Introduction to Amendment 40 to Annex 15

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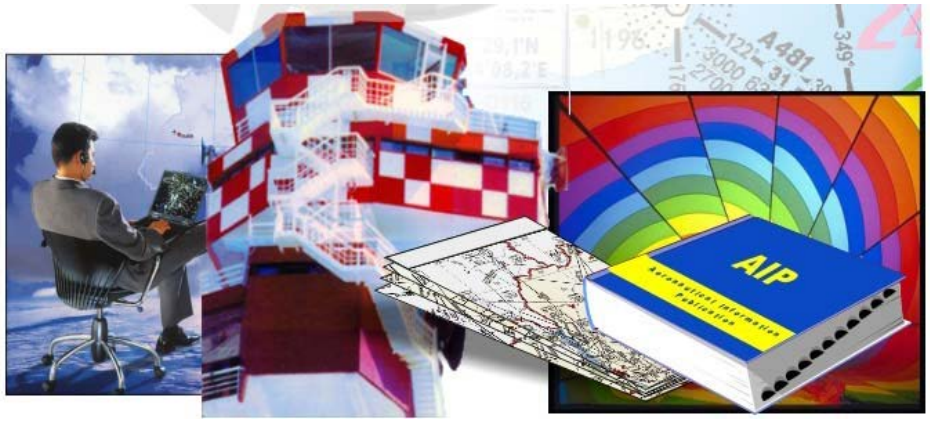
Outline

- From *Aeronautical information services (AIS)* to *Aeronautical Information Management (AIM)* environments
- ICAO Actions
- Amendment 40 to Annex 15
  - Guiding principles
  - Highlights
  - Current Status
  - Impact

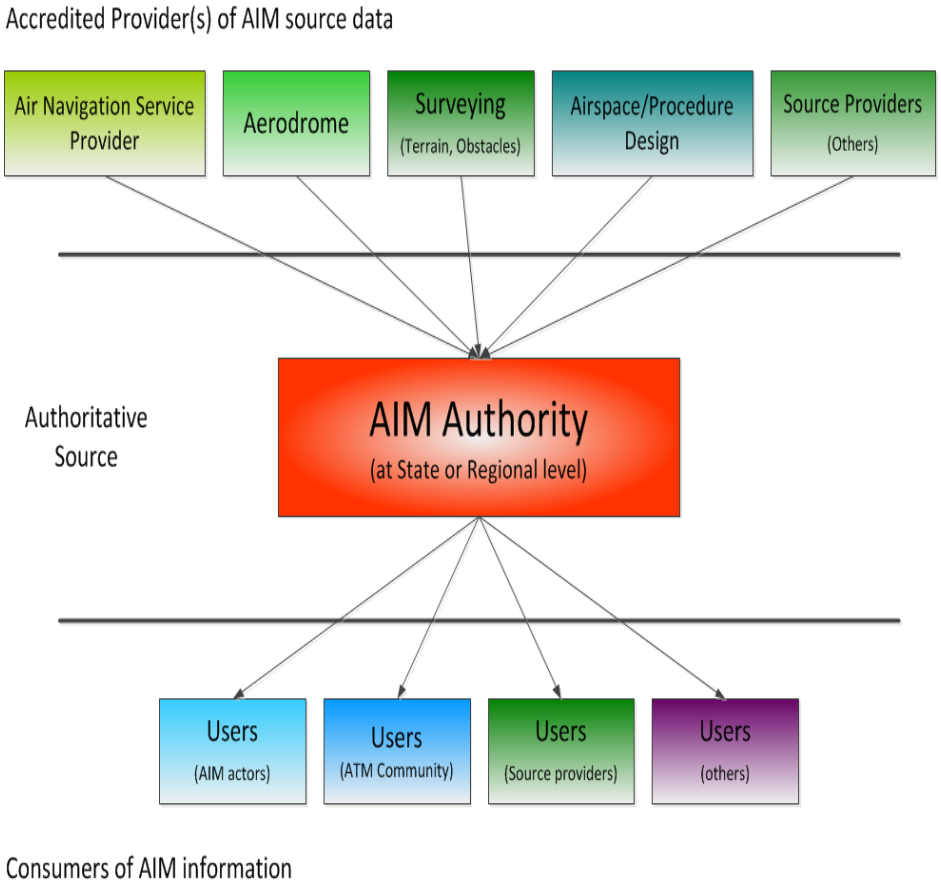
From the traditional AIS…

- **Product-centric** mindset;
- Reliance on **manual processing** and manipulation;
- Duplication of information, **quality issues**;
- use of **non-harmonized** formats across the exchange interfaces;
- “Point to point” or “application to application” exchanges;
- Insufficient awareness of the quality requirements of **end-use applications.**



… to the new AIM environments

- **Focus is on the data and information**
- **Quality-assured** aeronautical information
- Authoritative sources of AI;
- Aeronautical information is **digitally represented;**
- Aeronautical information is **globally harmonized and interoperable**;
- **Producers** of information decoupled **from** possible **consumers**;
- Better awareness of the end-use requirements (feedback mechanisms)



ICAO Actions

ICAO AIS to AIM Study Group
(2008 -2015)

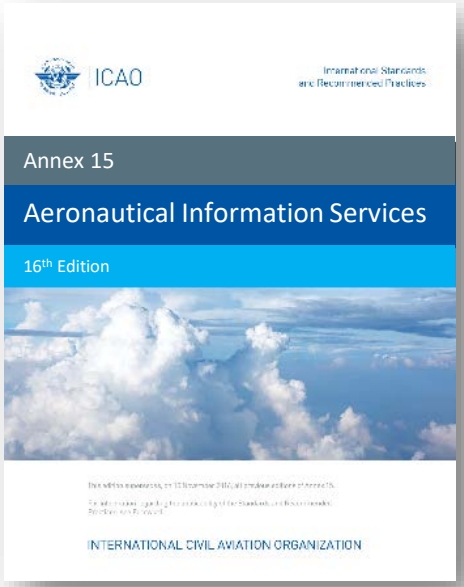
Objectives:

- Global strategy/roadmap for the transition from AIS to AIM
- SARPs/Guidance for a standard AICM/AIXM to enable global digital data exchange
- Other material required to support AIM implementation

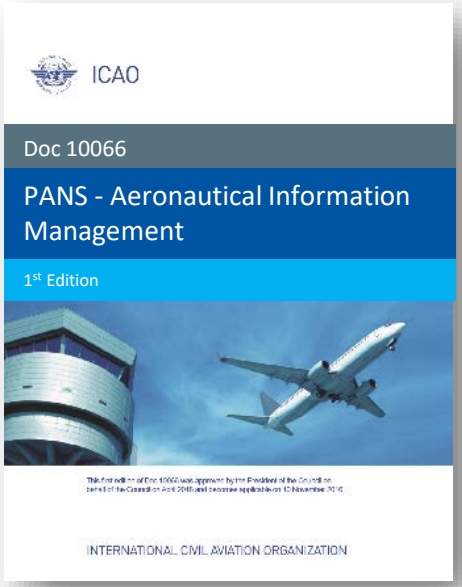
Restructuring of ICAO AIM Documentation

- Answering " the big questions":
  - *Scope of AIM*
  - *Role of AIM*
  - *Functions of AIM*
  - *Products and services of AIM*
  - *Aeronautical information updates*
- The revised provisions address the needs of defined groups

ICAO AIM framework of documents



What…



How…

Guidance…

Annex 15 (Amdt.40): guiding principles

Main elements

Amendment 40 cause major changes to Annex 15…

Introduces new AIM requirements :

- ✓ Splits data origination from publication requirements
- ✓ Strengthens the importance of quality
- ✓ Encourages digitalization of products and services

Reorganizes chapters 4 to 11 into:

- ✓ Chapter 4 - *Scope of Aeronautical Data and Information*
- ✓ Chapter 5 - *Aeronautical Information Products and Services*
- ✓ Chapter 6 - *Aeronautical Information Updates*

Annex 15 significantly reduced in size (6 chapters, **40** pages)

Annex 15 – Chapter 4

Scope of Aeronautical data and Aeronautical Information:

Data origination/collection:

- **minimum data set or scope** ;
- aeronautical information and data to be collected and managed;
- information and data should be **at least sufficient to assemble an AIP**;
- To extend beyond current "publication requirements"
- focus on **"what" is to be collected by the State**;
- be used to facilitate **formal arrangements between AIS and data originator**

Annex 15 – Chapter 5

Aeronautical Information Products and Services:

SERVICE 1 (legacy)	SERVICE 2 (new)	OTHER SERVICES
Provision of AI in a standardized presentation: ✓ AIP ✓ AIP Amendments ✓ AIP Supplements ✓ AICs ✓ NOTAMs Aeronautical Charts ✓ Electronic encouraged	Provision of AI as digital datasets: ✓ **New!** AIP data sets ✓ **New!** IFP data sets ✓ Terrain data sets ✓ Obstacle data sets ✓ Aerodrome Mapping data sets New data sets: recommended	Distribution of AI ✓ Use of internet is recommended Pre-flight Service ✓ Relocated text Post-flight Service ✓ Relocated text
Continuity	Evolution	Improvement

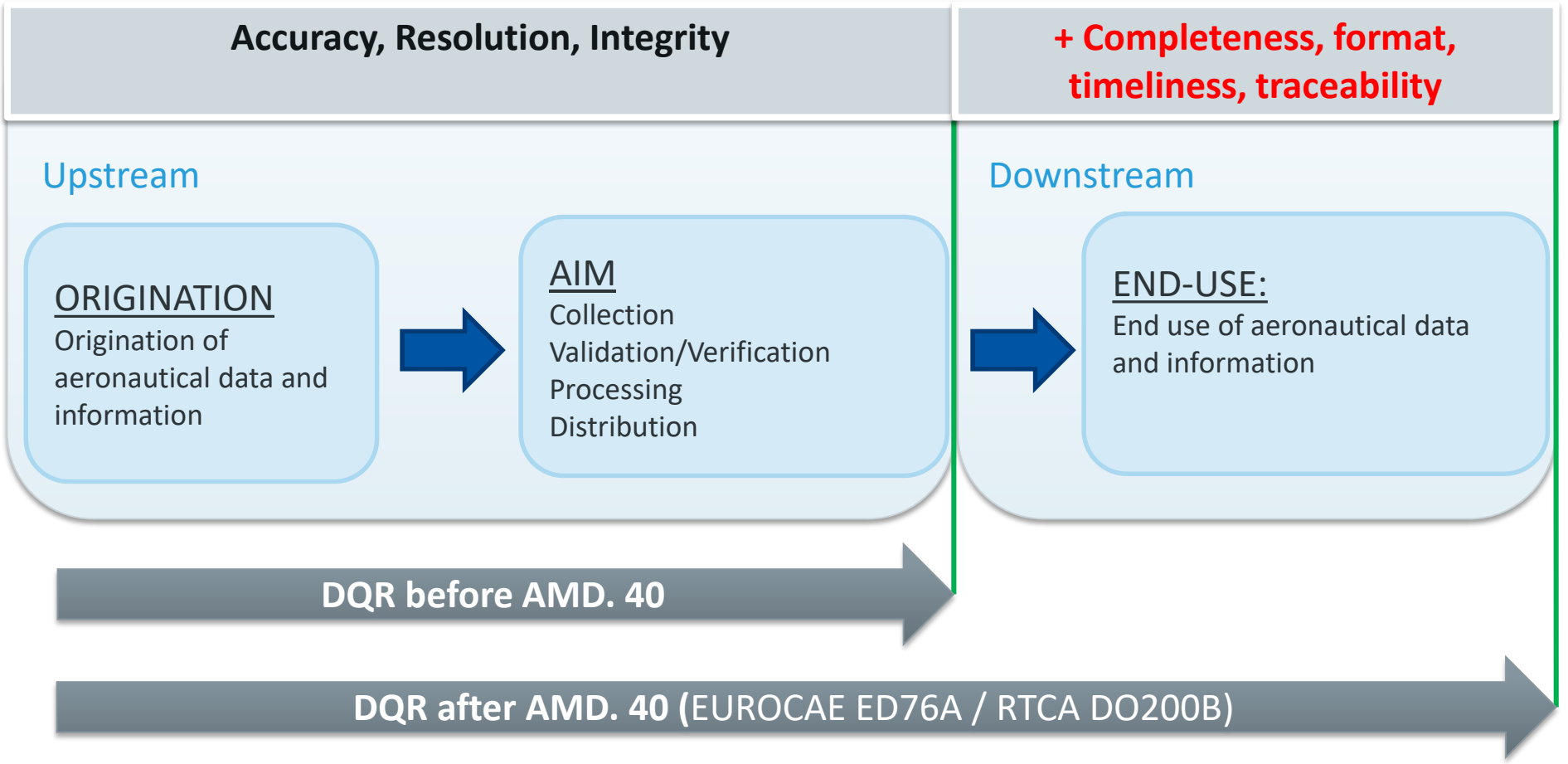
Annex 15 – Chapter 6

Aeronautical Information Updates:

- Legacy products updates: no changes
- NOTAM, as an update mechanism
- **Digital data-set updates** (generic requirements):
  - data sets to be amended as necessary;
  - permanent and temporary changes (long duration) as full data set or sub-set of data ;
  - full data-sets: the differences should be indicated;
  - temporary changes (short duration) – Digital NOTAM
  - updates to the AIP and the digital datasets shall be synchronized

The highlights

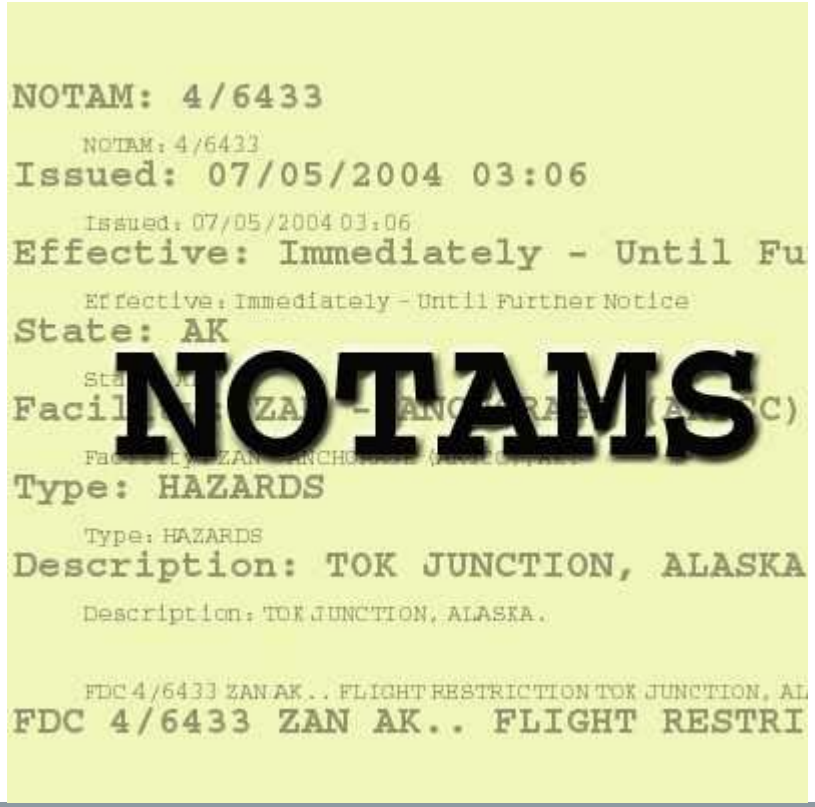
Data quality requirements



NOTAM improvements

Make the NOTAM more fit for purpose:

- Additional operational conditions are included in the provisions to identify when a NOTAM shall/shall not be originated
- Improved requirements for NOTAM distribution:
  - States obligations on NOTAM distribution
  - **!New** requirement to grant the distribution of NOTAM series other than those distributed internationally



Role of automation…

Essential! However…

- 3.5.2 Due consideration to the integrity of data and information shall be given when automated processes are implemented and mitigating steps taken where risks are identified.
- *Note.— Risks of altering the integrity of data and information may be introduced by automated processes in case of* ***unexpected systems behaviors.***

New Terminology

- **Aeronautical Information Product** → to compile all AI deliverables to be provided in either digital data sets or as a standardized presentation in paper or electronic media;
- **Originator, Origination** → to introduce and clarify an entity that is accountable for data origination, from which the AIS organization receives aeronautical data and information;
- **Next Intended User** → to better specify the role of the user in the aeronautical data chain;
- **Provide VS publish** → to encourage the move to digital environments;
- More consistent use of "**form, formats or media**" and "**printed**", based on the differences between electronic, digital and paper requirements.

Annex 15, Amendment 40 - Status

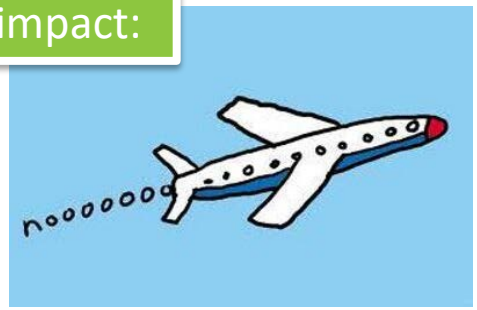
- **Adopted** by ICAO Council: Feb 2018
- State Letter: April 2018
- App. Date: Nov 2018

Benefits

- Conceptual Convergence (explain what is “AIM”)
- Important reference for National AIM Regulatory Framework
- Progressive and incentive (smooth transition to AIM)
- Reflect today`s practice (improved consistency with industry standards)
- Prepare for Future (key foundation for SWIM)

Impact

Flight safety impact:

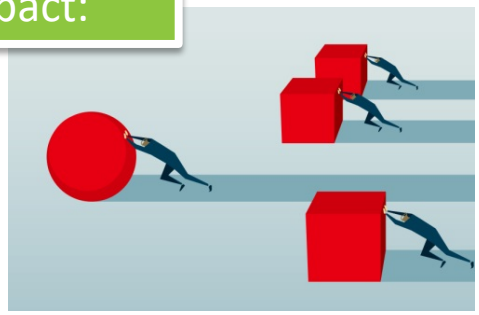


POSITIVE!
Better understanding of AIM
Strengthens quality controls

Financial Impact:

- Initial major investments
- Phased-approach is recommended

Efficiency impact:



POSITIVE!
Going digital minimize errors

Implementation time

2 to 5 years (based on States` current status of implementation)

North American Central American and Caribbean (NACC) Office MexicoCity
South American (SAM) Office Lima
ICAO Headquarters Montreal
Western and Central African (WACAF) Office Dakar
European and North Atlantic (EUR/NAT) Office Paris
Middle East (MID) Office Cairo
Eastern and Southern African (ESAF) Office Nairobi
Asia and Pacific (APAC) Office Bangkok

Thank You