

**International Civil Aviation Organization
UNDP/ICAO REGIONAL PROJECT RLA/98/003
Transition to the CNS/ATM Systems in the CAR and SAM Regions**

RNAV ROUTES PRE-OPERATIONAL TRIALS

1. Introduction

1.1 In accordance with GREPECAS planning, endorsed by the Third RAN CAR/SAM Meeting, it was decided to carry out pre-operational trials and demonstrations for long range flights between city pairs, which will enable the gradual introduction of CNS/ATM elements in the CAR/SAM regions and the use of the avionics already installed in the aircraft and, in this way, obtain substantial time and fuel savings to the users.

1.2 During the First Meeting/Workshop of ATM Authorities and Planners of the CAR/SAM Regions (AP/ATM/1), Lima-Peru, July 2000, the implementation of pre-operational trials and demonstrations in RNAV routes UT780 (Santiago- Lima/Miami) and UT 795/UT799 (Sao Paulo-Rio de Janeiro/Miami) was approved, which are in force since 30 November and 28 December 200, respectively.

2. Evaluation of pre-operational trials and demonstrations in RNAV UT 780 and UT 795/UT 799 routes

2.1 With the purpose of evaluating the trials in the referred routes, a Second Meeting/Workshop of ATM Authorities and Planners of the CAR/SAM Regions (AP/ATM/2), Lima-Peru, May 2001, was held sponsored by RLA/98/003 Project, in which 8 States from the CAR Region, 13 States from the SAM Region and 3 international organizations, COCESNA, SITA and IATA, participated, with a total of 44 participants. Among the main benefits obtained are:

- a) Decrease of flight distances and times.
- b) Significant fuel savings with the subsequent money savings.
- c) Major possibilities of obtaining optimum flight levels.
- d) Trajectories away from mountainous areas.
- e) Flexible use of the airspace allowing the over-flying in restricted zones and special use airspaces.
- f) Uniform applications of the longitudinal separation.
- g) Improvements in some shortcomings and deficiencies regarding ATS speech and ground/air communications.
- h) Acquisition of planning and implementation experience by the personnel of the services providers.
- i) Extensive use of the Mach Number Technique (MNT).
- j) Significant improvements in coordination processes among every party involved in these pre-operational trials and demonstrations.

2.2 Among the main shortcomings, the following were identified: deficiencies in the ATS speech circuits Manaus/Maiquetia ACC, the lack of reliable ground/air communications in the south of the Maiquetia FIR and the impact on the use schedule of the warning area W 1001 in routes UT 795/799, in view of which, the meeting considered the postponement of their definitive implementation until these

deficiencies and shortcomings are solved. The States involved expressed that they have already plans to overcome such deficiencies as soon as possible.

2.3 Taking into account that in the Brazilian territory already exists a national route that also links Rio de Janeiro with route UT 795, the AP/ATM/2 meeting considered convenient to proceed with the elimination of route UT 799.

3. Definitive implementation of RNAV routes UT 780 and UT 795

3.1 The meeting considered that it will be highly beneficial to include such RNAV routes in the CAR/SAM Air Navigation Plan, as soon as possible, and formulated conclusions 2/1 “Definitive Implementation of RNAV routes UT 780 and UT 795 with their new designators UL 780 and UL 795” and 2/2 “Publication of AIP (AIRAC) and AIC Supplement for the validity extension of route UT 780 and elimination of route UT 799”.

3.2 After relevant coordinations among the NACC and SAM Regional Offices and the States, Territories and International Organizations involved, the process to include routes UL 780 and UL 795 in the CAR/SAM Air Navigation Plan – ANP Basic was initiated, circulating the corresponding proposal for amendment, which target date for the reception of comments was 30 November 2001.

4. Pre-operational trials and demonstrations in new RNAV routes between Buenos Aires/Miami (UT 410), Sao Paulo-Rio de Janeiro/New York (UT776/UT419) and Sao Paulo/Los Angeles (UT 655)

4.1 Trials and demonstrations in RNAV routes Buenos Aires/Miami (UT 410), Sao Paulo-Rio de Janeiro/New York (UT776/UT419) and Sao Paulo/Los Angeles (UT 655) were initiated and after multiple and complicated coordinations necessary for the implementation of these RNAV routes, only route UT 655, Sao Paulo/Los Angeles, was successfully implemented in the date foreseen, 4 October 2001.

4.2 In view that the process to collect the required information of some significant points and their corresponding geographic coordinates was not achieved within the period established and at the same time delayed the preparation process of the corresponding cartography for its utilization by the participating aero commercial companies, route UT410 (Buenos Aires/Miami) will be implemented on the 1st December 2001.

4.3 Furthermore, in view that Guyana has foreseen the implementation of the Air Traffic Services in the Georgetown FIR for the end of 2001 and due to the problematic stated by the United States in respect of WATRS area in the New York FIR, it has been agreed to postpone the implementation of routes UT 776 and UT 419 (Sao Paulo-Rio de Janeiro/New York) until February 2002.

5. RNP pre-operational trials and demonstrations

5.1 Studies to carry out pre-operational trials and demonstrations will be carried out to establish a parallel route to the actual RNAV route UT 780 with RNP 10 value and with a lateral spacing of 50 NM between center lines route, which will enable to obtain operational experience and achieve operational and economic benefits, while keeping and improving the required safety levels. Furthermore, it was considered opportune that this matter be reviewed by the ATM Committee of the GREPECAS ATM/CNS Subgroup and that this same Committee perform an implementation plan for the RNP pre-operational trials.

5.2 GREPECAS 10, Canary Islands, Spain, October 2001, formulated **Decision 10/17 – RNP 10 Trials and Demonstrations in the CAR/SAM Regions**, through which Project RLA/98/003 is requested to:

- a) initiate a RNP 10 trials and demonstrations program in the airspace extended from Santiago de Chile to Miami along route UT 780 and its parallel route; and
- b) take as reference the Action Plan elaborated by the ATM/CNS Subgroup.