



WORKING PAPER

ASSEMBLY — 37TH SESSION

TECHNICAL COMMISSION

Agenda Item 39: Transition from Aeronautical Information Services (AIS) to Aeronautical Information Management (AIM)

EVOLUTION TOWARDS AERONAUTICAL INFORMATION MANAGEMENT

(Presented by the Council of ICAO)

EXECUTIVE SUMMARY

The Technical Commission of the 36th Assembly highlighted the need for the strategic evolution towards Aeronautical Information Management (AIM) and recognized the need for an ICAO strategy to transit to AIM in a manner that will ensure the availability of aeronautical information to any ATM user in a globally interoperable and fully digital environment. The paper outlines progress made by ICAO in the transition towards AIM by addressing the recommendations resulting from the 2006 Global Aeronautical Information Services (AIS) Congress and through amendments to Annexes 4 and 15 that are designed to progress the global framework required for the implementation of AIM.

Action: The Assembly is invited to agree that ICAO should maintain a leading role in providing the strategic direction, Standards, Recommended Practices and implementation support required to transition to AIM as a foundation for the development of a globally harmonized and interoperable ATM system.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective D.
<i>Financial implications:</i>	Resources for the activities referred to in this paper are included in the proposed budget for 2011 to 2013.
<i>References:</i>	Doc 9899, A36-TE, paragraph 31:17

1. INTRODUCTION

1.1 The transition from the traditional product-centred provision of aeronautical information to a data-centred and systems-oriented information management approach has been identified as a fundamental component and key enabler of a future air traffic management (ATM) system meeting the vision of the ICAO global ATM operational concept. It is recognized that to satisfy new requirements arising from the *Global Air Traffic Management Operational Concept* (Doc 9854), aeronautical information services (AIS) must transit to the broader concept of aeronautical information management (AIM). As part of system-wide information management (SWIM), AIM is required to support evolving requirements for, inter alia, collaborative decision making (CDM), performance-based navigation (PBN), ATM system interoperability, network centred information exchange, and to take advantage of improved aircraft capabilities.

2. PROGRESS ON RECOMMENDATIONS FROM 2006 GLOBAL AIS CONGRESS

2.1 The Global AIS Congress held in 2006 made ten recommendations directed at ICAO and States (A36-WP/51 refers). The Technical Commission of the 36th Assembly recognized the need for the Secretariat to support the recommendations of the Congress together with the need for further coordination and transparency. These issues have been pursued by the Secretariat with the assistance of the Aeronautical Information Services-Aeronautical Information Management Study Group (AIS-AIMSG) which was established in 2008. Appendix A outlines the significant progress that has been made on action called for by these recommendations and notes that planning for a divisional meeting is underway.

3. CHANGES TO ICAO PROVISIONS

3.1 The ICAO Council adopted Amendments 56 and 36 to Annexes 4 and 15, respectively, (*State letters AN 9/1-10/19 and AN 2/2-10-18, refer*). The Amendments conform with the *Roadmap for the Transition from AIS to AIM (Appendix A, Recommendation 2 refers)* and contribute to a basis for AIM through:

- a) further provisions for quality management - to assist implementation, a new QMS Manual is under development with expected availability in the first half of 2011;
- b) enabling clauses for the use of digital data exchange - to assist implementation, guidance is under development with expected availability in the first half of 2011;
- c) revised provisions related to the automated pre-flight briefing;
- d) an improved NOTAM format;
- e) an amendment to strengthen aeronautical information regulation and control (AIRAC) adherence, particularly where information is provided in electronic form;
- f) new provisions for the eAIP - to assist implementation, guidance is under development for inclusion in the *Aeronautical Information Services Manual* (Doc 8126) with expected availability in the first half of 2011; and

- g) provisions related to the use of the Internet for the provision of aeronautical information.

3.2 Work is being progressed on the next Amendment 37 to Annex 15, scheduled for adoption in 2013, which is intended to separate AIS from digital products. Amendment 38 to Annex 15 in 2016 is expected to introduce the global implementation of AIM.

4. **SUMMARY**

4.1 The road from AIS to AIM is challenging in a globally harmonized context. Nevertheless, progress is being made and the challenges to transition to AIM are being addressed. The evolution and implementation of AIM strategies, systems, and capabilities lay a critical foundation for the development of a globally harmonized and interoperable ATM system. ICAO has assigned priority to this work and is committed to maintaining a leading role in this important transition.

APPENDIX

PROGRESS ON RECOMMENDATIONS FROM 2006 GLOBAL AIS CONGRESS

The Global AIS Congress held in 2006 made ten recommendations directed at ICAO and States to aid in the development of the AIM concept and the subsequent implementation of change.

Recommendation 1

ICAO should adopt the AICM/AIXM as the standard aeronautical information conceptual model and the standard aeronautical information exchange model; and develop appropriate means of compliance and global mechanisms to manage and develop the AICM/AIXM.

Amendment 36 to Annex 15 — *Aeronautical Information Services* includes a provision enabling digital data exchange. Guidance material based on the aeronautical information conceptual model (AICM) and the aeronautical information exchange model (AIXM) is being developed for inclusion in the *Aeronautical Information Services Manual* (Doc 8126).

Recommendation 2

ICAO should evolve the AIM Concept and associated performance requirements and develop a road map to plan, manage and facilitate, on a worldwide basis, the transition from AIS to AIM.

The Roadmap for the Transition from AIS to AIM has been developed by the Secretariat with the assistance of the AIS-AIMSG. It addresses in greater detail, the direction given in the *Global Air Navigation Plan* (Doc 9750) for the transition from AIS to AIM. Further work on the evolving AIM concept is being undertaken.

Recommendation 3

ICAO should initiate an urgent review of Annex 4 and Annex 15 in accordance with the recommendation of the 11th Air Navigation Conference.

ICAO has developed provisions for Annex 15 enabling digital data exchange, electronic aeronautical information publications (eAIP), and electronic terrain and obstacle data (eTOD). ICAO is working on an update of provisions in Annex 4 relating to electronic chart display.

Recommendation 4

ICAO should incorporate transition activities into the Global Air Navigation Plan in order to ensure broad-based development of AIS/AIM capabilities across all ICAO Regions.

The Global Air Navigation Plan has been amended to incorporate a global plan initiative (GPI) relating to the provision of aeronautical information and the development of AIM capabilities.

Recommendation 5

ICAO should, as a matter of urgency, address the legal and institutional issues, including those associated with an expansion of service from AIS to AIM that could constrain the adoption and implementation of AIM.

ICAO held the Worldwide Symposium on Enabling the Net-Centric Information Environment from 2 to 4 June 2008. The objective of the Symposium was to address the institutional and legal issues encompassing organizational, financial and intellectual property aspects associated with SWIM. It has been noted that many of the issues, particularly with respect to

copyright and liability lie within the individual jurisdictions of States. However, issues with respect to cost recovery and relationships with third-party data providers are being examined.

Recommendation 6

States, working in close coordination with international organizations, should support ICAO in any activity to accommodate the transition from AIS to AIM.

The Secretariat has received direct support in the form of an expert seconded to work at the ICAO Air Navigation Bureau (ANB) for two years. Additionally, numerous States and international organizations are contributing to the work by supporting the participation of experts on the AIS-AIMSG.

Recommendation 7

Recognising the critical nature of aeronautical information in the present and future ATM systems, States should give high priority to the implementation of existing Standards, such as WGS-84, and Quality Management Systems and should, if necessary, request assistance from ICAO or from appropriate international organizations to do so.

ICAO has identified in the *Roadmap for the Transition from AIS to AIM* that a critical first phase of the transition is the compliance with existing SARPs and amendments as they become applicable. In this connexion, ICAO regional offices have been active in determining areas of non-compliance and outlining the need for States to prepare for the implementation of automation to allow for the transition to AIM.

Recommendation 8

Recognising the social dimension associated with change, ICAO, working with States and international organizations, should determine the required staff profile(s) for AIM, determine appropriate skills and competencies, amend existing guidance material and develop new guidance and training material to assist States and other AIS organizations in the transition process.

The Secretariat is developing an AIS training manual that will align the competency framework of the *Procedures for Air Navigation Services — Training* (PANS-TRG, Doc 9868) to EUROCONTROL's Common AIS Staff Profiling (CASP) and AIS Training Development Guidelines. The first draft is expected to be completed in 2010.

Recommendation 9

ICAO should promote open access to information.

The Secretariat has engaged in a dialogue with States, industry stakeholders to examine the issues related to copyright and trademark with a view of reducing barriers to open access to information.

Recommendation 10

ICAO should consider, as a matter of priority, how a global forum could be established.

ICAO is in the process of planning a divisional meeting which will address issues relating to the evolution and implementation of AIM.