



Agenda Item 3: Air Navigation Services

3.1 CNS/ATM

AIS/MAP ISSUES ON THE 11TH. AIR NAVIGATION CONFERENCE

(Presented by the Secretariat)

SUMMARY

This Working Paper is presented to the Meeting in order to update the General Directors on the concepts developed by the 11th. Air Navigation Conference regarding that the role of the aeronautical information processing under the Global ATM Operational concept will have, so that the Aeronautical Administrations start dealing with these concepts and make the corresponding follow-up to adapt them in the Aeronautical Information Services in their respective States.

References:

- 11th Air Navigation Conference

1. Introduction

1.1 During the Ninth AIS/MAP Subgroup Meeting and the Central American Air Navigation Working Group of Experts held y June and August 2005, respectively, the AIS specialists considered that it was very important to introduce the Aeronautical Information Management subject, as it was focused on the 11th Air Navigation Conference, in order to keep considering its application in the CAR/SAM Regions.

1.2 The 11th. Air Navigation Conference formulated several CNS/ATM concepts in order to pose again the implementation aspects of the new satellite-based air navigation systems, which are focused on the “global ATM operational concept”. This Working Paper includes some of those aspects so that the Meeting may determine the need for analyzing their involvement in air navigation services and, to this end, some of the foundations provided during the conference are presented in order to agree upon and to determine the aforementioned operational concept.

2. Global ATM Operational Concept

2.1 To gain an overview of the general scope of the global ATM operational concept, it is necessary to consider that it offers a global framework that would allow information on the planning processes of the States and the Regions. In this regard, the meeting should refer to the following Recommendation of the Conference which includes the guidelines to follow, and that will serve as the basis for the future work of the Group and to develop the concept regarding aeronautical information management (AIM) and the AIS services:

Recommendation 1/1 — Support to the global ATM operational concept

That:

- a) ICAO, States and planning and implementation regional groups (PIRGs), consider the global ATM operational concept as the common global framework to guide planning for implementation of ATM systems and to focus all ATM development work;*
- b) the global ATM operational concept be used as guidance for development of ICAO CNS/ATM related provisions;*
- c) States with the support of the other members of the ATM community undertake work to validate the seven components in the global ATM operational concept;*
- d) ICAO, States and PIRGs develop transition strategies for implementation of ATM systems based on the global ATM operational concept; and*
- e) ICAO align its technical work programme to facilitate future work related to the global ATM operational concept.*

2.2 Aspects to be considered

- **Scope of the Operation Concept:** Describes the necessary services for the functioning in the world-wide air traffic system, that extends until year 2025, and beyond. Pay attention to the flexibility increase of the users and maximize the operation efficiency, increase the system capacity and improve the safety levels of the future ATM System.
- **Concept components:** The seven “concept components” considered as building blocks, or services, are integrated to form the ATM system. These are: airspace organization and management; aerodromes operations; demand and capacity balancing; traffic synchronization; conflict management; airspace user operations and ATM service delivery management. The “glue” that binds these components is the management, utilization and transmission of data and information.
- **Regional different prospects:** The prospects of any particular region will be different, in the initial stages, to an adjacent or distant region. Each system component is a “building block” evenly covered, which makes easier the aircrafts movement by the regions to achieve harmonization and world-wide inter-functioning.

- **Regional coordination:** Recognizing that not all States or regions may proceed immediately to the ATM system, described in the concept, it is included in the operational concept details on an expected planning and an evolutionary process in the ICAO frame, which expects its implementation through strategy plans, among others, the CNS/ATM global air navigation plan systems; regional plans and implementation plans of the States.
- **Interoperability and continuity:** These are described as the ability to transfer information or effect functionally, across any discontinuity, to allow operation and as the property allowing the transition through a discontinuity without “seamless”

3. Discussion

Information services

3.1 The Conference used criteria on focusing on a perspective of the information services in general. It was pointed out that the function of information services deals with the exchange and management of information used by different processes and services. It will ensure the cohesion and linkages between the seven concept components described above.

3.2 In the context of the 11th. Conference, it may be assumed that the air traffic management (ATM) global operational concept represents ICAO’s vision of an integrated, harmonized and inter-functional ATM system at a world-wide level, and that inside the planning of integrated, harmonized and inter-functional operational concept, the aeronautical information services is found and will be an essential part in the aeronautical information management.

3.3 In aeronautical information management aspects (AIM), which is the new nomenclature designating the aeronautical information processing, are considered by the Conference within the subjects of titles referring to “*Enabling concepts in support of the global ATM operational concept*”; “*The role and function of the Global Air Navigation Plan for CNS/ATM Systems*”; and “*Enhanced data integrity for RNAV and GNSS-based operations*”. These are attached as **Appendix** to this working paper.

3.4 **Some aspects of the AIM**

3.4.1 It may be inferred that in order for the ATM system to fully work, it needs:

- a) relevant information when and where required.
- b) ATM community will depend on the information management, shared by all the system, to adopt decisions based on collaboration leading to obtaining best commercial and operational results.
- c) In this way, information management will provide the basis for improved decision-making by all ATM community members.
- d) Key to the concept will be the management of an information-rich environment whose integrity must be ensured by the quality systems.
- e) To ensure the cohesion and linkages between different components of the operational concept and to accomplish the AIS role, consideration must also be given by AIS to the interchange and management of aeronautical information to be used by different services and users, while taking into account interoperability of existing and future systems.

f) To be efficient, aeronautical information management (AIM) shall incorporate the structure, delivery and critical nature of all the information pertaining to ATM such as aeronautical and meteorological information, flight planning, planned and real time ATM status and CNS systems and airspace configurations. Specifically, the decisions taken by the controllers, pilots, dispatchers, flight planners, meteorologists, etc. represent information used by others as data for their own planning and decision-making process.

3.5 Some characteristics of AIM

3.5 Likewise, new terms and characteristics on the AIM are inferred, so that the Meeting considers its application at regional level.

- a) aeronautical information shall be subject to an efficient management and shall be shared throughout the system, making it available so that every participant in the ATM environment has access to it when and where needed.
- b) aeronautical information shall be produced from its origin under quality processes ensuring its availability, relevance, precision, integrity, timeliness, security, confidentiality, due its repercussion given in flight safety.
- c) aeronautical information, quality-controlled and within a digital environment, shall be available in real time in an interoperable, flexible, adaptable and scalable manner between parties.
- d) The aeronautical information conceptual model/aeronautical information exchange model (AICM/AIXM), and their mutual interoperabilities; are the models suggested by the Conference to develop AIM.

5 Suggested action

5.1 That States/Territories take note and consider the following Project of Conclusion:

**PROJECT OF
CONCLUSION 02/xxx STUDY OF THE AERONAUTICAL INFORMATION
MANAGEMENT (AIM) CONCEPT**

That States/Territories/International Organizations:

- a) initiate the corresponding studies for the planning and development of the AIM concept in the AIS/MAP services of the NAM/CAR Regions and, to that end, be included as a task of the work programme of the existing working groups, taking into account, as reference, the Air Navigation Global Plan for the CNS/ATM Systems and the Recommendations of the 11th Air Navigation Conference, and
- b) take the necessary measures and initiate the corresponding actions for the application of the AIM concept in the respective AIS/MAP services of the NAM/CAR Regions.

APPENDIX

THE SEVEN ATM CONCEPT COMPONENTS

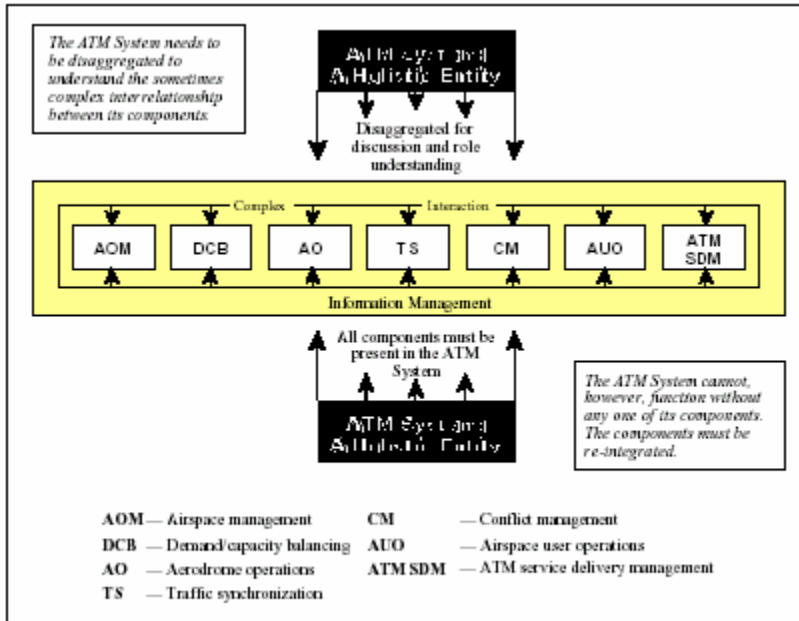


Figure 2-1

- END -