AP/ATM/3
WP/3
15/04/02

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

Third Meeting/Workshop of Air Traffic Management (ATM) Authorities and Planners
(Lima, Peru, 20.24 May 2002)

Agenda Item 2: Implementation of routes UL 670 (Bogotá/Kington/New York), UL 793 (Buenos Aires/New York), UL 674 (Caracas/Houston), UL 337 (Porto of Spain/Miami), UL 423 (Bogotá/San José/México) y UL 471 (San Salvador/Miami).

(Presented by the Secretariat)

Summary

This working paper presents six new routes selected from the 13 RNAV routes approved by GREPECAS/10 for inclusion in the CAR/SAM ANP – Basic Vol., as well as the implementation requirements, the impact of such implementation on the corresponding operational agreements and the implementation programme.

References:

- Report of the CAR/SAM RAN/3 meeting
- Report of the GREPECAS 10 meeting
- UNDP/ICAO Project RLA/98/003
- Reports of the AP/ATM/1 and AP/ATM/2 meetings.
- CAR/SAM ANP - Basic Vol.
- Doc. 9426, Air Traffic Services Planning Manual
- Doc. 9613, Required Navigation Performance Manual
- Doc. 7030, Regional Supplementary Procedures
- Letters of Operational Agreement

1 Introduction

1.1 The Third CAR/SAM RAN Meeting held in Buenos Aires, Argentina, in October 1999, considering the operational advantages and economic benefits involved, and based on the planning that was already being carried out, asked the CAR/SAM Regional Planning and Implementation Group (GREPECAS) to establish an RNAV route network and design the strategy for its implementation.

1.2 The RNAV/RNP Task Force created by the GREPECAS ATS Subgroup was asked to carry out the work required to develop an RNAV route network in the CAR/SAM Regions, based on the trajectories joining city pairs, as approved by the CAR/SAM RAN/3 meeting.

1.3 The GREPECAS 10 meeting held in Las Palmas, Canary Islands, Spain, in October 2001, examined the trajectories submitted to the ATM/CNS/SG/1 meeting and identified the following RNAV routes for inclusion in the CAR/SAM ANP – Basic Vol.:

1. UL 424 (Rio de Janeiro/Miami)
2. UL 793 (Buenos Aires/New York)
3. UL 777 (Buenos Aires/Lima/Acapulco/Los Angeles
4. UL 670 (Lima/Bogota/New York)
5. UL 785 (Buenos Aires/Panama/Cancun/Dallas
6. UL 674 (Caracas/Houston)
7. UL 337 (Port of Spain/Miami)
8. UL 208 (Mexico City/Miami)
9. UL 423 (Bogota/San Jose/Mexico City)
10. UL 219 (Lima/San Jose/Houston/Dallas)
11. UL 471 (San Salvador/Miami)
12. UL 583 (Kingston/New York)
13. UL 527 (Sao Paulo/Buenos Aires

2 Analysis

2.1 Considering that the planning and implementation of RNAV routes is a complex and painstaking process, previous arrangements were made with the States involved, in order to prevent subsequent amendments to the ANP once the implementation process had started.

2.2 Taking into account that one of the factors of greatest incidence when implementing RNAV routes is the definition of the starting/ending points that will determine the actual trajectory of the proposed RNAV route and its impact on the airspace (FIRs, conventional ATS routes and existing RNAV routes, prohibited and restricted airspaces, etc.), the States concerned were asked to indicate the starting/ending points that these trajectories would have, so that they could be included in the proposal of amendment that will be circulated to States and users.

2.3 This information was available in March this year and, in coordination with the States and IATA, and considering that route UL 304 already exists in the Rio de Janeiro/Miami trajectory (only the CBC VOR/DME – Great Inagua (ZIN) NDB segment is pending implementation), the route for this trajectory previously identified as UL 424 would no longer be considered in this amendment process.

2.4 In view of the amount of information to be processed and in order to expedite the amendment process, based on the priorities established by the ATS/SG/9 meeting and in coordination with IATA, RNAV routes UL 670 (Bogota/Kingston/New York), UL 793 (Buenos Aires/New York), UL 674 (Caracas/Houston), UL 337 (Port of Spain/Miami), UL 423 (Bogota/San Jose/Mexico) and UL 471

(San Salvador/Miami) were initially selected for analysis by the AP/ATM/3 meeting, inclusion in the CAR/SAM ANP – Basic Vol. and subsequent implementation.

2.5 According to the coordinations made and the prior analysis done of these routes, the following was concluded:

a) Some States have pointed out that the routes would enter/leave their respective FIRs through the already established routes and significant points and that the traffic would subsequently be routed through those routes, creating a domino effect due to the fact that the proposed route would coincide with existing conventional routes in the adjacent FIRs.

b) As a result of the above, the routes would no longer be orthodromic and, in most cases, would have several inflections similar to those of conventional routes supported by radio aids, e.g. routes UL 670 (SKBO/KJFK), UL 793 (SAEZ/KJFK) and UL 674 SVMI/KIAH, which have inflexions of up to 30º.

c) Furthermore, the trajectory initially approved as SPIM/SKBO/KJFK corresponding to route UL 670 had to be modified to trajectory SKBO/MKJP/KJFK, the latter being more suitable from an operational point of view, because RNAV route UL305 already exists in the SPIM/SKBO segment and the SPIM/KJFK trajectory coincides with route UT(UL) 780 up to URSUS.

d) Another consequence would be that some routes would end at FIR boundaries and/or in the boundaries of the CAR Region, which means that the route would start/finish more than 650 NM and, in some cases, more than 1,000 NM before the arrival/departure airport.

e) In most cases, the routes would run very close to already existing significant points at FIR boundaries. In some cases, the distances between such significant points and the new one for the route to be implemented are about 2-3 NM and, in other cases, between 7-10 NM. This would create a crowding of significant points at FIR boundaries, which is not advisable from the operational and ATC viewpoints. This occurs in almost overlapping routes and also in those that cross each other, the latter being the most frequent.

f) If a significant point is proposed for each route, independently from the proximity of other significant points, States might request that it coincides with an existing point, therefore a significant point would appear in the proposal of amendment which would not indicate the FIR boundary. Consequently, the entire process would have to start again, in order to circulate another amendment.

g) One solution would be to direct the proposed route towards the existing point. However, the disadvantage is that, in most cases, these points belong to conventional routes that could be cancelled in the future, and the orthodromic route would then

have been moved a few miles. The advantage of this solution is that no major coordination need to be made to define and approve the coordinates of such points.

h) In some cases, the route goes through the boundaries of three or even four FIRs in a flight distance of less than 100 NM (as occurs on route TTPP/KMIA, which passes 2.5 NM from SCAPA and involves Maiquetia, Curacao, San Juan and Santo Domingo. In 68 NM, there are approximately 23 NM between the Maiquetia/Curacao boundary and the Curacao/San Juan boundary and 45 NM to the San Juan/Santo Domingo boundary). This case is combined with item b) above. There are other similar cases of three FIRs involved, such as route SAEZ/KJFK, which enters the Maiquetia FIR from the Manaus FIR and then re-enters the Manaus and Maiquetia FIRs consecutively, within a distance of only 20 NM and then 80 NM, respectively.

The Secretariat will make a presentation during the AP/ATM/3 meeting to graphically explain the analysis made of the airspace affected by the proposed RNAV routes.

2.6 In view of the above, and so as to circulate the amendment with the routes already defined and avoid objections or observations subsequent to the amendment, a previous agreement between the Administrations involved is required regarding the significant points at FIR boundaries, in order to arrive at satisfactory, integral solutions to the problems encountered in the proposed RNAV routes.

2.7 To this end, the Administrations should make a comprehensive analysis of the airspace affected by the proposed RNAV routes, with emphasis on the impact this process will have on current ATS routes (both conventional and RNAV), to permit an integrated, harmonious and timely implementation of more direct RNAV routes.

2.8 Once agreements are reached between the Administrations involved in each of the proposed RNAV routes, the amendment would be circulated for its inclusion in the CAR/SAM ANP – Basic Vol. The same procedure followed for the first six routes would be followed for the other six and it is expected that the amendment will also be circulated as soon as the Administrations and users reach the corresponding agreements.

2.9 Based on the experience acquired in the implementation of RNAV routes in the CAR/SAM Regions over the past two years, the following appendices to this working paper contain the information required for the implementation of the six new RNAV routes proposed:

a) Appendix A: description of the six RNAV routes proposed, according to the coordinations made so far;

b) Appendix B: the AIC model showing, *inter alia*, the minimum requirements, procedures, training, etc. and the AIP Supplement model;

c) Appendix C: the condition of speech circuits between the ACCs involved in the proposed RNAV routes;

d) Appendix D: model of appendix to the letters of operational agreement between ACCs; and

e) Appendix E: timetable of the Implementation Programme for the proposed RNAV routes, describing the activities that should be carried out by States, users, IATA and ICAO, as well as the target dates for completion of these activities.

2.10 The aforementioned RNAV routes shall become effective two AIRAC periods after the ICAO Council has approved the amendment to Table ATS 1 – ATS Route Network of the CAR/SAM Air Navigation Plan – Basic Vol. Bearing in mind the normal processing of this amendment, it is expected that the Regional Offices will receive the aforementioned approval on December this year.

2.11 Considering that stated in the previous paragraph, the tentative date for the implementation of the proposed RNAV routes has been set for 20 February, 2003. Consequently, the Implementation Programme timetable contained in Appendix E to this working paper is also tentative.

3 Suggested action

3.1 The meeting is invited to:

a) review the proposed trajectories that appear in Appendix A to this working paper, examine the impact their implementation could have on the airspace structure and obtain the necessary agreements between the Administrations involved in the proposed RNAV routes, regarding the significant points in the corresponding FIR boundaries, and

b) approve the following draft conclusion:

Draft Conclusion AP/ATM/3 X/X **Agreement to implement RNAV routes UL 670 (Bogota/Kingston/New York); UL 793 (Buenos Aires/New York); UL 674 (Caracas/Houston); UL 337 (Port of Spain/Miami); UL 423 (Bogota/San Jose/Mexico) and UT 471 (San Salvador/Miami)**

The affected CAR/SAM /COCESNA States agree to:

a) implement RNAV routes UL 670 (Bogota/Kingston/New York); UL 793 (Buenos Aires/New York); UL 674 (Caracas/Houston); UL 337 (Port of Spain/Miami); UL 423 (Bogota/San Jose/Mexico); and UT 471 (San Salvador/Miami), detailed in Appendix ….. to this part of the Report;

b) approve the Implementation Programme for RNAV routes UL 670 (Bogota/Kingston/New York); UL 793 (Buenos Aires/New York); UL 674 (Caracas/Houston); UL 337 (Port of Spain/Miami); UL 423 (Bogota/Sa n Jose/Mexico); and UT 471 (San Salvador/Miami), which appears in Appendix E to this working paper.

c) carry out the implementation two AIRAC periods after the ICAO Council has approved the proposal of amendment to Table ATS 1 – ATS Route Network of the CAR/SAM Air Navigation Plan – Basic Vol.

Appendix A

Specific details of the UL 670 (Bogotá/Kingston/New York), UL 793 (Buenos Aires/New York), UL 674 (Caracas/Houston), UL 337 (Port of Spain/Miami), UL 423 (Bogotá/San José/México) and UL 471 (San Salvador/Miami) RNAV routes

RNAV Route UT 670 Bogotá/Kingston/New York			
FIRs or significant points	**LATITUDE**	**LONGITUDE**	**CODE**
MARIQUITA VOR/DME	N 05° 12’ 43’’	W 074° 55’ 27’’	MQU
BOGOTA/BARRANQUILLA	TBD	TBD	MADON
BARRANQUILLA/KINGSTON	TBD	TBD	IREBU
MANLEY VOR/DME (UT 410)	N17° 55’ 48.9’’	W076° 46’ 39.5’’	MLY
KINGSTON/LA HABANA	N 19° 16’ 20”	W 076° 57’ 38”	PULKA
MANZANILLO VOR/DME (UB 503)	N 20° 18’ 10’’	W 77° 05’ 58’’	UMZ
LA HABANA/MIAMI OCEANIC (B 503)	N23° 33’ 43.9’’	W77° 21’ 34.6’’	ENAMO
NASSAU VOR/DME (AR 3)	N25° 01’ 41.2’’	W77° 27’ 00’’	ZQA
FIRs involved: Bogotá, Barranquilla, Kingston, La Habana, Miami Oceanic			

RNAV Route UL 793 Buenos Aires/New York

FIRs or significants points	LATITUDE	LONGITUDE	CODE
EZEIZA VOR/DME (UA 301)	S34° 49’ 26.5’’	W058° 32’ 07.4’’	EZE
GUALEGUAYCHU VOR/DME	S33° 00’ 40’’	W058° 36’ 50’’	GUA
EZEIZA/RESISTENCIA	S30° 29’ 45’’	W058° 49’ 14’’	TODES
RESISTENCIA VOR/DME (UL 216)	S27° 26’ 48.9’’	W59° 03’ 25.6’’	SIS
RESISTENCIA/ASUNCION	TBD	TBD	MUNRO
ASUNCIÓN/LA PAZ	TBD	TBD	OROMU
LA PAZ/PORTO VELHO	TBD	TBD	UDIDI
PORTO VELHO/MANAUS	TBD	TBD	ODIXO
MANAUS/MAIQUETIA	TBD	TBD	UGAGA
MAIQUETIA/SAN JUAN	N15° 05’ 54’’	W065° 17’ 42’’	KIKER
DORADO NDB (A 300)	N18° 28’ 05.8’’	W066° 24’ 44.6’’	DDP
SAN JUAN/NEW YORK OCEANIC	N23° 30’ 00’’	W 067° 43’ 00’’	KRAFT

FIRs involved: Ezeiza, Resistencia, Asunción, La Paz, Porto Velho, Manaus, Maiquetía, San Juan, New York Oceanic

RNAV Route UL 674 Caracas/Houston			
FIRs or significant points	**LATITUDE**	**LONGITUDE**	**CODE**
MAIQUETIA VOR/DME	N10° 36’ 45’’	W 066° 59’ 16’’	MIQ
Reporting Point	TBD	TBD	ROJAS
MAIQUETÍA/CURACAO	TBD	TBD	BOMEG
CURACAO/KINGSTON	TBD	TBD	BIKOG
KINGSTON/LA HABANA	TBD	TBD	DAGOT
LA HABANA/MEXICO	TBD	TBD	ELASO
MEXICO/HOUSTON OCEANIC (A 766)	N24° 29’ 14’’	W 089° 50’ 28’’	KEHLI
FIRs involved: Maiquetía, Curacao, Kingston, La Habana, México, Houston Oceanic			

RNAV Route UL 337 Port-of-Spain/Miami			
FIRs or significant points	**LATITUDE**	**LONGITUDE**	**CODE**
PIARCO VOR/DME	N 10° 27’ 58.4’’	W 061° 23’ 30.7	POS
PIARCO/MAIQUETIA	TBD	TBD	ARUMU
MAIQUETIA/SAN JUAN	TBD	TBD	EGIRU
SAN JUAN/SANTO DOMINGO	TBD	TBD	ISEDU
SANTO DOMINGO/PORT-AU-PRINCE	TBD	TBD	OSIDU
PORT-AU-PRINCE /MIAMI OCEANIC (A 756)	N20° 24’ 23.2’’	W073° 00’ 29.5’’	BODLO
GREAT INAGUA NDB (A 315)	N20° 57’ 35’’	W 073° 40’ 39’’	ZIN
BIMINI VOR/DME	N25° 42’ 15’’	W079° 17’ 40’’	ZBV
FIRs involved: Piarco, Maiquetía, San Juan, Santo Domingo, Port-Au-Prince, Miami Oceanic			

RNAV Route UL 423 Bogotá/San José/México			
FIRs or significant points	**LATITUDE**	**LONGITUDE**	**CODE**
BOGOTA VOR/DME	N04° 50’ 54’’	W 074° 19’ 36’’	BOG
AMBALEMA NDB	N04° 47’ 24’’	W74° 46’ 28’’	ABL
BOGOTA/PANAMA	TBD	TBD	ARORI
PANAMA/AMERICA CENTRAL	TBD	TBD	ARUDA
AMERICA CENTRAL/MEXICO	TBD	TBD	ITEKA
MERIDA/MEXICO (CTAs)	TBD	TBD	UGERO
PUEBLA VOR/DME	N19° 09’ 35’’	W098° 22’ 14’’	PBC
MEXICO VOR/DME	N19° 26’ 19’’	W 099° 03’ 59’’	MEX
FIRs involved: Bogotá, Panamá, América Central, México			

RNAV Route UL 471 San Salvador/Miami			
FIRs or significant points	**LATITUDE**	**LONGITUDE**	**CODE**
EL SALVADOR VOR/DME	N13° 26’ 24’’	W 089° 02’ 54’’	CAT
AMERICA CENTRAL/LA HABANA	TBD	TBD	IRAXA
LA HABANA/MIAMI	TBD	TBD	ESAKA
DOLPHIN VOR/DME	N25° 47’ 59.9’’	W080° 20’ 56.5’’	DHP
FIRs involved: América Central, La Habana, Miami			

Appendix B

AIC Model for the Implementation of RNAV Routes in the CAR/SAM Regions

Telephone: **Fax:** **E-mail:** **Sitatex:** **Telex:**	**GENERAL BUREAU OF CIVIL AERONAUTICS** **AIC** **(STATE)**	**AIC** **DATE**

1 **INTRODUCTION**

1.1 GREPECAS, with the support of the UNDP/ICAO Regional Project RLA/98/003, through the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA), and CAR/SAM States/International Organizations, has developed an Implementation Programme for the following RNAV routes (list corresponding RNAV route or routes), with the aim to permit the users to allow users to use the avionics already installed in their aircraft, and thus obtain substantial flying time and fuel savings between the selected city pairs, through the use by ATS service providers affected by these routes in both regions of the 10-minute minimum longitudinal separation and/or 80 NM RNAV between aircraft flying at the same level, guaranteed by the use of the Mach number technique (MNT).

1.2 The RNAV Routes Implementation Programme includes the following appendices:

Appendix 1	Regional and National Chart and Details of the Routes
Appendix 2	Units and services that participates in trials and demonstrations
Appendix 3	ATC Training Plan

2 **Objectives**

2.1 The objective of this AIC is to resume the operational procedures that will support the CAR/SAM RNAV Routes Implementation Programme. For more information and details please consult the ICAO NACC and SAM Regional Offices, the IATA Latin American Office or the Civil Aviation Administrations of the States included in these tests.

2.2 A complete version of these CAR/SAM RNAV Routes Implementation Programme may be found at the following Internet address "http://www.lima.icao.int".

3 RNAV Routes

3.1 Appendix 1 includes the AIP Supplement xxx of date xxx where details of the RNAV Route are described.

3.2 Appendix 2 shows the ATC training plan.

4 ATS Procedures

a) The aircraft that use these routes should be equipped with RNAV equipment.
b) The minimum level of utilization of the RNAV XXXXXXXXXXXX route will be FL XXX and that of route XXXX is FL XXX
c) A minimum separation of 10 minutes/80 NM RNAV will be used between same level aircraft ensured with Mach Number Technique (MNT).
d) For these tests and demonstration flights agreed in paragraph 3 above, the ACCs will carry out ATS coordinations through the coordination means currently established.
e) The aircraft Flight Plan forms used by these pre-operational tests and demonstration RNAV CAR/SAM Routes should complete box No. 10, with letter S (RNAV Equipment); and if necessary, specify what kind of RNAV Equipment is used on board. In Box 15, the Mach number will be included and in Box 18 should be completed indicating the aircraft participated in "RNAV Trial".

5 Airline procedures, General Aviation and State Aviation

5.1 The airlines shall communicate the minimum Procedures/requirements to the dispatchers and crews to fly these RNAV tests and demonstrations in the CAR/SAM Regions.

5.2 The users of general civil aviation and State aircraft (military aviation) shall establish procedures/requirements, to air crews and will make sure that aircraft are RNAV equipped.

6 Contingency procedures

6.1 In case of contingency, these RNAV routes would adjust to contingency plans, as established by this administration (indicate the name of the administration).

* * * * * * *

Appendix B

AIP Supplement Model for the Implementation of RNAV Routes in the CAR/SAM Regions

Telephone: **Fax:** **E-mail:** **Sitatex:** **Telex:**	**GENERAL BUREAU OF CIVIL AERONAUTICS** **AIC** **(STATE)**	**Supplement** **DATE**

As of XXXXXX until XXXXX RNAV Route UL XXX (route designator) will be implemented, with the following characteristics:

(Description of the route and graphic)

Annex 1 to Appendix B

COMMON REQUIREMENTS GUIDE FOR PROMULGATION OF RNAV ROUTES IN THE CAR/SAM REGIONS

The purpose of this guide is to establish a common methodology for States affected in the implementation of temporary RNAV routes.

1. Consider the dates scheduled in the AIRAC calendar to promulgate the AIP Supplement.

2. An AIP Supplement identified by the acronym “AIRAC”, should be published and promulgated, indicating the validity period on a temporary basis of RNAV route along with technical-operational characteristics of the same.

3. An Appendix to the Supplement should be prepared, containing a graphic with the route trajectory within the respective airspace.

4. A final note to the Supplement should be included, clearly indicating that in order to obtain complementary information on the established route referring to the AIC Serial Number which will be promulgated together with the Supplement and which will contain al the information of an administrative nature regarding the implementation of the referred RNAV route.

5. For the enlargement of the validity period and/or modifications of the technical/operational aspects of the route, a NOTAM should be promulgated containing the reference of the Supplement Serial previously issued.

6. If necessary modify aspects related to the information promulgated in the AIC published, a new AIC replacing the previous one should be published.

APPENDIX C

Status of ATS speech circuits between ACCs involved in the RNAV routes UL 670 Bogotá/Kingston/New York, UL 793 Buenos Aires/New York, UL 674 Caracas/Houston, UL 337 Porto-of-Spain/Miami, UL 423 Bogotá/San José/México y UL 471 San Salvador/Miami, according the information available in the Regional Offices of ICAO.

UL 670 Bogotá/Kingston/New York

ATS Speech Circuit	Condition	Remarks
BOGOTA/BARRANQUILLA	Satisfactory	
BARRANQUILLA/KINGSTON	Satisfactory	
KINGSTON/LA HABANA	Satisfactory	
LA HABANA/MIAMI	Satisfactory	

UL 793 Buenos Aires/New York

ATS Speech Circuit	Condition	Remarks
RESISTENCIA/ASUNCIÓN	Satisfactory	
ASUNCIÓN/LA PAZ	Non satisfactory	
LA PAZ/PORTO VELHO	Satisfactory	
PORTO VELHO/MANAUS	Satisfactory	
MANAUS/MAIQUETIA	Non satisfactory	
MAIQUETIA/SAN JUAN	Satisfactory	
SAN JUAN/NEW YORK	Satisfactory	

UL 674 Caracas/Houston

ATS Speech Circuit	Condition	Remarks
MAIQUETÍA/CURACAO	Non satisfactory	
CURACAO/KINGSTON	Satisfactory	
KINGSTON/LA HABANA	Satisfactory	
LA HABANA/MERIDA	Satisfactory	
MERIDA/HOUSTON	Satisfactory	

UL 337 Porto-of-Spain/Miami

ATS Speech Circuit	Condition	Remarks
PIARCO/MAIQUETIA	Satisfactory	
MAIQUETIA/SAN JUAN	Satisfactory	
SAN JUAN/SANTO DOMINGO	Satisfactory	
SANTO DOMINGO/PORT-AU-PRINCE	Satisfactory	
PORT-AU-PRINCE /MIAMI	Satisfactory	

UL 423 Bogotá/San José/México

ATS Speech Circuit	Condition	Remarks
BOGOTA/PANAMA	Satisfactory	
PANAMA/CENAMER	Satisfactory	
CENAMER/MERIDA	Satisfactory	
MERIDA/MEXICO	Satisfactory	

UL 471 San Salvador/Miami

ATS Speech Circuit	Condition	Remarks
CENAMER /LA HABANA	Satisfactory	
LA HABANA/MIAMI	Satisfactory	

APPENDIX D

Complement model to operational letters of agreement between ACCs affected by tests and demonstration routes**.**

APPENDIX XX

REFERENCE TABLE FOR THE TRANSFERENCE OF RESPONSIBILITIES WITH RESPECT TO ATS RNAV ROUTE _____

ATS ROUTE	**FL TABLE AND SSR DATA TO BE ASSIGNED BY:**				**RESPONSIBILITY TRANSFERENCE POINTS AGREED TO ROUTE**	**MINIMA ESTABLISHED FOR LONGITUDINAL SEPARATION**	
	ACC XXX		**ACC XXX**			**TIME/ DISTANCE**	**REMARKS**
1	**2**		**3**		**4**	**5**	**6**
	FL	**SSR**	**FL**	**SSR**			

Note 1: Numbers “1" and “2" under columns indicate the series of IFR cruising levels shown in Appendix C to ICAO Annex 2 for tracks of 000° to 179° and 180° to 359°, respectively, or based in previous agreements of the corresponding ACCs.

APPENDIX E

TIMETABLE FOR THE IMPLEMENTATION PROGRAMME OF RNAV ROUTES IN THE CAR/SAM REGIONS

UL 670 (Bogota/Kingston/New York), UL 793 (Buenos Aires/New York), UL 674 (Caracas/Houston), UL 337 (Port of Spain/Miami), UL 423 (Bogotá/San Jose/Mexico) and UL 471 (San Salvador/Miami)

EXPLANATION OF THE TABLE

Column 1	Describes the activities to be carried out by the States/Organizations involved
Column 2	Shows the target dates for completion of the activities described in column 1
Column 3	Contains additional information

Activities under the responsibility of the States, which FIR/s are involved		
ACTIVITY	**COMPLETION DATE**	**REMARKS**
1	**2**	**3**
Agreement on the RNAV routes to be implemented	**20/05/02**	Route paths, reporting points, agreements, etc., to be defined at the Third Meeting/Workshop of ATM Authorities and Planners (20-24/5/02)
Review of bilateral/ multilateral agreements between service suppliers and/or identification of cases requiring their execution	**20/05/02**	According to the route paths, reporting points (including the geographical coordinates), agreements, etc., established during the Third Meeting/Workshop of ATM Authorities and Planners.
Verification and approval of geographical coordinates	**21/06/02**	The geographical coordinates should be established in the course of the meeting. Otherwise, the necessary coordinations will be made for that purpose through the respective ICAO NACC and SAM Regional Offices.
Distribution of the proposal for amendment to the ANP CAR/SAM – Basic Vol. by the ICAO NACC and SAM Regional Offices.	**01/07/02**	The distribution of the proposal for amendment will enable parties involved expressing their comments or observations.
Remittance of comments or remarks on the proposal for amendment to the ANP CAR/SAM – Basic Vol. to the corresponding ICAO NACC and SAM Regional Offices.	**31/07/02**	The timely response to the proposal for amendment will enable a quick processing of the comments or remarks for submission to the ICAO Council and further approval.
Inclusion of agreements and procedures in national operating manuals	**28/11/02**	If necessary, States shall include the agreements and procedures in their operating manuals

Decision to continue with the Implementation Programme	**02/12/02**	During the AP/ATM/4 Meeting/Workshop an evaluation will be carried out with each State involved and decision will be taken so as to continue or postpone the implementation date.
Publication of AIC and AIP Supplement	**26/12/02**	States affected by RNAV routes should publish a common AIC and AIP Supplement
Entry into effect of the Implementation	**20/02/03**	**RNAV routes agreed by the Third Meeting/Workshop of ATM Authorities and Planners (AP/ATM/3)**

Activities under IATA/users responsibility		
ACTIVITY	**COMPLETION DATE**	**REMARKS**
1	**2**	**3**
Agreement on RNAV routes to be implemented	**20/05/02**	Route paths, reporting points, agreements, etc, to be defined at the Third Meeting/Workshop of ATM Authorities and Planners (20-24/05/02)
Coordination with Jeppesen to obtain precise route coordinates	**21/06/02**	Jeppesen should be contacted in order to obtain the precise geographical coordinates, which should be forwarded to the ICAO NACC and SAM Regional Offices for distribution to the States involved
Distribution of the proposal for amendment to the ANP CAR/SAM – Basic Vol. by the ICAO NACC and SAM Regional Offices.	**01/07/02**	The distribution of the proposal for amendment will enable parties involved expressing their comments or observations.
Remittance of comments or remarks on the proposal for amendment to the ANP CAR/SAM – Basic Vol. to the corresponding ICAO NACC and SAM Regional Offices.	**31/07/02**	The timely response to the proposal for amendment will enable a quick processing of the comments or remarks for submission to the ICAO Council and further approval.
Decision to continue with the Implementation Programme	**02/12/02**	During the AP/ATM/4 Meeting/Workshop an evaluation will be carried out with each State involved and decision will be taken so as to continue or postpone the implementation date.
Printing of charts incorporating the new RNAV routes to be implemented	**26/12/02**	Agreements should be reached with Jeppesen for the printing of the appropriate charts
Entry into effect of the Implementation	**20/02/03**	**RNAV routes agreed by the Third Meeting of ATM Authorities and Planners (AP/ATM/3)**

Activities under ICAO responsibility		
ACTIVITY	**COMPLETION DATE**	**REMARKS**
1	**2**	**3**
Agreement on the RNAV routes to be implemented	**20/05/02**	Route paths, reporting points, agreements, etc., to be defined at the Third Meeting/Workshop of ATM Authorities and Planners (20-24/05/01)
Coordination /assistance in reviewing the bilateral/ multilateral agreements between service suppliers and/or identification of cases requiring their execution	**20/05/02**	According to the route paths, reporting points (including the geographical coordinates), agreements, etc., established during the Third Meeting/Workshop of ATM Authorities and Planners.
Remittance of geographical coordinates to the States involved	**21/06/02**	The ICAO NACC and SAM Regional Offices will coordinate the route information provided by IATA for its publication in the AIC and AIP Supplement
Distribution of the proposal for amendment to the ANP CAR/SAM – Basic Vol.	**01/07/02**	The distribution of the proposal for amendment will enable parties involved expressing their comments or observations.
Reception of comments or remarks regarding the proposal for amendment to the ANP CAR/SAM – Basic Vol.	**31/07/02**	The timely reception of the comments to the proposal for amendment will enable its quick processing for submission to the ICAO Council and further approval.
Remittance of the proposal for amendment to the ANP CAR/SAM – Basic Vol. to the ICAO Council	**05/08/02**	The timely remittance of the proposal for amendment to the ICAO Council will enable its early approval.
Decision to continue with the Implementation Programme	**02/12/02**	During the AP/ATM/4 Meeting/Workshop an evaluation will be carried out with each State involved and decision will be taken so as to continue or postpone the implementation date.

Activities under ICAO responsibility		
ACTIVITY	**COMPLETION DATE**	**REMARKS**
1	**2**	**3**
Verification with the States of the schedules for publication of the AIC and AIP Supplement	**02/12/02**	RNAV routes agreed by the Third Meeting/Workshop of ATM Authorities and Planners
Entry into effect of the Implementation	**20/02/03**	**RNAV routes agreed by the Third Meeting of ATM Authorities and Planners**