Agenda Item 3: AIS MANUAL (DOC 8126) Part I

Jodi Brainard

CAR/SAM Seminar / Workshop on DOC 8126,
Part I and PANS-IM

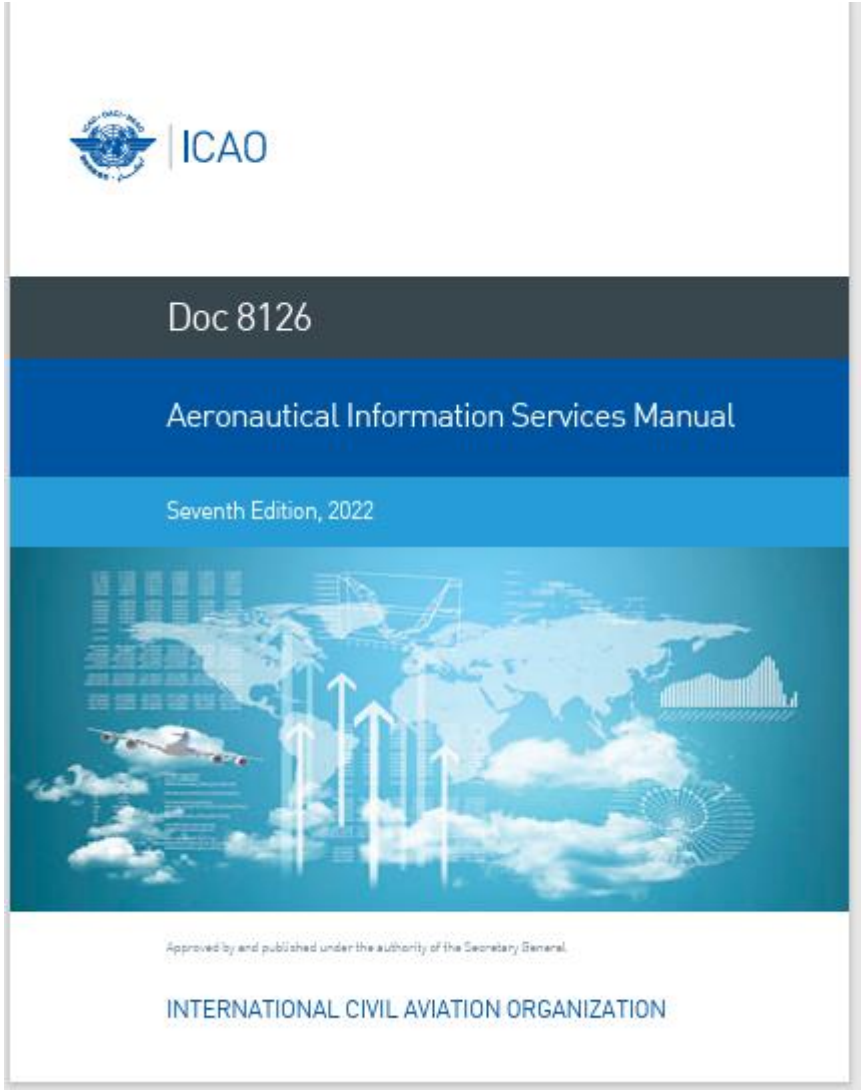
11-14 March 2024

ICAO

01

DOC 8126: Part I

Regulatory Framework for Aeronautical Information Services



ICAO

What does Part I cover?

- States' responsibilities and functions
- Aeronautical information service providers' responsibilities and functions
- Aeronautical data originators' responsibilities
- Aeronautical information management

ICAO

Part I

State Perspective

State Safety Oversight – 8 critical elements

- CE-1: primary aviation legislation
- CE-2: specific operating regulations
- CE-3: State system and function
- CE-4: qualified technical personnel
- CE-5: technical guidance, tools and provision of safety critical information
- CE-6: licensing, certification, authorization and approval obligations
- CE-7: surveillance obligations
- CE-8: resolution of safety issues

CE-1: PRIMARY AVIATION LEGISLATION

CE-2: SPECIFIC OPERATING REGULATIONS

Specific AIM operating regulations should include, but are not limited to:

a) transposition of the relevant ICAO provisions (e.g. Annex 4 — Aeronautical Charts, Annex 15 — Aeronautical Information Services and the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066));

b) requirements for formal arrangements between the AIS and aeronautical data originators;

c) requirements for AIS;

d) quality management system (QMS) requirements; and

e) any other regulatory criteria to support the provision of AIS

CE-3: STATE SYSTEM AND FUNCTIONS

- National legislation should provide for an appropriately organized, funded and empowered civil aviation system

CE-4: QUALIFIED TECHNICAL PERSONNEL

- Establish minimum qualification requirements for the personnel involved in oversight activities
- AIS inspectorate should have appropriate prior experience and subsequent training to maintain / enhance their competences

CE-5: TECHNICAL GUIDANCE, TOOLS AND PROVISION OF SAFETY CRITICAL INFORMATION

- Provide
  - appropriate facilities,
  - comprehensive and technical guidance material and procedures,
  - tools (including software tools),
  - Equipment,
  - transportation means, as applicable, to technical personnel to perform their safety oversight functions
- Specify how to evaluate compliance

CE-6: LICENSING, CERTIFICATION, AUTHORIZATION AND APPROVAL OBLIGATIONS

- Flexibility for establishing the authority for the provision of aeronautical information products and services
- Must have a regulatory framework;
    - Recommend ICAO competency framework for AIS
- Coordination between States
- Establishment of bilateral or multilateral working arrangements between one or more neighbouring States

CE-7: SURVEILLANCE OBLIGATIONS

- Implement well-documented surveillance processes
- Proactively assure that AIS providers continue to meet the established requirements
- Surveillance activities should be carried out on:
  - Quality standards
  - Formal arrangements with data originators
  - Quality Management System
  - Validation and verification

CE-8: RESOLUTION OF SAFETY ISSUES

- Establish effective mechanisms to identify non-compliance in the provision of AIS
- Follow-up action if AIS unable to meet or maintain the required standards

Part I

AIS Provider Perspective

AIS Provider

- Responsibilities and functions
- Organization of an AIS: organizational structure designed around **processes**, not products
- **Checklist**: steps to set-up an AIS organization
- Aeronautical Information Products and Services & Tools and Software
- **Guidance concerning AIS/AIM competencies**

Appendix B ANNEX 15 COMPLIANCE CHECKLIST				
CHAPTER 3: AERONAUTICAL INFORMATION MANAGEMENT				
Annex 15 (15th Edition)		*Annex 15 (16th Edition)*		
Paragraph No.	*Text of Standard*	*Paragraph No.*	*Text of Standard*	*Assessment*
3.1	The information management resources and processes established by an aeronautical information service (AIS) shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system.	3.1	The information management resources and processes established by an aeronautical information service (AIS) shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system.	No change
3.3.1	The order of accuracy for aeronautical data shall be as specified in Annex 11, Chapter 2, and Annex 14, Volumes I and II, Chapter 2. In that respect, three types of positional data shall be identified: surveyed points (runway thresholds, navigation aid positions, etc.), calculated points (mathematical calculations from the known surveyed points of points in space/fixes) and declared points (e.g. flight information region boundary points).	3.2.1	The order of accuracy for aeronautical data shall be in accordance with its intended use.	Reference of order of accuracy to Annexes 11 and 14 deleted. Distinction of three types of positional data relocated to PANS-AIM.
3.3.2.1	The order of publication resolution of aeronautical data shall be as specified in Appendix 7.	3.2.2	The order of resolution of aeronautical data shall be commensurate with the actual data accuracy.	Reference of order of resolution to App 7 deleted
3.3.3.2	The integrity of aeronautical data shall be maintained throughout the data process from survey/origin to distribution to the next intended user (the entity that receives the aeronautical information from the AIS provider).	3.2.3.1	The integrity of aeronautical data shall be maintained throughout the data chain from origination to distribution to the next intended user.	Using the term "Data Chain"

Appendix C
PANS-AIM COMPLIANCE CHECKLIST

Chapter 4: AERONAUTICAL DATA REQUIREMENTS

PANS-AIM (incl. Amendment 1)		*Annex 15 (15th Edition)*		
Paragraph No.	*Text of Standard*	*Paragraph No.*	*Text of Standard*	*Assessment*
4.1.1	Data shall be collected and transmitted to the aeronautical information service (AIS) in accordance with the accuracy requirements and integrity classification specified in Appendix 1.	---	---	NEW Standard
4.1.2	Positional data shall be classified as: surveyed points (e.g. navigation aid positions, runway threshold); calculated points (mathematical calculations from the known surveyed points of points in space, fixes); or declared points (e.g. flight information region boundary points).	3.3.1	The order of accuracy for aeronautical data shall be as specified in Annex 11, Chapter 2, and Annex 14, Volumes I and II, Chapter 2. In that respect, three types of positional data shall be identified: surveyed points (runway thresholds, navigation aid positions, etc.), calculated points (mathematical calculations from the known surveyed points of points in space/fixes) and declared points (e.g. flight information region boundary points).	No change to context or application / editorial amendment
4.1.3	Geographical coordinates indicating latitude and longitude shall be determined and reported to the AIS in terms of the World Geodetic System – 1984 (WGS-84) geodetic reference datum.	1.2.1.1	World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.	No change to context or application / editorial amendment
4.1.4	Geographical coordinates that have been transformed into WGS-84 coordinates by mathematical means and whose accuracy of original field work does not meet the applicable requirements contained in Appendix 1 shall be identified.	1.2.1.3	Geographical coordinates that have been transformed into WGS-84 coordinates but whose accuracy of original field work does not meet the requirements in Annex 11, Chapter 2, and Annex 14, Volumes I and II, Chapter 2, shall be identified by an asterisk.	Re-worded
4.1.5	In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Appendix 2 shall also be published.	1.2.2.4	In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Appendix 1 shall also be published.	No change to context or application / editorial amendment
4.2	The metadata to be collected shall include, as a minimum:	3.4.2	The metadata to be collected shall include, as a minimum:	No change to context or application / editorial amendment

Part I

Transitioning to AIM

Aeronautical Information Management

- AIM principles
- Implementing AIM in the State
  - How the regulatory approach changes in AIM
- Implementing AIM in an AIS
  - Focus on quality: provide users with info they can trust (QMS)
  - Focus on users : awareness of end-use requirements (feedback mechanisms)
  - Encourage digitalization
- Change management considerations

Thank You!

ICAO