

Agenda Item 2: Action Plan for RNP Implementation in the CAR/SAM Regions**a) Review of the Action Plan for RNP 10 Pre-Operational Implementation in parallel routes UL 780 and UL 302 in the Santiago de Chile-Lima segment**

2.1 The meeting took note of the report on Safety Assessment for RNP 10 Pre-Operational Implementation in parallel routes UL 302 and UL 780 in the Santiago de Chile-Lima segment, presented by the CAR/SAM Regional Monitoring Agency (CARSAMMA). This report indicates that the collision risk value found for the current traffic in the Santiago de Chile-Lima segment of the referred routes is 7.3350×10^{-10} , less than the TLS of 5×10^{-9} established for the CAR/SAM Regions. This collision risk has been estimated for traffic growth rates of 2, 4% and 6% for the period 2002 to 2012. The report is already published in the CARSAMMA and ICAO SAM Regional Office websites.

2.2 The delegates of Chile and Peru informed the meeting on the activities being jointly developed by both Administrations. Taking into account that some activities have already been finalized and that others require to update the finalization date, they proposed small modifications to the Action Plan for RNP 10 Pre-Operational Implementation in parallel routes UL 302 and UL 780 in the Santiago de Chile-Lima segment, which are presented in **Appendix A** to this part of the report. Likewise, considering the results of the Safety Assessment carried out by CARSAMMA, Chile and Peru agreed to proceed with the implementation; in this respect, the following conclusion was formulated:

Conclusion AP/ATM/6/12**RNP 10 Pre-Operational Implementation in in parallel routes UL 780 and UL 302 in the Santiago de Chile – Lima segment**

That, considering the favorable results of the safety assessment presented by CARSAMMA, Chile and Peru:

- a) continue **RNP 10 Pre-Operational Implementation in parallel routes UL 780 and UL 302 in the Santiago de Chile – Lima segment**, foreseen for 22 January 2004, according the Action Plan presented in **Appendix A** to this part of the report.
- b) publish the AIC presented in **Appendix B** to this part of the report on 27 November 2003.

2.3 IATA presented the cost/benefit analysis for the users in RNP 10 implementation in RNAV routes UL 780 and UL 302 in the Lima – Santiago de Chile segment, indicating an estimated saving of 900,000 USD per year.

b) Review of the CAR/SAM RNP Application Strategy

2.5 The meeting took note of the information provided by the RNAV/RNP Task Force Rapporteur (RNAV/RNP/TF) regarding the proposal for the updating of the ATM Evolution Tables of the CAR/SAM Air Navigation Plan (ANP) Vol. II – FASID, related to RNP application and updating of the implementation dates foreseen, considering the last amendments to ICAO Annex 11, Appendix B, which require a greater analysis for their application in both regions; for which the following conclusion was formulated:

Conclusion AP/ATM/6/13**Updating of the CAR/SAM ATM Evolution Tables**

That the RNAV/RNP Task Force and the ICAO NACC and SAM Regional Offices review the proposal for amendment to the CAR/SAM ATM Evolution Tables shown in the **Appendix C to WP/24** presented in this meeting and submit their results at the Third Meeting of the GREPECAS ATM/CNS Subgroup.

2.6 At the same time, the RNAV/RNP/TF rapporteur presented traffic movement and aircraft type data, provided by CARSAMMA, that regularly operate in the Brasilia, Curitiba, Ezeiza, Montevideo and Havana FIRs, which would be the most appropriate and of greatest potential FIRs for a prompt RNP implementation. In this regard, the meeting formulated the following conclusion:

Conclusion AP/ATM/6/14**RNP Implementation Analysis in the Brasilia, Curitiba, Ezeiza, Havana and Montevideo FIRs**

That the RNAV/RNP Task Force, with the support of the ATM experts of Argentina, Brazil, Cuba and Uruguay, initiate the feasibility studies for RNP implementation in the Brasilia, Curitiba, Ezeiza, Havana and Montevideo FIRs and present the results at the ATM/CNS/4 meeting.

Terms of reference of the RNAV/RNP Task Force

2.7 **Appendix C** to this part of the report presents the terms of reference of the RNAV/RNP Task Force (RNAV/RNP/TF).

**ACTION PLAN FOR THE IMPLEMENTATION OF A RNP 10 PRE-OPERATIONAL TRIALS PROGRAMME IN
RNAV ROUTES UL 780 AND UL 302**

Activities	Responsible Area	Starting date	Finalization date	Status of application	Remarks
1. Regional Agreement for: - RNAV Route parallel to route UL 780; and - RNP 10	GREPECAS	23.10.01	27.10.01	COMPLETED	During GREPECAS 10 it was achieved a regional agreement in order to implement the RNP 10 programme and the parallel routes.
2. Identification of operational needs.	GREPECAS	23.10.01	27.10.01	COMPLETED	During the AP/ATM/2 Meeting, Lima, Peru, 14 to 18 May 2001, States involved identified the need to establish a pre-operational RNP 10 Implementation Programme in order to acquire experience in such implementation and in related procedures.
3. Establishment of a Monitoring Agency.	GREPECAS	23.10.01	27.10.01	COMPLETED	Conclusion 11/33 of GREPECAS 11 assigned Brazil the CAR/SAM Regional Monitoring Agency.
4. AIC for the dissemination of Information.	States	June 2002	17.04.03	COMPLETED	Most of the information related to the pre-operational implementation by all means available will ensure the success of the implementation in the target date.
5. Coordination with ATS providers and users.	States	June 2002	Permanent activity		Most of the dissemination of the programme will ensure the success of the implementation in the target date.

Activities	Responsible Area	Starting date	Finalization date	Status of application	Remarks
6. Study of the impact in the airspace.	States	June 2002	December 2002	COMPLETED	The impact in airspace is essential, especially in the issues regarding the use of prohibited and/or restricted areas as well as geographic issues.
7. Cost-benefit analysis considering: - ATS services providers; and - Users.	States/IATA	June 2002	AP/ATM/6	COMPLETED	IATA informs that the implementation is beneficial and represents an annual saving near to US\$0.9 to the users of these routes.
8. Establishment of procedures to: a) Approve the RNP 10 for aircraft; and b) RNP10 Operational Approval c)	a) Appropriate Aeronautical Authority; and b) Operator Status.	June 2002	July 2003	COMPLETED	The RNP 10 approval process will use the dispositions developed by the Administrations of Chile and Peru and the FAA Order 8400.12 A for RNP 10 operation on the North Pacific route System.
9. Updated establishment and maintenance of a record of RNP 10 approved aircraft.	CARSAMMA	June 2002	Permanent activity		The timely knowledge of RNP 10 approved aircraft will allow the CARSAMMA to inform the States involved of the progress status of the RNP 10 approval.
10. Establishment of a minimal amount of RNP 10 approved aircraft before initiating the trials.	States	June 2002	July 2002	COMPLETED	A minimum of 90% of the amount of aircraft that normally operate in the airspace that will be RNP 10 designated shall have to be RNP 10 approved prior to implementation.

Activities	Responsible Area	Starting date	Finalization date	Status of application	Remarks
11. Programme for airspace safety assessment.	CARSAMMA	January 2003	Permanent activity		<p>a) Considering the goal of 5×10^{-9} (TLS) in fatal accidents by flight hour, safety assessment is a fundamental element to implement the programme.</p> <p>b) CARSAMMA presented the results of safety assessment in the AP/ATM/6 meeting.</p>
12. Data collection programme for the evaluation .	States and IATA	N/A	Permanent activity		More than 10 NM deviations only will be informed.
13. Publication of an AIC that informs the aeronautical community about the introduction of procedures and requirements.	States	N/A	02.11.03	IN PROGRESS	Includes Flight Contingency Procedures.
14. Publication of an AIP with the applicable procedures and requirements.	States	June 2002	02.11.03	IN PROGRESS	States should include in their corresponding AIPs the minimum requirements and the applicable supplementary procedures.
15. Notification to the CARSAMMA of: a) RNP 10 approved Aircraft; b) RNP10 approved operational operators.	States	June 2002	Permanent activity		Timely notification will ensure the success of the implementation in the planned date.

Activities	Responsible Area	Starting date	Finalization date	Status of application	Remarks
16. Deadline to have at least, the minimum amount of RNP 10 approved aircraft.	States	N/A	September 2003	COMPLETED	Target date in which if the deadline is not accomplished, the implementation of the programme will be delayed.
17. Implementation progress evaluation of the WGS-84 in the FIRs involved. 18.	NACC and SAM Regional Offices	November 2001	January 2003	COMPLETED	To accomplish the success in the implementation programme and of the GNSS use, involved States should implement the WGS 84.
18. Establishment and implementation of a training programme.	States and Users	June 2002	November 2003	IN PROGRESS	The administrations of Chile and Peru will inform the ICAO SAM Regional Office through electronic means the accomplishment of the training programme.
19. Safety assessment	CARSAMMA	January 2003	AP/ATM/6	COMPLETED	CARSAMMA informed that the values of the collision risk are below the Target Limit of Safety of 5×10^{-9} fatal accidents per flight hour.
20. Evaluation of the operational availability	CARSAMMA	January 2003	AP/ATM/6	COMPLETED	
21. Decision to continue or postpone the pre-operational trials.	States	N/A	AP/ATM/6	COMPLETED	The administrations of Chile and Peru decided to continue with RNP 10 pre-operational implementation in view of the results of the safety assessment, users and States preparation and ATS providers.

Activities	Responsible Area	Starting date	Finalization date	Status of application	Remarks
22. Date of the RNP 10 pre-operational implementation	States	N/A	22.01.04	IN PROGRESS	The administrations of Chile and Peru will publish a Trigger NOTAM on 15 January 2004.

Appendix B

Aeronautical Information Circular (AIC) for RNP 10 Implementation in RNAV parallel routes UL 780 and UL 302 in the Santiago de Chile – Lima segment

Address: Telephone: Other information:	(Name of State)	AIC No DATE OF PUBLICATION
--	-----------------	----------------------------------

RNP 10 PRE-OPERATIONAL IMPLEMENTATION IN THE AIRSPACE CORRESPONDING TO PARALLEL ROUTES UL780 AND UL302

1. INTRODUCTION

1.1 The RNAV parallel routes UL780 and UL302 are located in the oceanic area, which lies within Flight Information Regions of Santiago, Antofagasta and Lima.

1.2 The International Civil Aviation Organization (ICAO) has specified that Required Navigation Performance (RNP) is an important element of the Communications, Navigation and Surveillance / Air Traffic Management System (CNS/ATM) and is encouraging early implementation in the en-route environment.

1.3 In accordance with the approved CAR/SAM Planning and Implementation Group (GREPECAS) strategy through the ATM/CNS Subgroup, Chile and Peru are planning to implement with pre-operational character two RNAV parallel routes based on RNP 10 in the oceanic airspace.

1.4 The pre-operational implementation will be starting on January 22, 2004. The SAM Air Navigation Plan (DOC 8733) and the Special procedures for in flight contingencies were agreed during the Sixth Meeting/ Workshop of Air Traffic Management Authorities and Planners (AP/ATM/6).

2. PURPOSE

2.1 The intention of this Circular is to disseminate additional information concerning the plan to implement RNP 10 in the Airspace between Santiago de Chile and Lima in parallel RNAV routes UL780 and UL302, as well as the operational approval process for aircraft.

3. AREA OF APPLICATION

3.1 As determined by GREPECAS (Conclusion 10/17) and the Third Meeting/Workshop of Air Traffic Management Authorities, the RNP-10 shall be applicable in the airspace limited vertically between FL 290 and FL 410 and horizontally by a quadrangle as follows: *(See graphic in Attachment A)*

From:

a) 14°23' 24" S / 077° 49' 52" W b) 14° 09' 33" S / 076° 06' 04" W

c) 27° 22' 16" S / 072° 00' 34" W d) 27° 55' 39" S / 073° 46' 45" W

4. OPERATIONS WITHIN THE RNP-10 AIRSPACE

4.1 Only RNP 10 approved aircraft will be authorized to operate within the RNP-10 airspace, except aircraft mentioned in 4.2 below.

4.2 Non-RNP 10 approved State aircraft flights and humanitarian flights will be authorized to enter and operate within the RNP-10 airspace. Special ATS procedures have been developed for handling said aircraft. It is however expected that, state aircraft operating extensively within the RNP-10 airspace will be modified as necessary to comply with the RNP-10 requirements.

4.3 Special procedures for flight planning within the context of RNP-10 implementation have been developed. These procedures will be introduced into AFI Regional Supplementary Procedures (ICAO Doc 7030)

4.4 A letter "R" should be inserted in box 10 of the ICAO flight plan form indicating RNP 10 approval of a flight.

5. RNP APPROVAL

5.1 *(...Both States, Chile and Peru, will incorporate their procedures and applicable documents for RNP 10 users approval.)*

6. RNP IMPLEMENTATION SCHEDULE FOR RNP

6.1 During the Sixth Meeting/workshop of Air Traffic Management Authorities and Planners AP/ATM/6 (San José, Costa Rica, 29 September/03 October), the meeting decided to proceed with the RNP-10 pre-operational implementation in RNAV parallel routes. Such decision was based on, the following parameters:

- a) the outcome of the pre-implementation safety assessment,
- b) the operations performed in such airspace by RNP 10 approved aircraft, exceeds the percentage of 90% established for this purpose, and
- c) the State and ATS provider readiness to conduct RNP-10 operations.

INFORMATION REGARDING RNP-10 ATS PROCEDURES

7. ATS PROCEDURES

7.1 ATS procedures required for RNP 10 application will be:

- a) The aircraft that use these routes should be approved with RNAV RNP 10 equipment.
- b) A minimum longitudinal separation of 10 minutes (80 NM RNAV will be used between aircraft flying at the same flight level ensured with Mach Number Technique (MNT) on RNAV UL780 and UL302.
- c) The ACC will make the ATS appropriate coordination through the coordination means currently established and incorporating these routes in the Operational Letter of Agreement.

- d) Operators of aircraft using RNP 10 routes, should complete the letter R (RNP Equipment) in box 10 of their Flight Plan (FPL). Mach Number will be entered in box 15.
- e) Non RNP approved State aircraft flights, and humanitarian flights will be allowed to operate in RNP airspace with prior coordination. Prior coordination will consist of the filing of a flight plan with the appropriate ATS facility, with the words “STS/NONRNP”, in the item 18 of the International Civil Aviation Organization (ICAO) Flight Plan Form.

8. SPECIAL PROCEDURES FOR IN- FLIGHT CONTINGENCIES

8.1 Introduction

8.1.1 The following procedures are intended for guidance only and will be applicable within the airspace corresponding to parallel routes UL780 and UL302 in the segment of the routes between Santiago de Chile and Lima as a consequence of the implementation of RNP10 in the above-mentioned airspace. Although all possible contingencies cannot be covered, they provide for cases of:

- a) inability to maintain assigned flight level due to weather, aircraft performance, pressurization failure and problems associated with high level supersonic flight;
- b) loss of, or significant reduction in, the required navigation capability when operating in parts of the airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations; and
- c) en-route diversion across the prevailing traffic flow in the parallel routes UL780 and UL302.

8.1.2 With regard to a) and c) above, the procedures are applicable primarily when rapid descent, turn-back or both are required. The pilot’s judgement shall determine the sequence of actions taken, having regard to the specific circumstances. Air traffic control (ATC) shall render all possible assistance.

8.2 General procedures

8.2.1 The following general procedures apply to both subsonic and supersonic aircraft.

8.2.2 If an aircraft is unable to continue flight in accordance with its ATC clearance, and/or an aircraft is unable to maintain the navigation performance accuracy specified for the airspace, a revised clearance shall, whenever possible, be obtained prior to initiating any action, using the distress or urgency signal as appropriate. Subsequent ATC action with respect to that aircraft shall be based on the intentions of the pilot and the over-all traffic situation.

8.2.3 If prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time and, until revised clearance is received, the pilot shall:

- a) if possible, deviate away from an organized track or route system;
- b) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, aircraft position (including ATS route

designator or the track code) and intentions, on the frequency in use and on frequency 121.5 Mhz (or, as a back-up, on the inter-pilot air-to-air frequency 123.45 Mhz);

- c) watch for conflicting traffic both visually and by reference to ACAS (if equipped);
- d) turn on all aircraft exterior lights (conmensurate with appropriate operating limitations);
- e) switch on the SSR transponder at all times; and
- f) initiate such action as necessary to ensure safety of the aircraft.

8.3 Subsonic aircraft

8.3.1 Initial action

8.3.1.1 If unable to comply with the provisions of 8.2 to obtain a revised ATC clearance, the aircraft should leave its assigned route or track by turning 90 degrees to the right or left whenever this is possible. The direction of the turn should, where possible, be determined by the position of the aircraft relative to any organized route or track system (e.g. whether the aircraft is outside, at the edge of, or within the system). Other factors which may affect the direction of the turn are the direction to an alternative airport, terrain clearance and the flight levels allocated to adjacent routes.

8.3.2 Subsequent action

8.3.2.1 An aircraft able to maintain its assigned flight level should turn to acquire and maintain in either direction a track laterally separated by 46 km (25 NM) from its assigned route or track in a multi-track system spaced at 93 km (50 NM) or otherwise, at a distance which is mid-point from the adjacent parallel route or track; and:

- a) if above FL 290, climb or descend 300 m (1 000 ft); or
- b) if at FL 290, climb 300m (1 000 ft) or descend 150m (500 ft).

8.3.2.2 An aircraft unable to maintain its level flight should:

- a) initially minimize its rate of descent to the extent that it is operationally feasible;
- b) turn while descending to acquire and maintain in either direction a track laterally separated by 46 km (25 NM) from its assigned route or track in a multi-track system spaced at 93 km (50 NM) or otherwise, at a distance which is the mid-point from the adjacent parallel route or track; and
- c) for the subsequent level flight, a level should be selected which differs from those normally used by 300 m (1 000 ft) if above FL 290.

8.3.3 Extended range operations by aeroplanes with two-turbine power-units (ETOPS)

8.3.3.1 If these contingency procedures are employed by a twin-engine aircraft as a result of an engine shutdown or failure of an ETOPS critical system, the pilot should advise ATC as soon as practicable of the situation reminding ATC of the type of aircraft involved, and request expeditious handling.

8.4 Supersonic aircraft

8.4.1 Turn-back procedures

8.4.1.1 If a supersonic aircraft is unable to continue flight to its destination and a reversal of track is necessary, it should:

- a) when operating on an outer track of a multi-track system, turn away from the adjacent track;
- b) when operating on a random track or on an inner track of a multi-track system, turn either left or right as follows:
 - 1) if the turn is to be made to the right, the aircraft should attain a position 46 km (25NM) to the left of the assigned track and then turn to the right into its reciprocal heading, at the greatest practical rate of turn;
 - 2) if the turn is to be made to the left, the aircraft should attain a position 46 km (25NM) to the right of the assigned track and then turn to the left into its reciprocal heading, at the greatest practical rate of turn;
- c) while executing the turn-back, the aircraft should lose height so that it will be at least 1850 m (6 000 ft) below the level at which turn-back was started, by the time the turn-back is completed;
- d) when turn-back is completed, heading should be adjusted to maintain a lateral displacement of 46 km (25NM) from the original track in the reverse direction, if possible maintaining the flight level attained on completion of the turn.

Note.- For multi-track systems where the route spacing is greater than 93 km (50 NM), the mid-point distance should be used instead of 46 km (25 NM).

8.5 Weather Deviation Procedure

8.5.1 General

8.5.1.1 The following procedures are intended to provide guidance. All possible circumstances cannot be covered. The pilot's judgement shall ultimately determine the sequence of actions taken. ATC shall render all possible assistance.

8.5.1.2 If the aircraft is required to deviate from track to avoid weather and prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time. Until an ATC clearance is received, the aircraft shall follow the procedures detailed in paragraph 8.5.4 below.

8.5.1.3 The pilot shall advise ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to the centre line of its cleared route.

8.5.2 Obtaining priority from ATC when weather deviation is required

8.5.2.1 When the pilot initiates communications with ATC, rapid response may be obtained by stating WEATHER DEVIATION REQUIRED to indicate that priority is desired on the frequency and for ATC response.

8.5.2.2 The pilot still retains the option of initiating the communications using the urgency call PAN PAN (preferably spoken three times) to alert all listening parties to a special handling condition which will receive ATC priority for issuance of a clearance or assistance.

8.5.3 Actions to be taken when controller-pilot communications are established

8.5.3.1 The pilot notifies ATC and requests clearance to deviate from track advising, when possible, the extent of the deviation expected.

8.5.3.2 ATC takes one of the following actions:

- a) if there is no conflicting traffic in the horizontal plane, ATC will issue clearance to deviate from track; or
- b) if there is conflicting traffic in the horizontal plane, ATC separates aircraft by establishing appropriate separation; or
- c) if there is conflicting traffic in the horizontal plane and ATC is unable to establish appropriate separation, ATC shall:
 - 1) advise the pilot unable to issue clearance for requested deviation;
 - 2) advise the pilot of conflicting traffic; and
 - 3) request the pilot's intentions.

SAMPLE PHRASEOLOGY

"UNABLE (requested deviation), TRAFFIC IS (call sign, position, altitude, direction), ADVISE INTENTIONS."

8.5.3.3 The pilot will take the following actions:

- a) advise ATC of intentions;
 - 1) comply with the ATC clearance issued; or
 - 2) execute the procedures detailed in 8.5.4 below; and
- b) if necessary, establish voice communications with ATC to expedite dialogue on the situation.

8.5.4 Actions to be taken if a revised air traffic control clearance cannot be obtained

8.5.4.1 The provisions of this section apply to situation where a pilot has the need to exercise the authority of a pilot in command under the provisions of Annex 2, 2.3.1

8.5.4.2 If a revised ATC clearance cannot be obtained and deviation from track is required to avoid weather, the pilot shall take the following actions:

- a) if possible, deviate away from the organized track or route system;
- b) establish communications with and alert nearby aircraft broadcasting at suitable intervals: flight level, aircraft position (including ATS route designator or the track code) and

intentions on the frequency in use and on frequency 121.5 Mhz (or as a back up, on the inter-pilot air to air frequency 123.45)

- c) watch for conflicting traffic both visually and by reference to ACAS (if equipped);
- d) Turn on all aircraft exterior lights (commensurate with appropriate operating limitations);
- e) for deviations of less than 19 km (10 NM), aircraft should remain at a level assigned by ATC;
- f) for deviation of greater than 19 km (10 NM), when the aircraft is approximately 19 km (10 NM) from track, initiate a level change based on the following criteria:

Route center line track	Deviation greater than 19 Km (10 NM)	Level Change
000° - 179° magnetic	LEFT	DESCEND 150 m. (500 ft)
	RIGHT	CLIMB 150 m. (500 ft)
180° - 359° magnetic	LEFT	CLIMB 150 m. (500 ft)
	RIGHT	DESCEND 150 m. (500 ft)

Note: If, as a result of actions taken under the provisions of paragraphs 8.5.4.2 b) and c) above the pilot determines that there is another aircraft at or near the same flight level with which a conflict may occur, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict

- g) when returning to track, be at its assigned level, when the aircraft is within approximately 19 km (10 NM) of centre line; and
- h) if contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

9. REFERENCE DOCUMENTS

ICAO: Doc. 7030/4 - AFI/SAM, Part 1, Rules of the Air, Air Traffic Services and Search and Rescue.

ICAO. Doc. 7474 AFI Air Navigation Plan.

ICAO. Doc. 8733 SAM Air Navigation Plan.

ICAO: Doc. 9613 - "Manual on Required Navigation Performance (RNP)".

FAA: Order 8400.12A Required Navigation Performance 10 (RNP-10) Operational Approval.

10. ADDITIONAL INFORMATION

10.1 Further information on policy, planning and implementation issues for RNP-10 can be obtained from:

DIRECCION GENERAL DE AERONAUTICA CIVIL (CHILE)
Dirección de Seguridad Operacional, Subdirección de Aeronavegabilidad, Santiago de Chile.
TEL(562) 4107691
FAX(562)3355710
E-MAIL:Operaciones publico@dgac.cl
Aeronavegabilidad:aprado@dgac.cl

Dirección de Aeródromos y Servicios Aeronáuticos, Subdirección de Servicios de Navegación
Aerea, Santiago de Chile.
TEL(562) 2904610
FAX(562) 6441446
E-MAIL: sna@dgac.cl

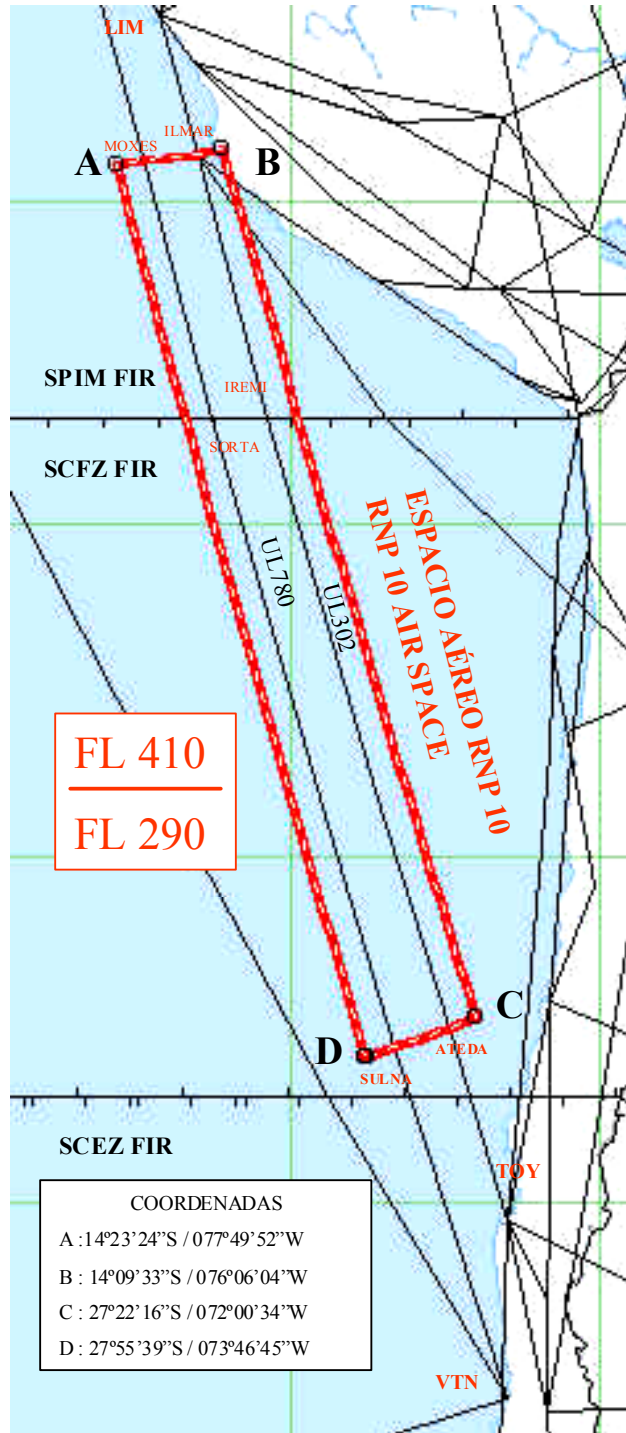
DIRECCION GENERAL DE AERONÁUTICA CIVIL (PERÚ)
Dirección de Navegación Aérea Av. 28 de julio 800 Lima, Perú
TELEFAX. (511) 4251780
E-MAIL : rrodriguez@mtc.gob.pe

Sub Dirección de Aeronavegabilidad
TELÉFONO (511) 433-4510.
TELEFAX (511) 332-2281.
E-MAIL: dgacingenieria@mtc.gob.pe

AGENCIA DE MONITOREO PARA LAS REGIONES CAR/SAM (CARSAMMA)
Av. dos Astronautas n. 1941São José dos Campos - SP, Brasil
CEP: 12.227-000
Tel: 55 (12) 39 04 50 04 Fax: 55 (12) 39 41 70 55
E-mail: carsamma@cgna.gov.br
Site: www.cgna.gov.br

ATTACHMENT A

LIMA - SANTIAGO RNP 10 AIR SPACE FOR UL780 AND UL302 PARALLEL ROUTES



APPENDIX A

RNAV/RNP TASK FORCE (RNAV/RNP/TF)

1. Terms of Reference

- a) Develop an RNAV Route Network;
- b) Develop Required Navigation Performance (RNP) guidance material and implementation programme for the CAR/SAM Regions. and
- c) Carry out specific studies in order to develop, from the operational point of view, guidance material so that the States/Territories/International Organizations of the CAR/SAM Regions may use in the implementation of RNAV procedures in terminal areas.

2. Work Programme

RNAV MATTERS

- a) Review in detail the impact that the proposed RNAV routes would have in:
 - i) The current conventional routes and RNAV (international and domestic);
 - ii) The aircraft fleet operating in conventional routes and non-RNAV equipped;
 - iii) The prohibited, restricted and dangerous areas;
 - iv) The TMAs, mainly in those in which the proposed RNAV routes start/end;
 - v) How does the proposed routes network affect the provision of Air Traffic Services.
- b) Identify those routes which might be eliminated from the CAR/SAM ANP, Basic Volume, due to:
 - i) Poor utilization and/or
 - ii) Substitution by the implementation of a new RNAV route.
- c) Develop the RNAV Routes Plan in order to prepare the corresponding proposals for amendment to the Basic CAR/SAM ANP.

RNP MATTERS

- a) Carry out an analysis on the aspects which could affect RNP implementation, such as:
 - i) The flexible use of airspace (forbidden, restricted and special use airspace) and civil/military coordination;
 - ii) Optimization of the current structure of the routes network;

- iii) The lowest level usable in RNP 10 airspace
 - iv) Surveillance and communication coverage in certain FIRs;
 - v) The current navigation capacity of the aircraft fleet;
 - vi) Mixed operations (RNP and non-RNP aircraft) in a same airspace;
 - vii) Status of implementation of the WGS 84 Geodetic System in the CAR/SAM Regions;
 - viii) Harmonization of the geographical coordinates in the boundaries of the FIRs;
 - ix) Integrity of the aeronautical data base for air navigation;
 - x) Link SIDs/STARs with en-route flight;
 - xi) Harmonized ATM procedures;
 - xii) Contingency Procedures.
 - xiii) Other points that the Task Force may deem appropriate.
- b) Study and propose an RNP implementation strategy in which the more appropriate delimitation for the RNP airspace is established, such as: implementation selecting fixed ATS routes, by area or airspace blocks; and
- c) Study the need to update the ATM evolution tables.

RNAV MATTERS IN TMAs

- a) To review the available documentation on RNAV implementation in Terminal areas in a worldwide level;
- b) Examine, from the operational point of view, the current airspace structure and determine its deficiencies and possible benefits that might generate a new structure, enabling the most efficient use of new technologies, automation, and capacities of the flight systems;
- c) Examine institutional aspects involved in a multinational environment
- d) Examine technical and operational aspects
- e) Evaluate different alternatives and strategies that might satisfy the new requirements of international civil aviation in the CAR/SAM Regions environment
- f) Prepare a draft airspace strategic plan for the CAR/SAM Regions to be examined by the ATM Committee

3. Composition of the Task Force

Brazil*, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, France, Haiti, Panama, Trinidad and Tobago, United States, Venezuela, COCESNA, IATA, IFATCA and SITA.

* Rapporteur; Julio Pereira