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# **IFAIMA Global AIM 2016 Rio de Janeiro, Brazil**

## **Summary**

# We came to Brazil...

- Attendance
  - **250+** participants
  - **60** States, **5** Intl ORG
  - **17** Industry Exhibitors
- Organizing partners
  - IFAIMA/Eurocontrol/ICAO/DECEA
  - **28** presentations, **25** presenters



# Our hosts

## BRAZIL:

- SAC, Secretary of Civil Aviation
- DECEA, Department of Airspace Control







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# What we heard

- ICAO Global and Regional Developments related to AIM and SWIM
- Main Challenges
- Shared best practices on AIM implementation
- Users perspective
- Look into the future

# AIM – Challenges and Solutions

## Main Challenges...

- Preparing for SWIM...
- ICAO SARPs: major changes in progress
- Many States challenged by the lack of State/organizational focus on AIM as a critical air navigation domain
- Ensure that the information is right
- Ensure interoperability among systems
- TOD implementation and digital data distribution
- Lack of resources, lack of competencies, need for training



# AIM – Challenges and Solutions

## Solutions....

- Strengthen ICAO AIM provisions
- Formal arrangements with originators (Data Catalogue)
- Coordination, Cooperation
- Examples of centralized databases
- Importance of partnership (Users ; Other ATM Actors; Regulators; Other States and AIS/AIM providers; Solution Vendors)
- Guidance to support implementation

# Lessons Learned & Recommendations







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# Regulating AIS-AIM

- Need for enhanced State policy and financial support for AIS/AIM
- Strengthen ICAO AIM provisions, but tailor it to the specific regional needs
- Do not go beyond what is needed to resolve the issue
- Avoid unnecessary regulatory burdens
- Anticipate implementation challenges
- Build on the foundation that you have already created
- Increase trust and commit to establish a QMS:
  - process approach
  - staff competency

# Ensure that the information is right

- Quality-assured aeronautical information is critical to ensure safety of operations (FPD, PBN , Safety Bulletin)
- Formal agreements with data originators
  - Avoid misunderstandings
  - Clear responsibilities and timelines
  - Ensure data quality
- Identify all possible data originators
- Use the data catalogue as a “common language”
- Adapt the data catalogue to fit your needs
- Formal arrangements fit for purpose
- Maintenance of the data (be organized from the real beginning)
- Don't forget the metadata!

# Interoperability

- Existing systems are not designed and implemented to be globally interoperable within globally agreed parameters

## *FOOD FOR THOUGHTS...*

- Recognize that interoperability and standardization are essential
- Semantic interoperability (AIRM)
- Interoperable Information Exchange Services for each ATM information domain and for cross domain purposes
- ICAO Global Air Navigation Plan foresees concrete Block Upgrades relying on AIXM (B0-DATM), I-WXXM 1 (B1-DATM) and FIXM (B1-FICE)
- Looking specifically into AIXM implementation experiences: is AIXM sufficiently supporting interoperability? Flexibility VS constraining?



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# TOD

- Terrain and Obstacle data are necessary for operational purposes
- Terrain data set and Obstacle data set allows the paradigm shift («AIM» thinking)
- Be practical and acquire the data that users need
- Involve regulator and main stakeholders, assign clear roles and responsibilities
- Set priorities
- Importance of metadata for the entire data management process (from acquisition, to maintenance and distribution to the users)
- Certainly need for ICAO guidance, e.g. Cost Recovery Best Practices

# Resources, Training

AIM supports decisions affecting safety and consequently consistency and quality of the service is of primary importance

- Need to make sure that there is a certain level of competency to perform AIS/AIM functions
- It is necessary to identify a minimum set of requirements for training under the ICAO Competency Based Framework
- To ensure harmonization, there is the need to harmonize designation of AIS/AM staff





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# Look into the future

## The near-future is to:

- Make AIM a “SWIM-enabled” domain
- thorough understanding of the role of AIM, the scope of AIM and the main functions of AIM under the all-embracing SWIM principles
- Aeronautical information coming from authoritative sources
- Interoperable exchange
- Account for the increasing number of users
- Account for a continuous evolving ANS infrastructure



# Workshops

## Outcome and Suggestions



# Data Catalogue

- to be kept up-to-date
- to be distributed digitally only (format: csv-file is sufficient)
- items should have unique IDs and unambiguous definitions
- Reference shall be published and filled for every item
- Full reference to source document required (e.g. AMDB document reference)
- Examples about the use of the Data Catalogue (Use Cases)



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# Aeronautical Data Exchange

## Flexibility - Interoperability Paradox

- AIXM implementation experiences
  - Too many options
  - Resulting in various dialects
  - Potentially jeopardising interoperability
- Opinions expressed
  - Flexibility = 'future-proofing'
  - Constraining = improving uniform implementation
- Initial suggestions for way forward
  - Guidance material on how to constrain AIXM (mandatory and optional elements)
  - Data Catalogue could be a tool
  - Guidance material reflecting business rules
- Advice for ICAO
  - No clear advice yet
  - Further clarification required from wider community if guidance only is sufficient to constrain the implementation options



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# TOD

- Regulation/ICAO guidance (Update Doc 9881)
- Good examples/best practices (including cost recovery models)
- Training workshop best practices sharing
- ICAO regional office role (European TOD WG mentioned as good example)
- Pragmatic approach
- Assessment of benefits on procedure design with TOD
- Flexibility in implementation
- Coordination (States, partners)
- Work with industry on the standards





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