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International Civil Aviation Organization
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Transition to CNS/ATM Systems in the CAR and SAM Regions

SECOND MEETING OF THE GREPECAS ATM/CNS SUBGROUP ATM COMMITTEE AIR TRAFFIC MANAGEMENT TASK FORCE (ATFM/TF/2)

(Bogotá, Colombia, 6 to 8 July 2006)

Agenda Item 2: Caribbean/South American flow management operational concept (CAR/SAM ATFM CONOPS).

Analysis of the stages proposed for the operational implementation of the regional ATFM in order to maximise the use of available resources by the States, be it automated systems, equipment or the experience of local staff

(Presented by Brazil)

Summary

This working paper shows the stages proposed for the operational implementation of the ATFM service, making sure that ICAO develops the strategies for a gradual transition in coordination with the ATS, to permit the best cost-benefit assessment. Each stage must be implemented based on technical configurations, system descriptive documents, and operational models, established according to the requirements of the assigned strategy.

1. Introduction

1.2 ATFM is a CAR and SAM requirement that is directly related to the ATM operational concept component referred to airspace organisation and management (AOM). ATFM implementation is a new challenge, since, based on the assessment of the systems available or planned in the region, integrated and interoperable automated systems will be required for the establishment of criteria for drafting the Regional Strategy for the Integration of Automated Systems. It will be necessary to identify the minimum requirements for ATFM implementation and define the principles on which such service will be based. This will permit the development of ATFM Implementation Guidelines for the CAR/SAM Regions.

1.2 It is expected that this programme will propose the implementation of air traffic management units (FMU) in the short term, so as to immediately permit the implementation of strategic ATFM at airports. The future centralised ATFM shall ensure an optimum traffic flow in areas or airspaces where the demand might exceed the available capacity of the ATC in given periods of time, thus reducing flight and ground delays and avoiding system overloads.

1.3 This implementation will provide the regions with more effective methods for determining the available airspace and airport capacity, thus maximising the available capacity, which is one of the objectives of ATM.

1.4 The form and methodology of implementation of other similar centres, like the ATCSCC and CFMU, as well as the experience gained with the CGNA proves that it is possible to obtain basic ATFM products at the airport, without the immediate need for a Regional Centre, which will require extensive and comprehensive studies to define operational concepts, system requirements, and institutional aspects for full implementation of ATFM in the CAR/SAM Regions.

2. ATFM elements

2.1 ATFM must include the following elements:

- Database of mapping elements;
- Air traffic demand database;
- Aircraft database;
- System to determine airport capacity;
- System to determine ATC capacity; and
- Decision-support system.

3. ATFM implementation stages

3.1 In order to maximise the use of all resources available in the regions, be them personnel, equipment, facilities, and/or automated systems, the whole ATFM implementation process should be established, planned, and conducted in stages, namely:

Strategic airport ATFM

3.2 It is the simplest ATFM stage, be it because of the operational part, or because of the reduced need for automated systems. It basically requires a data bank with information on scheduled flight plans (OAG and/or RPL), airport capacity data, and an airport data display system.

3.3 Probably, it will not be necessary to incur in significant costs or to have highly experienced personnel, and, in the short term, Air Traffic Flow Management Units (FMU) will have a tool for the immediate implementation of the strategic ATFM at their airports.

Tactical airport ATFM

3.4 This stage supplements the strategic airport ATFM, basically with the inclusion of other non-scheduled flight information (mainly filed flight plans - FPL) and ATS messages concerning flight plans.

3.5 Problems will be defined for each State on the basis of current processing filed flight plans and ATS messages, as well as the means used to transmit plans and messages.

Strategic airspace ATFM

3.6 In this ATFM stage, it is necessary to define the operational concepts and the requirements of an ATFM processing system, taking into account that management covers the airspace, and, therefore, flight plans must be simulated. There must be a good knowledge of current ATC flight plan processing systems in the States, in order to achieve the highest level of integration with the ATFM system.

3.7 Air Traffic Flow Management Units (FMU) will be necessary but not sufficient for ATFM application, and there must be adequate telecommunications to support data messages between the units and the Centre.

3.8 An aircraft (performance) database, ATC capacity data, and an airspace data display system should system should be added to the data bank.
Note: An assessment should be made of the need for immediate application of wind data.

Tactical airspace ATFM

3.9 This stage supplements the strategic airspace ATFM, basically with the inclusion of other non-scheduled flight information (mainly filed flight plans - FPL) and ATS messages concerning flight plans.

3.10 Problems will be defined for each State, based on the current processing of filed flight plans and ATS messages, as well as on the means used for the transmission of plans and messages.
Note: An assessment should be made of the need for immediate application of wind data and the update of flight plans with radar information.

4. Suggested action

4.1 The meeting is invited to:

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

b) urge the members of the ATFM Task Force of the ATM Committee to begin the activities and tasks assigned by GREPECAS on this matter, and to participate in the activities to be carried out during ATFM implementation stages.