



ICAO

UNITING AVIATION

AIS MANUAL (DOC 8126)

AIR NAVIGATION PROCEDURES FOR AIM SEMINAR

November 2018

Roberta Luccioli, ICAO AIM Technical Officer



Outline

- **New!** Restructured AIS Manual:
 - Volume I
 - Volume II
 - Volume III
 - Volume IV



AIS Manual

- **Volume I** – AIS Organizational Development
- **Volume II** – The Aeronautical Data Process
- **Volume III** – Aeronautical Information in a standardized presentation
- **Volume IV** – Digital Products and Services



Advantages

Easier maintenance



Global Overview

VOLUME I



Volume I: AIS Organizational Development

- State Responsibilities for aeronautical information services
- AIS Responsibilities and Functions
- Aeronautical Information Management



Volume 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

Volume 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**



AIS/AIM Competency Framework

Competency	Description
Information Awareness	Comprehends information requirements, monitors the information flow and detects anomalies and potential threats that can degrade the flow and the quality of information and affect its use.
Coordination	Comprehends and adheres to applicable formal arrangements and if required coordinates with originators, personnel in different operational positions and with other affected stakeholders to ensure that the agreed requirements are met.
Application of procedures	Identifies and applies data procedures in accordance with published operating instructions and applicable regulations and standards.
Information management expertise	Applies and improves technical knowledge and skills related to the collection, management, integration and provision of aeronautical data and information
Communication	Communicates effectively (in oral and written forms) under the operational situations (e.g. for briefings and publishing information).
Workload management	Manages available resources efficiently to prioritize and perform all assigned information tasks in a timely manner.
Team work	Operates effectively as a team member.
Self-management and continuous learning	Demonstrate personal attributes that improve performance and maintain an active involvement in self-learning and self-development

How a competency is described and observed...

Nr	ICAO competency	Description	Observable behaviour (OB)
1	Information Awareness	Comprehends information requirements, monitors the information flow and detects anomalies and potential threats that can degrade the flow and the quality of information and affect its use.	<ol style="list-style-type: none"> 1. Maintains awareness of the information requirements of the different users concerning aeronautical information 2. Verifies that aeronautical data is compliant with quality requirements (accuracy, resolution, completeness, format) on reception 3. Monitors the quality of aeronautical information from origination to distribution to internal and external stakeholders (integrity, timeliness, traceability) 4. Uses available tools to gather, monitor and comprehend the aeronautical information in its different status (collection, storage, processing, transfer) 5. Manages the aeronautical information in the user's context 6. Identifies and Manages potential threats that can cause degradation of aeronautical information flow or the quality (e.g. interruption of aeronautical data process) 7. Develops effective contingency plans based upon potential threats

Observable behaviour (OB):

A single job-related behavior that can be measured and/or observed.

Volume 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

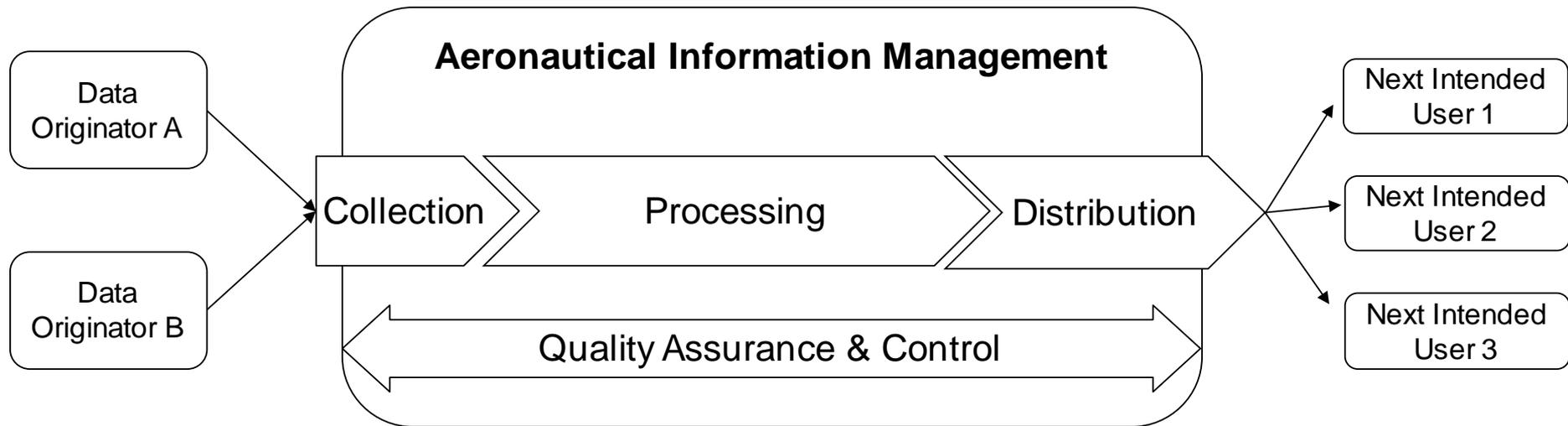


Global Overview

VOLUME II



Volume II: Aeronautical Data Process



How automation is applied to the aeronautical data process

Data Processing

PROCESSING



- Difference between validation and verification
- Validation and Verification as critical components of the Quality Management System
- Validation, examples of techniques:
 - Validation based on metadata
 - Plausibility check of the data
- Verification examples of techniques:
 - Digital data error detection
 - Feedback testing
 - Independent redundancy

Quality Assurance and Control

THE QUALITY SYSTEM



Quality Assurance (PROCESS)

- Data traceability
- Assurance of data integrity along the process

Quality Control (PRODUCT)

- Data error detection and reporting
- Quality checks to ensure compliance with product specifications
- Consistency checks across the information products

Automation



- Objectives and basic principles of automation
- Different levels of automation:
 - LEVEL 0: Manual
 - LEVEL 1: Data centric
 - LEVEL 2: Automated workflow
 - LEVEL 3: Full AIM environment

Service Level Agreement Template

DATA PROVISION AGREEMENT

between

*[the name of the entity receiving the aeronautical data or
aeronautical information];*
(hereinafter “The Data Receiver”)

and

*[the name of the entity providing the aeronautical data or
aeronautical information]*
(hereinafter “The Data Provider”)



Global Overview

VOLUME III



Aeronautical information products and services

Aeronautical information products

Standardized presentation

AIP, AIP Amendment, AIP Supplement

AIC

Aeronautical Charts

NOTAM

Digital data sets

AIP data set

Terrain and Obstacle data sets

Aerodrome mapping data sets

Instrument flight procedure data set

Services

Distribution services

Pre-flight information services

Post-flight information service

Volume III: AI in a standardized presentation



- Mostly relocated text from the existing AIS Manual
- Up to speed with the latest provisions (Annex 15, PANS-AIM)
- Electronic AIP (expanded guidance)
- NOTAM (expanded guidance, based on the OPADD material)
- General improvements (clarification of material when needed)



Global Overview

VOLUME IV



Volume IV: Digital Products & Services



- Aeronautical Information and data Exchange Models: what are they?
- AIXM:
 - Conceptual model
 - The encoding format
 - The extension mechanism
- Data product specifications
- Digital data sets (based on the AIXM confluence site):
 - Interoperability rules
 - Business rules
 - Coding rules



Thank You