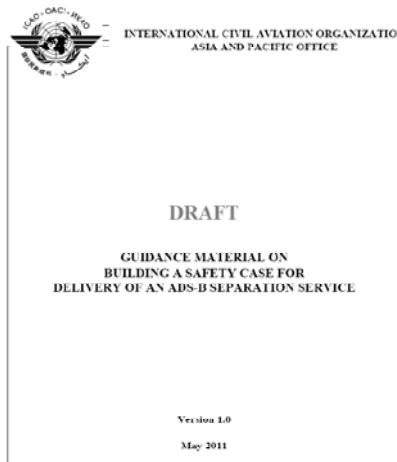
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**Advance edition (unedited)**

Specific reference for ADS-B safety case preparation:  
RTCA DO-303/EUROCAE ED-126 - Dec 2006  
Safety, Performance and Interoperability Requirements  
Document for the NRA Application



Draft Guidance Material on Building a Safety Case for  
Delivery of an ADS-B Service



## **Guidance Material – Contents**

- **Introduction**
- **Definitions**
- **PART A Generic Guidance on Safety Case Preparation – ICAO Doc 9859 (also CASA Australia CAAP)**
- **PART B Specific Elements For Inclusion in Safety Case Covering ADS-B Based Surveillance System ICAO Circ 311 + RTCA Do-303/Eurocae ED-126**
- **Attachments**

## **Part A: Generic Guidance on Safety Case Preparation**

- What is a Safety Case
- Generic contents of a Safety Case
- Safety Planning
- A Safety Case may have several discrete parts over the system lifecycle
- STEP 1 – State the Purpose and Scope of the Safety Case
- STEP 2 – Develop and document the safety objectives and safety requirements
- STEP 3 – Develop a Safety Risk management methodology
- STEP 4 – Process for Hazard Identification and Analysis
- STEP 5 – Establish the Safety Risk of each Hazard
- STEP 6 – Establish the Safety Risk Assessment Criteria
- STEP 7 – Process for Risk Control and Mitigation
- STEP 8 – Document and Track the Hazards and the Risks
- STEP 9 – Safety case coverage over the lifecycle of the surveillance system
- STEP 10 – Authority for issue and change of the safety case

## Part B: Specific Elements for Inclusion in a Safety Case Covering ADS-B Surveillance System

- **References**
- STEP 11 – State Implementation Roadmap  
(ICAO Circ 326)
- STEP 12 – Example of Safety Case for ADS-B NRA
- STEP 13 – Safety Case Contents
- Attachment A – Safety Case Coverage for a Four Part Safety Case
- Attachment B – Sample Headings and Content for an ADS-B System Design and Implementation Safety Case

## Four Part Safety Case to cover airways system lifecycle

- **Part 1: Operational Requirements Phase**
  - contains safety objectives and corresponding safety requirements of the surveillance system
- **Part 2: Design and Procurement Phase**
  - Parts 1 and 2 might be combined
  - Contains evidence that system design meets safety requirements
- **Part 3: Implementation Phase**
  - Safety analysis following installation and integration
  - Testing plan and results
- **Part 4: Normal Operations Phase**
  - Includes additional hazards arising during routine operations