Latest AIM Developments

George Baldeh

RO - AIM

Workshop for the development of AIS management and oversight for CAA's and ANSP's in the AFI Region (Nairobi, Kenya, 27th November – 1st December 2017

Outline

- Amendment 40 to Annex 15 (State Letter 2017/22)
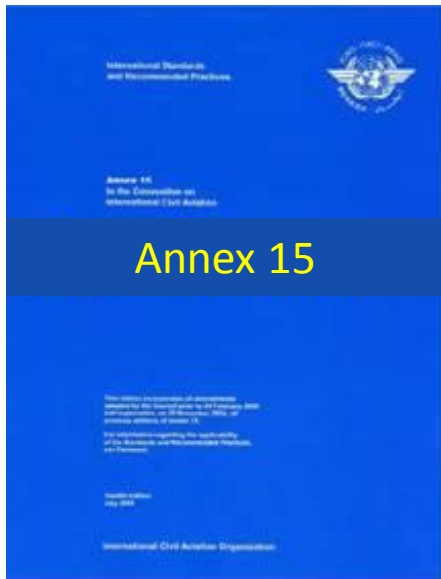
- AIS Manual

- Summary

Amendment 40 to Annex 15

- A three-years work delivered by the AIS-AIM Study group: **end of 2015**

- Revised by the Secretariat and submitted for preliminary review by the ANC in **November 2016**

- Translated in all 6 languages

- **State Letter 2017/22 sent on the 21 of April 2017**

- Responses by **21 July 2017**

- Amendment 40 applicable in 2018

- Changes to the SNOWTAM format: applicable in 2020

The Conceptual foundation for AIM

- Amendment 40 to Annex 15 creates **the conceptual foundation for AIM**
- Modern concepts on how to manage the aeronautical information
- Split Data collection/provision
- Focus on quality :
  – Data quality requirements are expanded
  – New tools to reinforce quality at origination/collection (Aeronautical data catalogue)
  – Better identification of roles and responsibilities in the aeronautical data process
  – Enhance requirements for validation and verification procedures
  – Data error detection
- Digital Data services
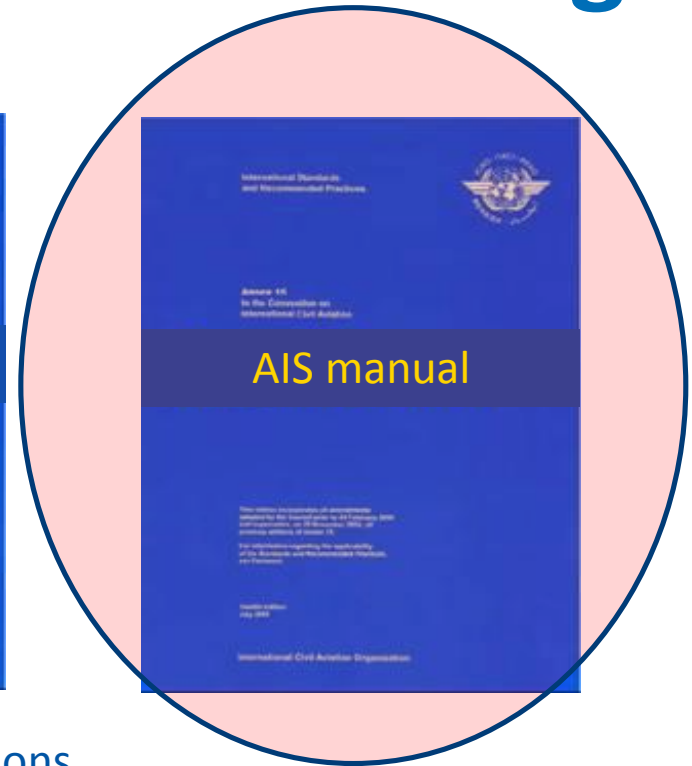- Many NOTAM distribution improvements

AIM documentation restructuring

Annex 15	PANS-AIM	AIS manual

- ✓ Requirements and performance specifications
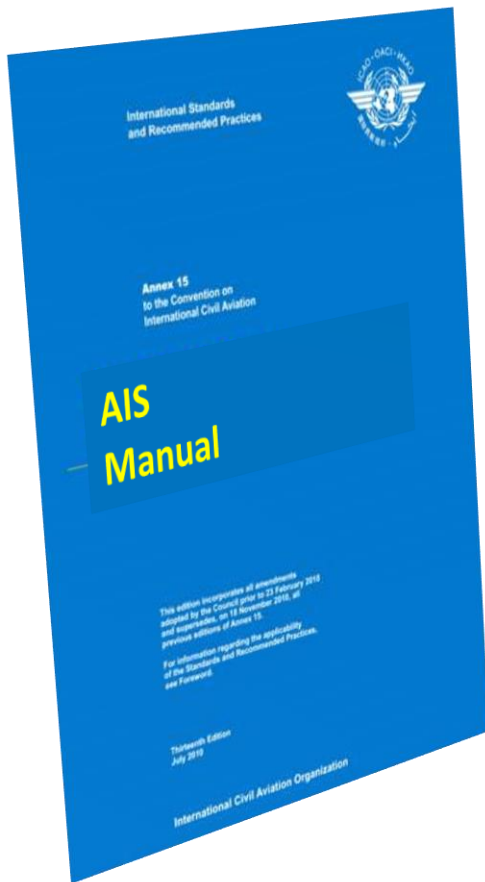- ✓ State provisions (or « what »)

- ✓ Operational provisions
- ✓ AIM Practitioners' instructions (or « how to »)

- ✓ Explanatory
- Guidance text

AIS Manual

- **First priority now!**
- AIS Manual (Doc 8126) is being amended in conjunction with the restructured Annex 15 and new PANS-AIM
- Delete redundant elements
- Bring it in line with the latest Annex 15 and PANS-AIM technical changes
- Expand guidance (AIM organizational development, Data Catalogue, Service Level Agreements, digital products and services, etc.)
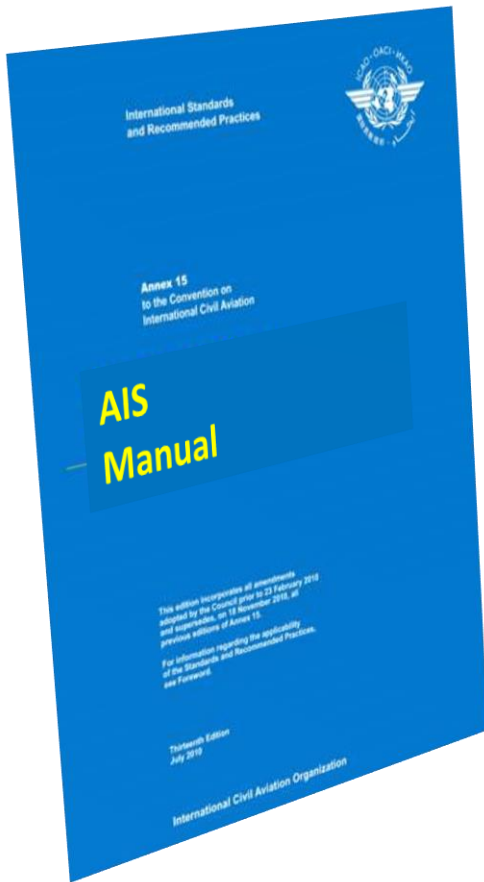
AIS Manual

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

Advantages

Easier maintenance

AIS manual– Volume 1

Purpose

Guidance concerning the organizational aspects of an AIS/AIM organization

Primary Audience

State Authorities and AIS management

AIS manual– Volume 1

The guiding principles to *AIS MANUAL – Volume 1*
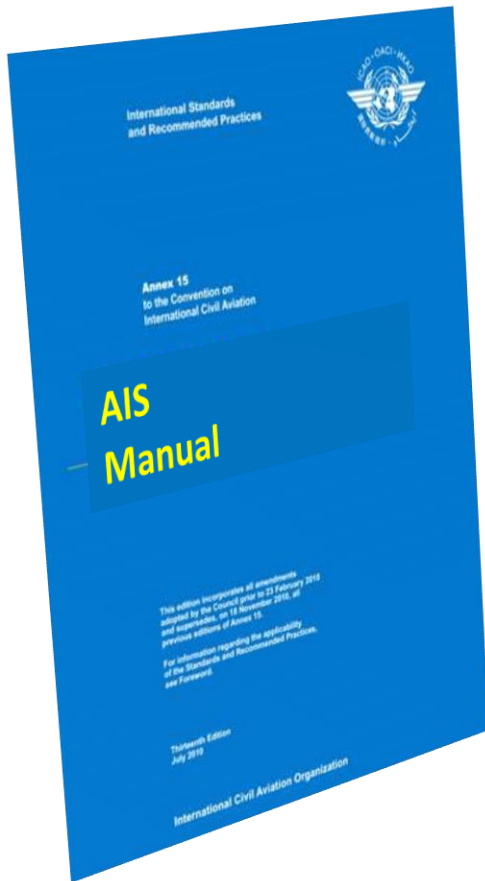
- AIS main functions and responsibilities
- Critical elements in the AIM environments
    - to provide users with information they can trust (**Quality Management System**)
    - More awareness of the information quality requirements of end-use applications (**feedback mechanisms** for the system to stay adaptive to changes)
    - Aeronautical information is digitally represented (change way of working)
    - Enhanced validation and verification procedures
    - Cost-recovery aspects within AIM
- Organizational aspects of an AIS organization
    - Steps to create an AIS organization
    - Change management considerations when transitioning to AIM

Competency-based training and assessment (latest changes)

Proposed amendment to the **Procedures for Air Navigation Services — Training** (PANS-TRG, Doc 9868)
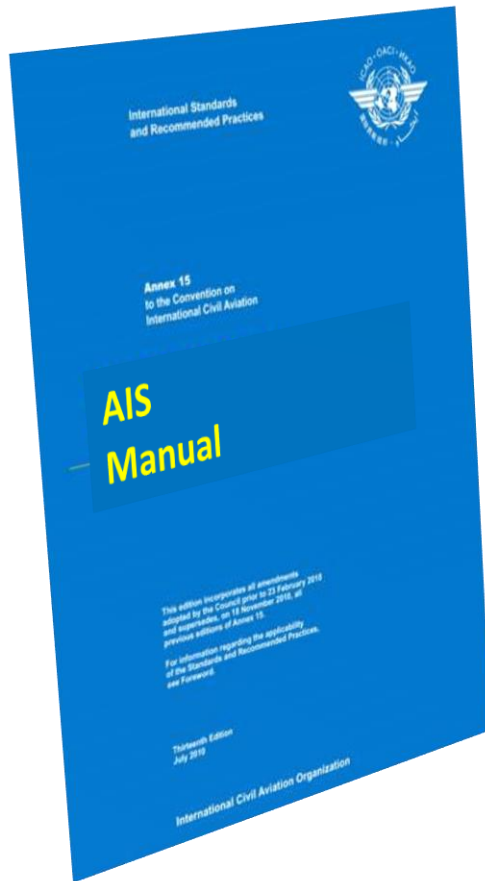
AIS manual – Volume 1

- ➢ Introduction
  - ➢ General
  - ➢ Purpose of the manual
  - ➢ Primary audience
- ➢ AIS Responsibilities and Functions
  - ➢ Purpose of AIS
  - ➢ AIS Responsibilities and functions
  - ➢ Aeronautical Information Products and Services
  - ➢ Competencies
  - ➢ Aeronautical Information Regulation and Control (AIRAC)
  - ➢ Exchange of aeronautical data and aeronautical information
  - ➢ Copyright and cost recovery
- ➢ Aeronautical information management
  - ➢ AIM Principles
  - ➢ Critical aspects in an AIM environment
- ➢ Organization of an Aeronautical Information Service
  - ➢ Separation of regulatory functions and provision of service
  - ➢ Organization of an AIS
  - ➢ Steps to establish an AIS organization
  - ➢ Change management considerations when transitioning to AIM

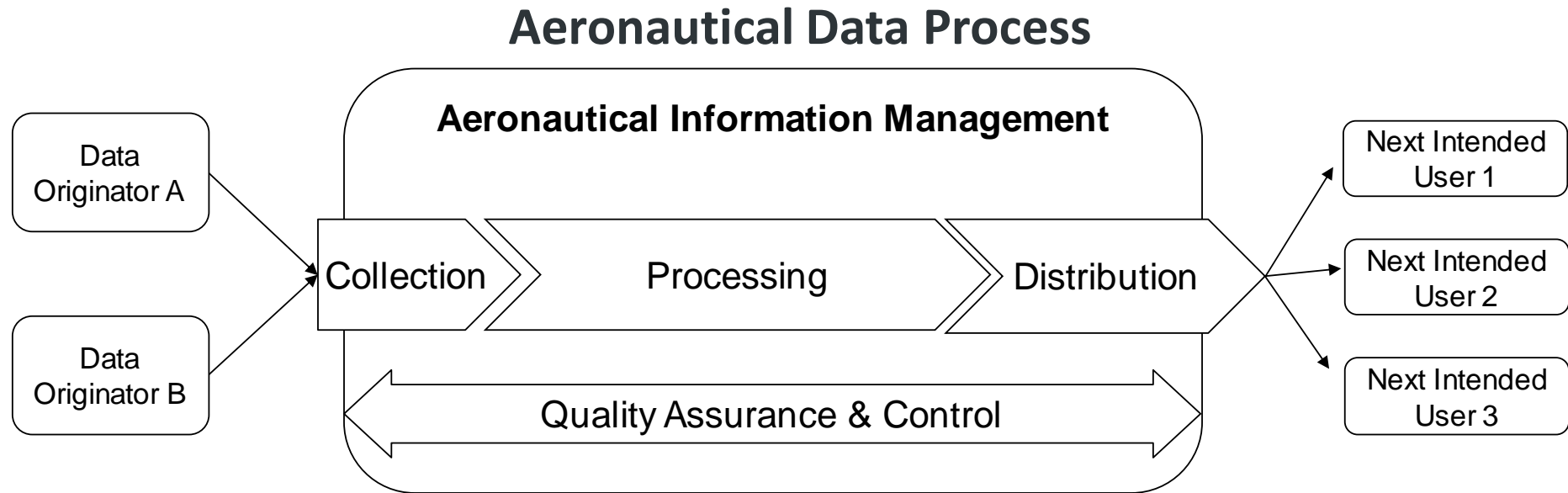# AIS manual– Volume 2

Purpose

Guidance for processing aeronautical data and information

Primary Audience

AIS operational personnel processing aeronautical data and information

AIS manual– Volume 2

The guiding principles to *AIS MANUAL – Volume 2*

Aeronautical Data Process

Aeronautical Information Management

Data Originator A

Data Originator B

Collection → Processing → Distribution

Quality Assurance & Control

Next Intended User 1

Next Intended User 2

Next Intended User 3

How automation is applied to the aeronautical data process

AIS manual– Volume 2

COLLECTION

- High focus on the collection phase to ensure quality
- Clear roles, resources, metadata
- Different constellations for data origination
- The new tool: **the Aeronautical Data Catalogue**
  - What it is, What it isn`t
  - How to use it to map every data element to an identified data originator
  - How to use it in the formal arrangements
  - How to customize it
  - How to provide valid codes for properties and sub-properties
  - Examples
- Content of a formal arrangement and template

AIS manual– Volume 2

The guiding principles to *AIS MANUAL – Volume 2*

Processing

- Difference between validation and verification
- Validation and Verification as critical components of the Quality Management System
- Validation:
  - Validation by application
  - Logical consistency
  - Independent checks of duplicate information
- Verification examples of techniques
  - Digital data error detection
  - Feedback testing
  - Independent redundancy

AIS manual– Volume 2

The guiding principles to *AIS MANUAL – Volume 2*

Quality Assurance & Control

Quality Assurance

- Data traceability

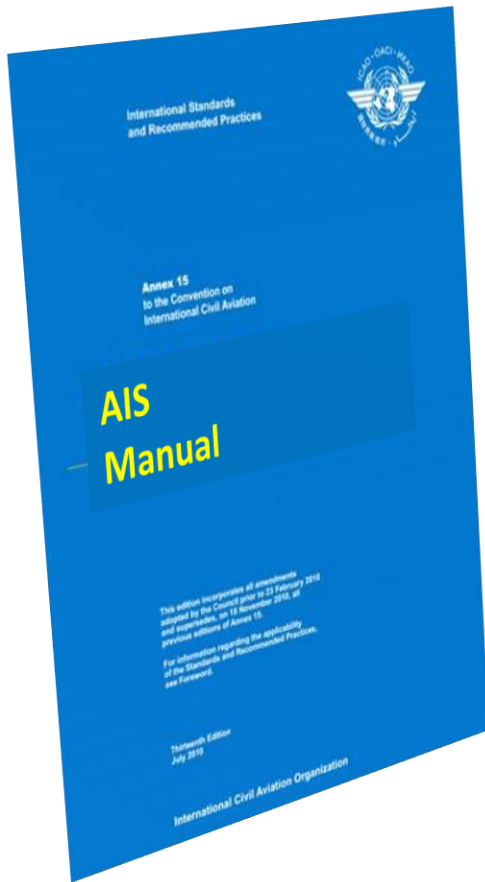- Assurance of data integrity along the process

- Timeliness – AIRAC adherence

Quality Control

- Data error detection and reporting

- Quality checks to ensure compliance with product specifications

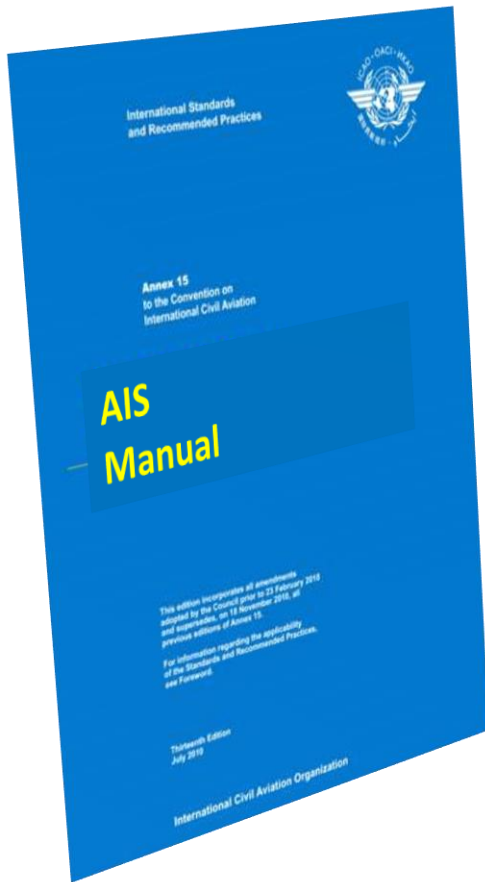- Consistency checks across the information products

AIS manual – Volume 2

- ➤ Introduction
  - ➤ General
  - ➤ Purpose of the manual
  - ➤ Primary audience
- ➤ Aeronautical Data Scope and General Requirements
  - ➤ Data Scope
  - ➤ Data Quality Requirements
  - ➤ Metadata
  - ➤ Reference Systems
- ➤ Collection
  - ➤ Use of the Data Catalogue
  - ➤ Content of a formal arrangement
  - ➤ Different constellations of origination
- ➤ Processing
  - ➤ Validation
  - ➤ Verification
- ➤ Distribution
  - ➤ General aspects
- ➤ Quality Assurance & Control
  - ➤ Quality assurance activities
  - ➤ Quality Control activities
- ➤ Automation
  - ➤ Basic principles (Concept for an automated AIS system)
  - ➤ Different levels of automation
  - ➤ How to apply automation to the data process
- ➤ Service Level Agreement Template

AIS manual– Volume 3

Purpose
Guidance for providing aeronautical information in a standardized presentation
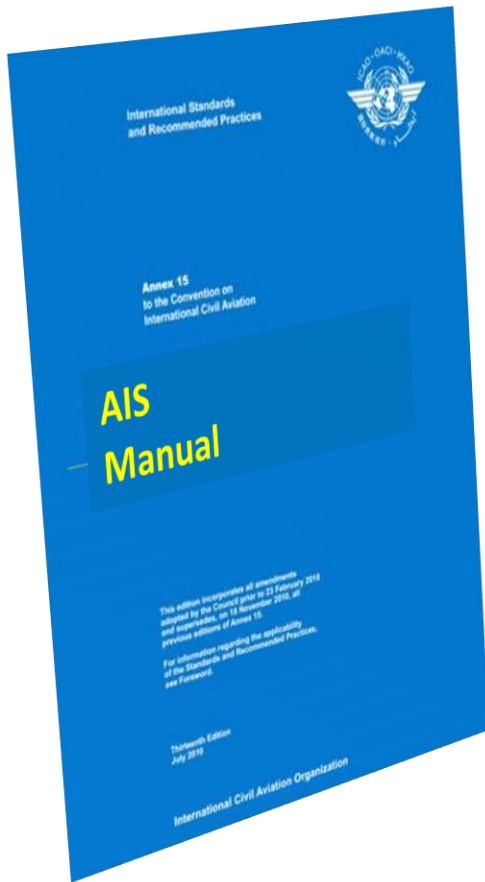
Primary Audience
AIS operational personnel tasked to produce AIP and publish NOTAM
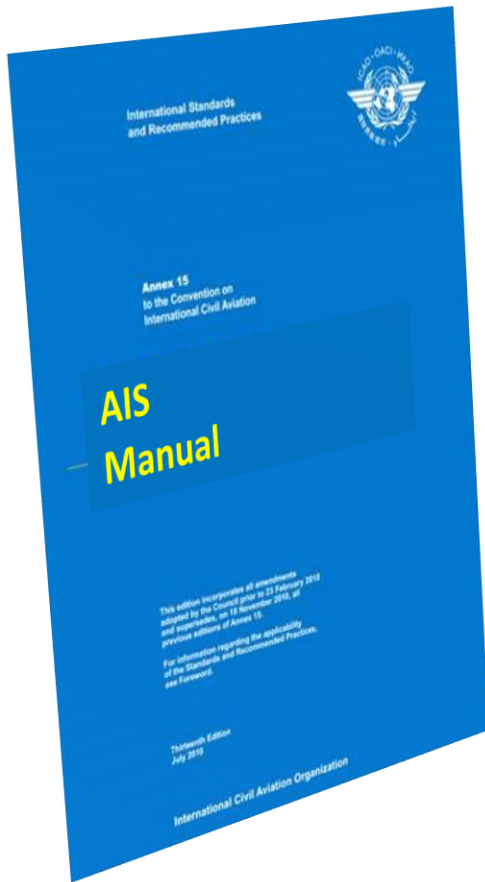
AIS manual– Volume 3

The guiding principles to *AIS MANUAL – Volume 3*

AIS manual – Volume 3

- Introduction
  - General
  - Purpose of the manual
  - Primary audience
- Aeronautical Information Publication (AIP)
  - [...] Content and format. Notification of differences, etc.
  - AIP Amendments
  - AIP Supplements
  - Electronic AIP
- Aeronautical Information Circular (AIC)
- Aeronautical Charts
- Preparation and provision of aeronautical information products
- NOTAM/SNOWTAM/ASHTAM
- NOTAM Distribution
- Series of appendices containing AIP and eAIP specimen, NOTAM. SNOWTAM and ASHTAM examples, etc.

AIS manual– Volume 4

Purpose
Guidance for providing digital products and services

Primary Audience
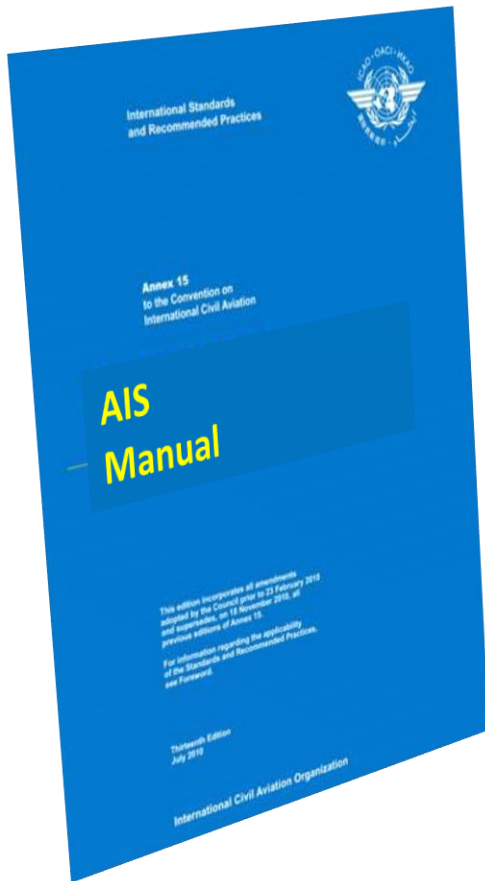AIS operational personnel providing digital products and services

AIS manual – Volume 4

The guiding principles to *AIS MANUAL – Volume 4*

- To achieve global interoperability within the ATM system it is crucial that the data is exchanged through globally harmonized models

- Description of the main principles for modeling information

- Aeronautical Information Exchange model (AIXM):

  - **Still debating on the best guidance to provide!**

  - **Feedback to ICAO to understand what would be the useful guidance to support implementation**

  - For the technical specifications we refer to EUROCONTROL material

  - Brief description of the model (temporality concept, UUID)

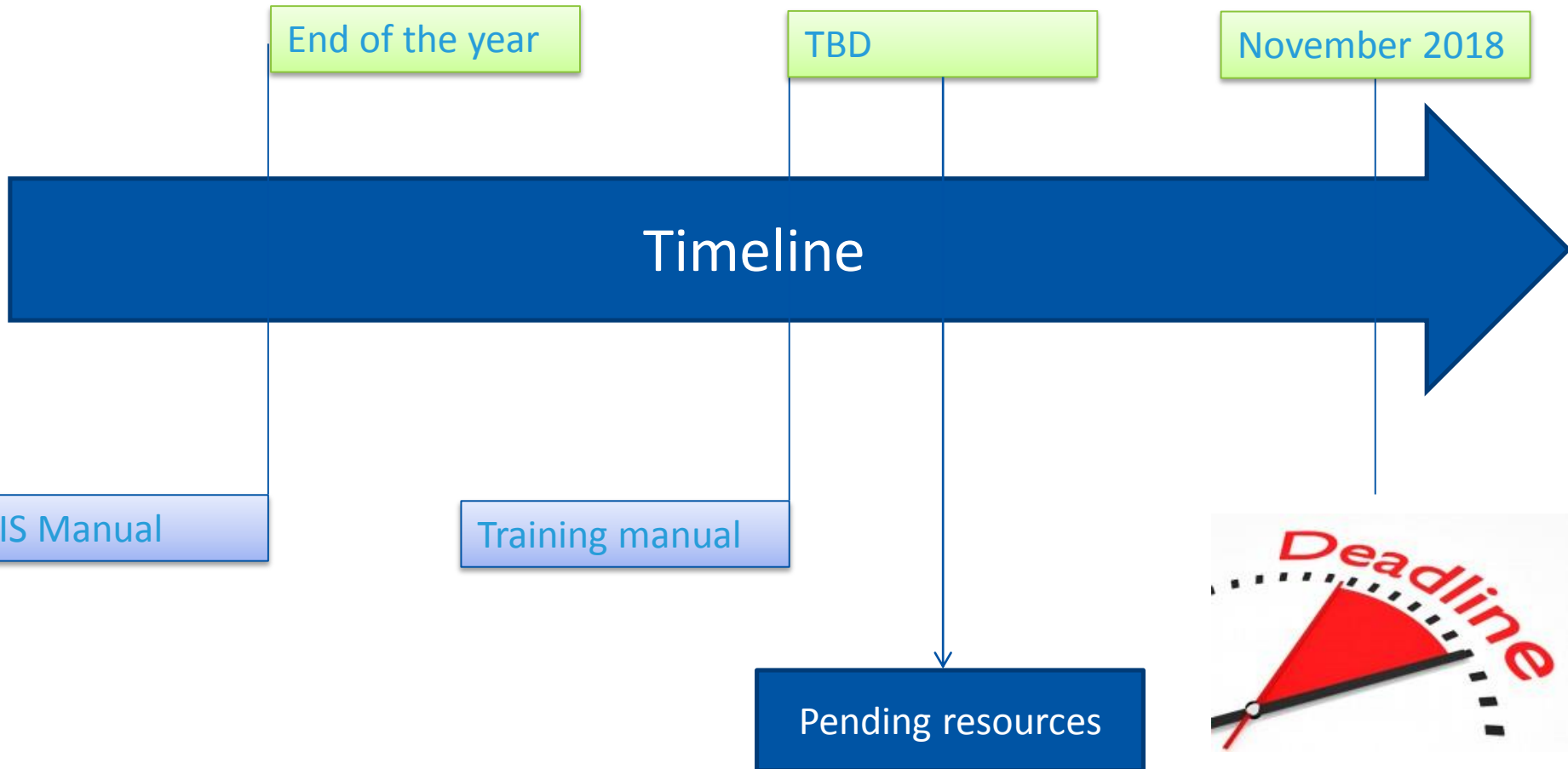 - Some examples of business rules to ensure interoperability

AIS manual – Volume 4

- Introduction
  - General
  - Purpose of the manual
  - Primary audience
- Digital exchange of aeronautical information
  - Global interoperability
  - System Wide Information Management
  - Data, information modelling principles
  - Aeronautical Information Exchange model (AIXM)
  - Examples of business rules to ensure interoperability
- Digital data sets
  - AIP data set
  - Terrain and obstacle data sets
  - Aerodrome mapping data set
  - Instrument flight procedure data set
- Distribution Services
  - Digital NOTAM
  - Pre-flight Information Services
  - Post-flight Information Services

Guidance material

End of the year

TBD

November 2018

Timeline

AIS Manual

Training manual

Pending resources

Summary

- The ICAO provisions for AIM have been reworked to provide a comprehensive set of requirements, practices, procedures and "best practice" guidance

- As part of the "No Country Left Behind Initiative" a lot of focus is given to implementation

- AIM is happening now, special attention on implementation

- Special focus on the development of guidance by the applicability date of the new provisions

- Guidance material will be focused on how to improve or implement capabilities

- **We need support in terms of resources to speed up the process!**

Thank You