

AIXM/WXXM CONFERENCE 2010

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

*Development of Standards and
Recommended Practices (SARPS)*

Presented to: AIXM/WXXM CONFERENCE 2010

By: Gregory Pray and Marvin Hoffman

Date: 4 May 2010



Federal Aviation
Administration



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

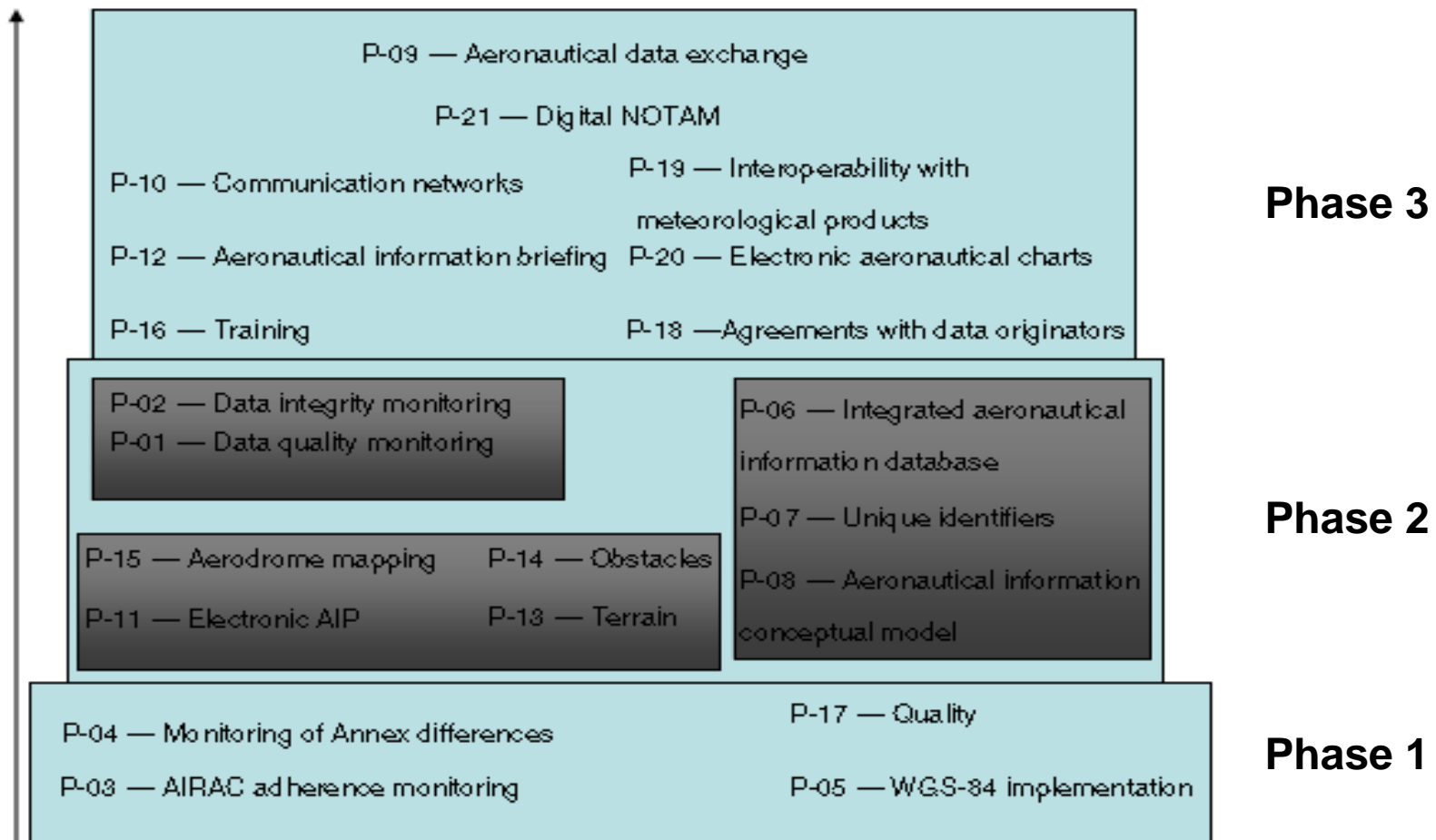


Figure 3. Positioning of the 21 steps of the roadmap in the three phases.



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 9855).*



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?

