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International Civil Aviation Organization
UNDP/ICAO Regional Project RLA/98/003
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 requirements and characteristics of the strategic and tactical phases of ATFM service provision in the CAR/SAM Regions.

(Presented by Brazil)

Summary

This working paper describes the experience gained in Brazil with the studies on the methodology used by the CFMU during the strategic and tactical ATFM phases, and its use in the CGNA project.

1. Introduction

1.1 It is not always possible to achieve optimum air traffic flow, mainly due to various factors and different and conflicting user interests, navigation system limitations, and meteorological factors. This results in flight delays, use of flight levels that are not cost effective, new routes and diversions, interruptions in aircraft flight schedules, greater fuel expenditure, congestion at airports and terminal buildings, and user dissatisfaction. Measures imposed by ATC (flow control) are normally restrictive, and should only be applied to ensure flight safety. Flow management measures adopted jointly are the most appropriate model for ATM.

1.2 Thus, since 1997, the CGNA has conducted studies and inquiries about the most appropriate air traffic flow management model for Brazilian requirements, bearing in mind the situation of automated ATC systems and national characteristics, specifically air traffic imbalances in certain airports. Documents available from the FAA (ATCSCC) and Eurocontrol (CFMU) were used, and the conclusion was reached that the CFMU model should be the main reference for the ATFM operational concept.

2. ATFM model

2.1 The models presented by the CFMU basically use Cartesian graphs to show the demand-capacity ratio for a given future period. This future period defines the phase to be used, namely:

Strategic phase

2.2 The strategic phase shows the demand-capacity ratio for a future period other than the day of the flight. It may be depicted using automatic displays that cover seven (7) days, starting on the current date, always with a duration of twenty four (24) hours: D0; D1; D2; D3; D4; D5; D6 and D7. On day "D7", a list of elements showing air traffic saturation must be generated, and the shared decision-making process started. The other days--D1, D2, D3, D4, D5 and D6--must have their updated listings. The final analysis should be made in the pre-tactical and tactical phases.

Note 1 - The D0 display should also be used for the pre-tactical phase.
Note 2 – Manual displays generated by the ATFM manager may establish the demand-capacity ratio for any given future period and for any given duration.

Pre-tactical phase

2.3 The pre-tactical phase shows the demand-capacity ratio for the day of the flight. The initial planning should be done during the strategic phase, including the proposals for joint measures, unless unforeseen restrictions arise, resulting in an effective reduction of installed capacity.

Tactical phase

2.4 The tactical phase is very dynamic and shows the demand-capacity ratio for several hours, starting at the current time. Jointly-adopted measures will be applied, through reports to the ATC and to aircraft and airport operators.

3. Suggested action

3.1 The meeting is invited to:

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

b) analyse the various scenarios proposed by ATFM models; and

c) 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 by the Task Force concerning ATFM phases for the ATFM operational concept.