ICAO Aeronautical Information Services – Aeronautical Information Management Study Group (AIS-AIMSG)

Development of Standards and Recommended Practices (SARPS)

Presented to:  AIXM/WXXM CONFERENCE 2010
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Overview

• International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPS)

• ICAO Aeronautical Information Services – Aeronautical Information Management Study Group (AIS-AIMSG)

• AIS-AIMSG Ad-hoc Group on Annex 15

• Concluding Remarks
ICAO AIS-AIMSG

• Background
• Tasks
• Challenges
• Actions
• Roadmap
• Amendment 36 to Annex 15
• Guidance Materials
• Follow-up actions
AIS-AIMSG Background

• **Established March 2008 by the ICAO Air Navigation Commission (ANC)**
  - To assist the Secretariat with the AIS-AIM transition tasks and AIM work program
  - Study group formed September 2008
  - 15 members act as independent experts

• **AIS-AIMSG Meetings**
  - Hosted by HQ ICAO Air Navigation Bureau (ANB) MET/AIM Section, Aeronautical Information Unit, Montreal
  - Two meetings: December 2008 and November 2009
  - Next meeting: November 9-12, 2010
  - ICAO AIM web page:
    • http://www2.icao.int/en/anb/met-aim/aim
Tasks

- To satisfy new requirements arising from the Global ATM Operational Concept - Transition from AIS to AIM
  - Develop a global AIS-AIM strategic roadmap
  - Develop SARPS and guidance material to:
    - Enable global exchange of aeronautical information
    - Provide for exchange models and their evolution
    - Ensure uniform, timely and quality-assured presentation to users throughout the ATM system
    - Establish Quality Management Systems
    - Provide AIM staffing and training guidelines/materials
    - Guidance for legal and institutional issues
Challenges

• **ICAO SARPS and guidance development**
  – Global, transparent process
  – Amendment timelines
  – Global acceptance required

• **Transition from product-centric to data-centric processes supporting global ATM**

• **Information and data management processes that assure data quality and integrity from originators to users ATM system-wide**
Challenges

• **Performance Based Approach**
  – Manual on Global Performance of the Air Navigation System
  – A decision-making method based on three principles:
    • strong focus on desired/required results;
    • informed decision-making driven by those desired/required results;
    • and reliance on facts and data for decision-making

• **National, Regional and Global planning and implementation capabilities**
  – Implementation assistance
  – Incremental approach
AIS-AIMSG Actions

• Roadmap completed and noted by ANC
  – On the web in six languages:
    http://www2.icao.int/en/anb/met-aim/aim/Pages/RoadmapfromAIStoAIM.aspx
  – Living document under ongoing review – can be amended

• Amendment 36 to Annex 15 Aeronautical Information Services
  – Interim SARPS for AIM
  – Effective 12 July 2010 and applicable 18 November 2010
  – Some eTOD SARPS applicable 12 November 2015

• Amendment 56 to Annex 4 Aeronautical Charts
  – Applicable 18 November 2010
  – Except Aerodrome Terrain and Obstacle Chart – ICAO applicable 12 November 2015
AIS-AIMSG Actions

• Development of Annex 15 Amendments 37 and 38 underway
  – Continue development of interim SARPS for AIM
  – Major revision of Annex 15 in Amendment 38

• Development of Annex 4 Amendments 57 and 58 also in process

• Prepare for planned MET/AIM Divisional Meeting in 2014
Roadmap:
Transition Phases from AIS to AIM

1 Consolidation – now/ongoing:
   - Quality, AIRAC, WGS-84, electronic terrain and obstacle data

2 Going digital - began Nov 2009:
   - Introduce database-driven processes
   - Aeronautical information conceptual model guidance developed

3 Information management – begin Oct 2011:
   - Meet Global ATM requirements
   - Quality assured new products and services
   - Development of Standards (Already underway)
   - Implementation of Standards
     • Performance and business driven
Roadmap Steps – High Level Actions for Transition

Figure 3. Positioning of the 21 steps of the roadmap in the three phases.
Amendment 36 to Annex 15

- **Quality management system (QMS)**
  - Metadata SARPS – support the aeronautical data chain (traceability)
- **Recommendations for digital data exchange:**
  - Use of automation - enabling digital data exchange
  - Use of the public Internet
- **Electronic aeronautical information publications (eAIP)**
- **NOTAM**
  - Format enhancements – cancellations, effective date and time
  - Reporting of radioactive material, toxic chemicals and volcanic ash deposition – runway contamination
- **Strengthen AIRAC use and adherence**
- **Automated preflight information system SARPS upgraded from a recommendation to a standard**
- **Electronic terrain and obstacle data (eTOD) – significant revisions – achievable SARPS**
Use of Automation Enabling Digital Data Exchange

3.6.5 Use of automation

**Recommendation.** — Automation enabling digital data exchange should be introduced with the objective of improving the speed, quality, efficiency and cost-effectiveness of aeronautical information services.

**Note.** — Guidance material on an aeronautical conceptual and data exchange model for the development of databases and the establishment of data exchange services is contained in Doc 8126.
Electronic Aeronautical Information Publications (eAIP)

4.6 Electronic AIP (eAIP)

4.6.1 ** Recommendation.** — The AIP, AIP Amendment, AIP Supplement and AIC should also be published in a format that allows for displaying on a computer screen and printing on paper.

**Note 1.** — This composite electronic document is named “Electronic AIP” (eAIP) and is based on a format that allows for digital data exchange.

**Note 2.** — Guidance material for the production and provision of the eAIP is contained in Doc 8126.

4.6.2 When provided, the information content of the eAIP and the structure of chapters, sections and sub-sections shall follow the content and structure of the paper AIP. The eAIP shall include files that allow for printing a paper AIP.

4.6.3 ** Recommendation.** — When provided, the eAIP should be available on a physical distribution media (CD, DVD, etc.) and online on the Internet.

**Note.** — Guidance material on the use of the Internet is contained in Guidelines on the Use of the Public Internet for Aeronautical Applications (Doc 9835).
Guidance Materials

• Amendment No 3 to Doc 8126 will include:
  – Digital Data Exchange Guidance
    • No specific version of AIXM specified in consideration of possible significant investments in older versions
    • AIXM 5 described as general “performance requirements”
      – Mentioned as a possible means of compliance
      – Description of AIXM 5 and CD with complete documentation
  – eAIP Guidance

• New Quality Management System Manual
  – A welcome addition for States developing a quality system – will help harmonize the global quality goal
  – Final draft to be submitted to ICAO May 2010
Follow-up Actions

- Revise and restructure Annex 15:
  - Include new definitions related to AIM
  - Refine data integrity requirements
  - Introduce AIM services and separate data from publications
- Digital AIM services manual
- Establish AIXM Governance
- AIS-MET Data link
- Aerodrome mapping databases (AMDB)
- Training Manual Update
- Aeronautical Chart Manual (Amendments 56 and 57)
- Safety Management System
- Legal and institutional issues
- MET component considerations
- Consequential amendments to other ICAO Annexes and Guidance Materials
Follow-up Actions

• AIS-AIMSG members and groups are assigned to action items
  – All members encouraged to make an input

• Ad-Hoc Groups:
  – Including AIM in Annex 15 (+ guidance Docs)
  – AIM Quality Manual
  – Aeronautical Chart Manual Doc 8697
  – Training
  – Legal and Institutional Issues
AIS-AIMSG Ad-hoc Group on Annex 15

• Revise Annex 15 SARPS
  – Scope/Responsibilities
    • New AIM processes and services
    • Clarity in definitions
  – Information and data management
    • Aeronautical information and data quality assurance from originator to ATM system-wide
    • Integrity in the data handling and exchange processes
  – Products and Services
    • Classic AIS products
    • New Services
  – Communications
  – Quality Management System
Development of Amendments 37 and 38 in Parallel plus Guidance Materials

• Amendment 37
  – Provide SARPS and guidance materials necessary for initial transition to AIM
  – Applicable November 2013

• Amendment 38
  – Provide mature SARPS and the process for full transition to AIM
  – Draft SARPS to be considered by States attending the planned MET/AIM Divisional Meeting in 2014
  – Applicable November 2016

• Guidance materials for classical AIS products and the new AIM products and services
CONCLUDING REMARKS

• Revisions to SARPS and guidance materials for AIS-AIM transition are underway

• States should follow the Roadmap
  – Complete the steps in Phase 1
  – Continue Phase 2
    • Implement Annex 15 Amendment 36
    • Consider AIXM and eAIP guidance in Doc 8126
  – Prepare for Phase 3
CONCLUDING REMARKS

• Performance Requirements SARPS
  – Provide for the facts and data for necessary to support informed decision-making

• SARPS for Data-Centric Operations
  – SARPS for information management system-wide
  – SARPS for data quality and integrity requirements

• AIXM Governance Process under Development
THANK YOU

ANY QUESTIONS?