



**Agenda Item 2: Air Navigation Matters**  
**2.3.2 Aeronautical Information Management (AIM)**

**States SARPs Compliance for First Phase Activities for the Transition to AIM**

(Presented by Secretariat)

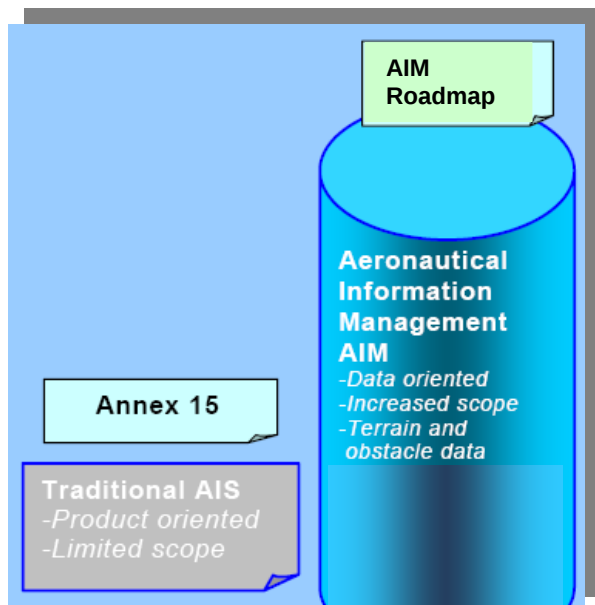
| SUMMARY                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| This information paper describes the need for the evolution of requirements for the global transition from Aeronautical Information Services (AIS) to Aeronautical Information Management (AIM) and how the ICAO Roadmap will enable this transition. A questionnaire on the States SARPs compliance has been submitted to States/Territories/International Organizations of the NAM/CAR Regions, concerning Phase 1 of this transition. |                                                                                                      |
| References:                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                      |
| <ul style="list-style-type: none"><li>• ICAO Annex 15.</li><li>• ICAO Roadmap for the transition from AIS to AIM.</li><li>• EMX516 dated 7 June 2010.</li></ul>                                                                                                                                                                                                                                                                          |                                                                                                      |
| <i>Strategic Objectives</i>                                                                                                                                                                                                                                                                                                                                                                                                              | <i>This information paper is related to ICAO Strategic Objectives A (Safety) and D (efficiency).</i> |

**1. Introduction**

1.1 The AIS field has evolved over the years to meet the needs of airspace users for comprehensive information on airspace configuration, air traffic controllers, aerodrome and navigation facilities and other details needed by pilots and other users in general. This development is ongoing and much effort is being dedicated to enhance and refine the provision of Aeronautical Information/data over the next few years. However, to satisfy the new requirements arising from the ATM, AIS has to make the transition in the medium term to Aeronautical Information Management (AIM), a significantly different method of information provision and management given its **data centric nature** as opposed to the **product centric approach** of AIS. AIM can meet the future needs of airspace users in a cost effective way.

1.2 Civil Aviation Authorities should recognize the critical nature of aeronautical information filed in the present and future ATM systems, States should also give high priority to the implementation of existing ICAO Annexes 15 and 4 Standards such as WGS-84 and Quality Management Systems and should, if necessary, request assistance from ICAO or appropriate international organizations. In addition it is important to recognize the social dimension of human factors associated with change. ICAO is working with States and international organizations to determine the required Staff Profile(s) for AIM and

determine appropriate skills and competencies in order to amend existing guidance material and develop new guidance and training material, under the Trainair programme, to assist States and other AIS organizations in the transition process.



1.3 AIS must be improved and develop to provide a harmonized, coordinated service delivering quality assured up-to-date information for all phases of flight and all users.

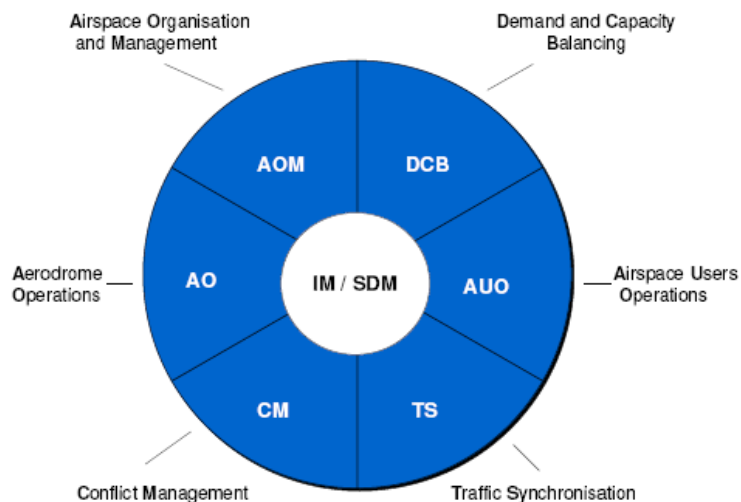
1.4 It is necessary to keep in mind that the major task of AIS, as defined in Annex 15 to the Chicago Convention, is to ensure the flow of aeronautical information necessary for the safety, regularity and efficiency of international air navigation. Annex 15 describes the extent of information required and the means by which it should be made available in the form of the Integrated Aeronautical Information Package (IAIP). Each ICAO Contracting State is responsible for ensuring that these obligations are carried out, whether a State itself directly provides the services defined in Annex 15 or whether this is undertaken by non-State organization(s).

1.5 The AIS and MAP situation of today can best be described as a semi-automated process which requires significant manual intervention and remains a master, paper reference document, even though the information may in many cases be maintained and transmitted electronically. In addition, the provision of Aeronautical Information is mainly focused on the requirements of pre-flight briefing rather than the whole spectrum of Gate-to-Gate concept requirements.

## 2. Discussion

2.1 Aircraft and Airport Operators, Air Traffic Services and other users community of the aeronautical information include a wide range of interest groups such as Military air, sea and ground forces, Airlines, General Aviation, Aerial Work and Sports Aviation, with extensive and sometimes conflicting needs and expectations. Generic to all users is the requirement that the future aeronautical

information services, together with the associated systems and infrastructure, are developed to support seamless air traffic and navigation services covering all phases of flight and all associated activities.



IM / SDM = Information Management / ATM Service Delivery Management

2.2 The AIM developments should be such as to facilitate the ability to plan and operate flights with maximum flexibility, flight safety/efficiency and cost effectiveness. These should be achievable with minimum constraints and with no degradation in safety. They should form a common set of processes and procedures applied uniformly regionally and world-wide.

2.3 The above paragraphs mention some of the main AIM requirements and aviation technological advances that far exceed the scope of traditional AIS and most cannot be satisfied by traditional AIS products, even in their newer digital format. It is evident and urgent that States/Territories and International Organizations must comply with the initial **Phase 1** of the Roadmap as soon as possible in regard to the needs and requirements of the users.

### 3. Conclusion

3.1 One of the major risks in the implementation of the ICAO Roadmap for the transition from AIS to AIM is that the speed of progress, both in enhancements of data quality and in the introduction of digital data handling technology which could vary significantly between States. In consequence, the need to reach a timely common agreement on the ICAO SARPs and procedures to be adopted as well as the institutional issues is fundamental and of high priority. Different States/Territories and International Organizations have different priorities for their limited financial and physical resources and as a consequence the transition from AIS to AIM could not in all cases be assigned the necessary priority.

3.2 AIM successful implementation is dependent on the timely availability of the appropriate network infrastructure, including dedicated and public (Internet) ground networks and air/ground data-link. It is therefore essential that the Communications infrastructure in the Region takes due account of the stringent communications requirements posed by AIM, these requirements are being developed by ICAO.

3.3 There are several ongoing ICAO activities which have a direct bearing on the successful implementation of AIM. Appropriate support from the aviation community of the AIM Study Group and the GREPECAS AIM Subgroup expected deliverables is essential, as they will make full and coordinated use of the results.

### 4. Current Activities

4.1 The E/CAR States/Territories should implement AIM requirements to allow operational enhancements to the electronic aeronautical information products in the near term. It is also necessary to review and consider the ATS plans and implementation process in order to assign particular priority to those activities like PBN in which AIM has a relevant role.

4.2 In a similar manner, E/CAR States/Territories that have not already done so must consider, at the earliest possible opportunity, to begin their national AIM implementation taking into account the NAM/CAR RPBANIP that includes the transition to AIM. States could obtain more information on this topic by contacting the ICAO NACC Regional Office or visiting the ICAO HQs website at <http://www2.icao.int/en/anb/met-aim/aim/Pages/RoadmapfromAIStoAIM.aspx>

4.3 In this regard, the meeting should consider that during the E/CAR/WG/31, the E/CAR States/Territories were requested to submit to ICAO NACC Regional Office a tentative programme and initial AIS/MAP action plans by 30 January 2010. However, since no replies have been received from the States, a questionnaire was submitted to the States/Territories/International Organizations of the NAM/CAR Regions with the purpose to inform their AIS status on SARPs implementation, which is shown as a reference in the **Appendix** to this information paper.

4.4 The meeting is invited to take note of the information contained in this paper related with AIM phase 1 from the Roadmap for the Transition from AIS to AIM.

## APPENDIX

AIS STATUS ON SARPs IMPLEMENTATION  
(Questionnaire)

**PHASE 1 — CONSOLIDATION.** During Phase 1 of the transition to AIM, steps will aim to strengthen a solid base by enhancing the quality of the existing products. Fine-tuning and improvement of SARPs for existing products will continue to be conducted in the usual manner in order to respond to near-term user requirements.

| Tasks/Activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | State:<br>_____ | Implementation dates                                                                                                 | <ul style="list-style-type: none"> <li>• Proposed date for full compliance /</li> <li>• Percentage implemented</li> </ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1. <b>Electronic AIP production.</b> e-AIP will have the exact same structure as the paper it is important that <b>States make every effort to issue their aeronautical information as specified in Annex 15.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Completed <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br>Dates: _____<br>Start _____<br>Finish _____ | Date: _____<br>Percent: _____ %                                                                                           |
| 2. <b>NOTAM system.</b> NOTAM as it exists today requires on-going upgrades to cope with new types of information (e.g. GNSS navigation) and to respond to the difficulties being reported by the users. Research and trials are underway and their results will be addressed in Phase 3 of the transition to AIM or later. It is important to continue to improve the current SARPs related to NOTAM to better serve users needs with the current products. It is also important for <b>States to continue to invest the time and effort necessary to comply with these SARPs.</b>                                                                                            |                 | Completed <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br>Dates: _____<br>Start _____<br>Finish _____ | Date: _____<br>Percent: _____ %                                                                                           |
| 3. <b>ICAO Aeronautical charts.</b> Many types form an integral part of the AIP. Amendments to specifications are also envisaged for electronic chart display but most of the SARPs in Annex 4 — <i>Aeronautical Charts</i> will remain applicable after the transition to AIM. It is important that <b>States comply with the existing Annex 4 SARPs.</b>                                                                                                                                                                                                                                                                                                                     |                 | Completed <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br>Dates: _____<br>Start _____<br>Finish _____ | Date: _____<br>Percent: _____ %                                                                                           |
| 4. <b>Requirement to use a common horizontal, vertical and temporal reference system.</b> Remains essential to facilitate the exchange of data between different systems. <b>The expression of all coordinates in the AIP and charts using WGS-84 is important and should be pursued during the first phase of the transition to AIM.</b>                                                                                                                                                                                                                                                                                                                                      |                 | Completed <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br>Dates: _____<br>Start _____<br>Finish _____ | Date: _____<br>Percent: _____ %                                                                                           |
| 5. <b>Provision of terrain and obstacle data.</b> e-TOD becomes applicable during Phase 1 of the transition to AIM. It will be an <b>important project to be conducted by States. Feedback from States on the implementation experience may require adaptation of the relevant SARPs.</b> Since these constitute also digital data sets products, the achievement of these steps will also contribute to Phase 2 of the roadmap.                                                                                                                                                                                                                                               |                 | Completed <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br>Dates: _____<br>Start _____<br>Finish _____ | Date: _____<br>Percent: _____ %                                                                                           |
| 6. <b>Quality Management System (QMS).</b> QMS requirements on information are covered by current SARPs in terms of accuracy and integrity. The steps in Phase 1 aim to meet these requirements. Should the requirements prove to be difficult to implement, the requirements would have to be reassessed to verify that the risk of harm to persons or damage to property for not achieving the requirements is reduced to, and maintained at or below, an acceptable level (definition of safety). In addition, <b>States will implement and continuously improve their quality management system in view of its increasing importance for future products and services.</b> |                 | Completed <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br>Dates: _____<br>Start _____<br>Finish _____ | Date: _____<br>Percent: _____ %                                                                                           |
| 7. <b>Aeronautical Information Regulation and Control (AIRAC).</b> The requirement for <b>States to adhere to the AIRAC process must be emphasized.</b> The quality of the future service to be provided under information management will rely on proper mechanism for distribution and synchronization of information. Shorter response times will be required in the future. This can only be achieved if the current requirements can, at the very least, be met.                                                                                                                                                                                                          |                 | Completed <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br>Dates: _____<br>Start _____<br>Finish _____ | Date: _____<br>Percent: _____ %                                                                                           |