International Civil Aviation Organization

MID Region AIS Database Study Group

Second Meeting (MIDAD STG/2)
(Cairo, Egypt, 1 - 3 July 2013)

Agenda Item 4: MIDAD Project – Phase 2 (Detailed Study)

MIDAD PROJECT

(Presented by United Arab Emirates)

SUMMARY

This paper provides the contribution of UAE in the establishment of a regional aeronautical information database.

1. INTRODUCTION

1.1 The establishment of a regional aeronautical information database for the Middle East is considered to have a beneficial effect in harmonising the provision of aeronautical information services and in creating an environment of high quality assured and timely provided aeronautical data for the stakeholders.

1.2 Apart from this benefits, a regional aeronautical information database would facilitate and tighten the cooperation between the aeronautical information services in the region and would open the possibilities to interact with similar developments in other ICAO Regions (such as the European AIS Database – EAD).

2. DISCUSSION

2.1 Considerations on the MIDAD Establishment

2.1.1 The establishment of a regional aeronautical information database has a lot of benefits and the EAD is a living proof in this respect. It provides a harmonisation and a better quality control of the aeronautical data which is welcomed by the data users such as aircraft operators (AO), airports, ATM, data integrators, etc. In the same time it provides the means for a better cooperation between the national AIS organisations and it enhances the cross-border cooperation in the interest of civil aviation.

2.2 Decision Making Process

2.2.1 In order to achieve its benefits, the decision-making process should be based upon a Concept of Operations (CONOPS); the CONOPS should provide an initial analysis of the Middle East performance in what AIS/AIM is concerned and should highlight each of the Member State's status in the current provision of aeronautical information services.

2.2.2 The CONOPS has to take into consideration as a minimum the following factors:

a. The status of each State in respect to the developments and investments, e.g. digital data and information database, automated publication of the AIP (eAIP), etc.
b. Level of adoption of certain technologies in support of its services, e.g. integrated architectures for the ATM and AIM systems in order to ensure interoperability (automatic data feed from the AIM system to FDPS and radar maps for the ATC)
c. Adoption of certain standards for the digital data management, such as ISO 19000 series, GML, UML, etc.
d. Adoption of a certain data model; some States may use ARINC 424, others AIXM, etc. For example, UAE GCAA adopted a data model based on AIXM 5.1 which is considered best suited for and in line with the ICAO Amendment 37 to Annex 15 and the ASBU Block 0 and1, Performance Improvement Area 2 (Globally Interoperable Systems and Data) as well as with the European Union Regulation (ADQ) in this respect
e. The strategies for evolution and their respective timeframes for achieving, e.g. the Transition from AIS to AIM, the implementation of the ICAO Global ATM Operational Concept based on digital ATM
f. The development and the implementation of the Digital NOTAM concept

2.2.3 The CONOPS should be complemented by a cost-benefit analysis and a feasibility study aimed at highlighting the particularities of implementing the regional AIS database in the Middle East. Also the experience and the lessons learned from the EAD should be considered in this context.

2.3 Considerations on the Participation of the UAE in MIDAD

2.3.1 UAE/GCAA in an advanced implementation status technologically and process-wise, with a state-of-the-art AIXM 5.1 system and with an automated production of the electronic AIP based on the EUROCONTROL Specification for the eAIP, Edition 2.0 (February 2011). It has also established procedures and processes for exchanging aeronautical data with the UAE ACC, based on AIXM 5.1 snapshot messages.

2.3.2 The support for the development of and the participation in MIDAD should ensure UAE that the current system architecture and the processes in place, as well as the strategy for evolution towards a fully digital environment will be preserved.

2.3.3 The User Requirements and the Technical Requirements for MIDAD will have to take this into consideration and the proposed / implemented solutions will have to ensure the interoperability with the most advanced systems.

2.4 Financial impact of MIDAD

2.4.1 It should be noted, from the experience of establishing EAD in Europe that a centralized service such as MIDAD comes with a cost.

2.4.2 For each participating State, the funding of such a service (from the specification phase, to development, deployment and continuous provision of the service) should be identified and budgeted.

2.5 **Continuity of Service and Contingency Procedures**

2.5.1 One of the most important aspects of a centralised service such as MIDAD is the insurance of its availability and continuity. Therefore, the establishment of contingencies is one of the fundamental aspects to be addressed.

2.5.2 The continuity of service in extreme cases such as natural disasters, accidental interruptions in the infrastructure (electrical shortages, network glitches, catastrophic failure of the equipment) has to be mitigated by establishing a contingency system / site capable of taking over from the principal system in a manner defined by the performance criteria of a contingency plan.

2.5.3 There are different scenarios to address the contingency issues. For example, EAD operates two independent sites fully interoperable and located remotely one from another. The service provider is capable to switch from one site to the other and to provide the complete services at full capacity until the normal operations are resumed. More than that, the infrastructure and IT provider is located at a third site and has full redundancy capabilities.

2.5.4 Another example that may be considered in establishing the operation scenarios is the ATFM in Europe, provided by EUROCONTROL within its Network Manager Unit. The concept of operations is based on two completely independent sites (like EAD) with the addition that each site can operate remotely the facilities of the other site.

2.5.5 The level of redundancy and the contingency procedures should take into account the sensitivity and the criticality of the services provided (e.g. operating a static database, providing a centralised NOTAM function, etc.).

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note and consider the information provided in this working paper;

b) reconfirm the necessity to develop a Concept of Operations (CONOPS) as a basis for MIDAD establishment; and

c) consider the requirements for the continuity of service and for contingency procedures.

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