



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

**Sixth Meeting/workshop of Air Traffic Management (ATM) Authorities and
Planners for RVSM, RNAV routes and RNP implementation in the CAR and SAM Regions**

(San José, Costa Rica, 29 September-3 October 2003)

Agenda Item 1: Review of the RNAV routes Implementation Programme

National Programme of Brazil for the implementation of RNAV Routes

(Presented by Brazil)

Summary

This working paper presents the progress reached by Brazil through their RNAV routes National Implementation Programme, as well as the ATS routes re-structuring of the ATS routes connecting the main capitals and cities of Brazil and others used by flights crossing the Brazilian airspace to airports of Europe, United States and other CAR/SAM Region States. Also it presents a proposal of the calendar for its implementation. The actions suggested to the meeting are shown in paragraph 4.

References:

- Regional Project UNDP/ICAO RLA/98/003, “Transition to the CNS/ATM Systems in the CAR and SAM Regions”;
- Report of the Meetings/Workshops AP/ATM/3; AP/ATM/4 and AP/ATM/5;
- GREPECAS/10 and GREPECAS/11 Meeting Reports;
- ICAO Doc. 9574, Manual of implementation of a reduced minimum 300 m (1,000 ft) vertical separation between FL 290 and FL 410 inclusive;
- ICAO Doc. 9613, Manual on the Required Navigation Performance (RNP);
- ICAO Doc. 9689, Manual on the Airspace Planning Methodology to determine ICAO Separation Minima.

1. Introduction

1.1 The Regional Project UNDP/ICAO RLA/98/003, “Transition to the CNS/ATM Systems in the CAR and SAM Regions”, is supporting the implementation of RNAV routes in the CAR/SAM Regions in those trajectories joining pairs of cities which air traffic flow is significant so that the implementation is

justified. Among those routes, those crossing the Brazilian airspace have been included, joining Brazilian national airports with international airports of the CAR/SAM, NAM and EUR Regions.

1.2 The Third Meeting/Workshop (AP/ATM/3), meeting established continuation of the implementation of RNAV routes proposed at GREPECAS/10. The works carried out for the approval of routes proposed initially as trials and pre-operational implementation were successful and these routes have been already implemented since March 2003.

1.3 In the Brazilian airspace most of the crossings of ATS routes used by international aviation and operating in the Region are produced, and consequently they receive a greater impact in terms of air traffic control and coordination. Thus, it has been necessary to initiate the RNAV routes implementation programme, contemplating routes of trajectories that are shorter and with the integration of the national RNAV and ATS routes network of Brazil with neighbor States.

2. Analysis

2.1 From the point of view of control and air traffic management, the new air circulation of Brazil involving the Brasilia, Curitiba, Recife, Manaus, Belém, Porto Velho and Atlántico FIRs, as well as SID and STAR of the main terminal control areas, ensures the transition among en-route flights and TMA, appropriately joining airports to national and international airways through specific sectors of arrival and departure of the TMA.

2.2 This circulation model is mainly based in the utilization of national routes network and has as support the upper and lower ATS routes. The amount of the current international RNAV routes is still very little.

2.3 The surveys for the Brazilian RNAV routes implementation programme (GREPECAS/11 Conclusion 11/21) is looking for a harmonization between the national routes network and the RNAV international routes, in addition to contemplating the re-alignment of current airways and the transformation of some of these airways into RNAV to enable the common and optimized use by national and international air traffic permitting the users to have the possibility to plan their flights, reduce the flight time and even during the departure and arrival of Brazilian aerodromes. The scenario for the RVSM implementation is also being prepared for January 2005.

2.4 In this connection, and in accordance to GREPECAS/11 (conclusion 11/21), the Aeronautical Administration of Brazil has initiated studies to implement a group of RNAV routes among the main capitals of the States of the SAM Region, as well as for flights that will use the Brazilian airspace to reach airports of Europe and United States, based on the needs defined in Regional Project UNDP/ICAO RLA/98/003 (Transition to the CNS/ATM Systems in the CAR and SAM Regions), and in further analyses of air traffic evolution. The results of these studies were presented during the Fifth Meeting/Workshop of ATM Authorities and Planners in Panama City, resulting in conclusions favorable to the implementation, re-alignment and deletion of RNAV routes that would be proposed through amendments to the Air Navigation Regional Plan.

2.5 In addition to the changes in Brazilian air circulation, with the inclusion, re-alignment and deletion of RNAV routes and national and international ATS routes, the Brazilian airspace management authorities have decided to take advantage and include the new Amazónica FIR instead of Porto Velho, Manaus and Belem FIRs, and also to adjust boundaries among the rest of the FIRs (Curitiba, Brasilia and Recife) to enable optimum utilization of the communications and radar resources and include them in a unique amendment process that will permit the facilitation of updating by users.

2.6 In view of the foregoing, and in order to acknowledge details of the Brazil RNAV implementation programme, as well as the re-structuring of ATS routes and new boundaries of the FIRs involved, is described in **Appendix A** to this working paper, and an implementation schedule is proposed in **Appendix B**.

3. Conclusion

3.1 Taking into consideration the great extent, location of the Brazilian airspace and the scenario of the CAR/SAM Regions, and the great amount of necessary tasks to conclude the works, the participation of all the States involved is necessary in order to understand the need to adjust the implementation schedule proposed by Brazil.

4. Suggested action

4.1 The meeting is invited to approve the following Conclusion:

CONCLUSIONAP/ATM/6/XX - Review of the RNAV routes implementation Programme

- a) Encourage States and organizations involved to acknowledge the details of the Brazil RNAV routes implementation programme, of the re-structuring of the routes network and of the incorporation of the new Amazónica FIR detailed in **Appendix XX** to this part of the report, and evaluate their benefits for the CAR/SAM region.
- b) Understand the need to adjust the implementation schedule proposed by Brazil and share the implementation date presented in **Appendix XX** to this part of the report.

APENDICE A / APPENDIX A

<p>PROGRAMA RNAV BRASILEÑO – REESTRUCTURA DE LA RED DE RUTAS DEL SISCEAB BRAZILIAN PROGRAMME – RESTRUCTURING OF THE SISCEAB ROUTES NEETWORK</p>
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RUTAS RNAV / RNAV ROUTES

**-RUTAS INTERNACIONALES RNAV A IMPLANTAR/ INTERNATIONAL RNAV ROUTES
TO BE IMPLEMENTED;**

**- RUTAS INTERNACIONALES RNAV A DESPLAZAR O EXTENDER/ RNAV
INTERNATIONAL ROUTES TO BE MOVED OR EXTENDED;**

**-RUTAS INTERNACIONALES RNAV A CANCELAR / INTERNATIONAL RNAV ROUTES TO
DELETE**

RUTAS ATS / ATS ROUTES:

**-RUTAS INTERNACIONALES ATS -ESPACIO AÉREO SUPERIOR- A IMPLANTAR/ ATS
INTERNATIONAL ROUTES – UPPER AIRSPACE – TO BE IMPLEMENTED;**

**-RUTAS INTERNACIONALES ATS -ESPACIO AÉREO SUPERIOR- A DESPLAZAR/
EXTENDER / ATS INTERNATIONAL ROUTES – UPPER AIRSPACE TO BE MOVED OR
EXTENDED ;**

**-RUTAS INTERNACIONALES ATS -ESPACIO AÉREO SUPERIOR- A CANCELAR / ATS
INTERNATIONAL ROUTES – UPPER AIRSPACE – TO BE DELETED**

PROGRAMA RNAV BRASILEÑO – REESTRUCTURA DE LA RED DE RUTAS DEL SISCEAB / BRAZILIAN PROGRAMME – RE-STRUCTURING OF THE SISCEAB ROUTES NETWORK		
RUTAS INTERNACIONALES RNAV A IMPLANTAR INTERNATIONAL RNAV ROUTES TO BE IMPLEMENTED		
RNAV	TRAMO/SEGMENT	OBSERVACIONES/REMARKS
UM799	ASIMO/VOR CAT/REMEK/VOR SLI (DS)	Santiago/Madrid. Doble sentido/Double way
UM654	KUKEN/NDB BRU/VOR FLZ (SU)	Buenos Aires/ Europa. Sentido Único. Para ser incluida en el Programa Regional de Navegación Aérea, pero su implantación solamente deberá ocurrir después de los ajustes con los usuarios de los espacios aéreos condicionados de Santa Maria./ Buenos Aires/ Europe. One-way only. To be included in the Air Navigation Regional Prog. But its implementation will only occur after adjustments with conditioned airspace users, of Santa Maria/Buenos Aires.
UM548	VOR VAS/GAXAS/VOR CTB (SU)	Asunción/São Paulo Sentido único/one-way
UM402	VOR VAS/SIDAK/ VOR MAN (DS)	Asunción/Manaus Doble sentido/two-ways
UM544	VOR VAS/AKSUL/VOR CGR (DS)	Asunción/ C. Grande Doble sentido/ two-ways
UM400	VOR POS/LODUR/NDB PNG (SU)	Santiago/São Paulo Sentido único/One-way
UM671	VOR MLO/VOR CXS/ORANG/NDB SAT (SU)	B. Aires/São Paulo Sentido único/one way
UM788	VOR CGO/NDB PNG/VOR BGE (SU)	São Paulo/ B. Aires Sentido único/one way
UM540	VOR CRR/VOR POR/ JUICE NDB SAT (SU)	Montevideo/S. Paulo Sentido único/one way
UM792	VOR CGO/NDB PNG/VOR MLO/VOR CRR (SU)	S. Paulo/ Montevideo Sentido único/one way
UM415	VOR SCB(SU)/VOR PRR(SU)/SIDAK(DS)/VOR VIR	S. Paulo/S C de la Sierra Sentido único/one way hasta/until SIDAK

Leyenda: SU = Sentido Único; DS = Doble Sentido Legend: SU = One Way; DS = Two-way

RUTAS INTERNACIONALES RNAV A DESPLAZAR / EXTENDER / RNAV INTERNATIONAL ROUTES TO BE MOVED OR EXTENDED		
RNAV	TRAMO ACTUAL/ CURRENT SEGMENT	NUEVO TRAMO/ NEW SEGMENT
UL301	VOR CPN/OSITA/VOR VAS. (DS TODO EL TRAMO / ALL THE SEGMENT).	VOR CGO/BOLIR/VOR VAS. (SU TODO EL TRAMO / ALL THE SEGMENT)..
UL310	VOR SCB/IRIGO/VOR POS. (DS TODO EL TRAMO/ ALL THE SEGMENT).	VOR CGO/GEBUM/VOR POS. (SU TODO EL TRAMO/ ALL THE SEGMENT)..
UN741	NANIK/VOR FLZ/. (DS TODO EL TRAMO/ ALL THE SEGMENT).	NANIK (DS)/VOR FLZ(SU) /VOR TRM(SU) /VOR PSN(SU)/GRADE(SU) /VOR BGE(SU) /VOR DUR(SU) /VOR EZE.
UN857	ERETU/VOR NOR/VOR REC/VOR NUQ/VOR PCX. (DS TODO EL TRAMO/ ALL THE SEGMENT).	VOR EZE (SU)/VOR PTA (DS)/VOR POR (DS)/VOR MRC (SU)/VOR NOR (SD)/ERETU.
UN873	TASIL/VOR NTL/VOR/CNF. (DS TODO EL TRAMO/ ALL THE SEGMENT).	TASIL (DS)/VOR NTL (SU)/NDB BBC.
UN866	DEKON/VOR MSS/VOR/CNF. (DS TODO EL TRAMO/ ALL THE SEGMENT).	VOR BCO (SU)/VOR MSS (DS)/DEKON.
UL201	NDB MTU/VOR CPN (DS TODO EL TRAMO/ ALL THE SEGMENT).	NDB MTU (SU)/VOR PSN.
UL795	NDB AAQ/VOR BAG/VOR ATF/VUMPI. (DS TODO EL TRAMO/ ALL THE SEGMENT).	VUMPI (DS)/VOR ATF (DS)/VOR BAG (SU)/VOR PSN.

Legenda: SU = Sentido Único; DS = Doble Sentido

Legend: SU = One Way; DS = Two-way

RUTAS INTERNACIONALES RNAV A CANCELAR / RNAV INTERNATIONAL ROUTES TO BE DELETED		
RNAV	TRAMO / SEGMENT	OBSERVACIONES / REMARKS
UL320	VOR MSS (DS)/VOR PCX	CANCELAR TODA LA RUTA VOR MSS/VOR PCX / DELETE ALL THE ROUTE MSS VOR / PCX VOR
UL304	VOR PCX(SU)/VOR BRS(DS)/VOR BVI(DS)/ISANI	CANCELAR EL TRAMO VOR PCX/VOR BRS

Legenda: SU = Sentido Único; DS = Doble Sentido

Legend: SU = One Way; DS = Two-way

RUTAS INTERNACIONALES ATS -ESPACIO AÉREO SUPERIOR- A IMPLANTAR / ATS INTERNATIONAL ROUTES – UPPER AIRSPACE – TO BE IMPLEMENTED		
RUTA ATS/ ATS ROUTE	TRAMO / SEGMENT	OBSERVACIONES / REMARKS
NINGUNA / NONE	NINGUNO / NONE	NINGUNA / NONE

Legenda: SU = Sentido Único; DS = Doble Sentido

Legend: SU = One Way; DS = Two-way

RUTAS INTERNACIONALES ATS -ESPACIO AÉREO SUPERIOR- A DESPLAZAR/ EXTENDER / ATS INTERNATIONAL ROUTES – UPPER AIRSPACE – TO BE MOVED OR EXTENDED		
RUTA ATS/ ATS ROUTE	TRAMO ACTUAL / CURRENT SEGMENT	NUEVO TRAMO / NEW SEGMENT
UA312	VOR PCX(SU)/VOR BRS(DS)/VOR STM (SD)/ACARI...	VOR PCX(SU)/VOR FRM(DS)/VOR STM (DS)/ACARI
UB680	...ATITA(DS)/NDB MOZ(DS)/VOR CRJ (SD)/VOR PMS(SD)/VOR CFN(SU) /RIOH(SU)/VOR PAI	ATITA(DS)/ NDB MOZ(DS)/VOR CRJ(DS)/VOR PMS(SD)/VOR CFN(SU)/VOR BHZ(SU)/NOVO JOBIM(SU)/VOR PAI

Leyenda: SU = Sentido Único; DS = Doble Sentido extender
 Legend: SU = One Way; DS = Two-way extend

RUTAS INTERNACIONALES ATS -ESPACIO AÉREO SUPERIOR- A CANCELAR / ATS INTERNATIONAL ROUTES – UPPER AIRSPACE – TO BE DELETED		
RUTA ATS / ATS ROUTE	TRAMO / SEGMENT	OBSERVACIONES / REMARKS
UA311	VOR MRC(SU)/VOR RDE(SU)/VOR SCB (SU)/VOR FOZ(SU)/VOR VAS	CANCELAR TODA LA RUTA/ DELETE ALL THE ROUTE (VOR MRC/VOR VAS).
UA318	VOR SCB(SU)/VOR CTB(SU)/VOR BGE SU)/VOR DUR(SU)/VOR EZE.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR SCB/VOR EZE).
UA302	VOR PTA(SU)/VOR MLO(DS)/VOR POR (DS)/NDB FNP(DS)/VOR MRC(DS)/ VOR ADA(SU)/VOR MAC(DS)/NDB CPO(DS)/VOR VTR.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR PTA /VOR VTR).
UA425	VOR MRC(DS)/NDB FNP(DSD)/VOR POR (DS)/VOR MLO(SU)/VOR CRR.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR MRC /VOR CRR).
UA304	VOR VIR(DS)/NDB CUB(DS)/VOR CGR (DS)/NDB BRU(SU)/GRADE(DS)/VOR CPN(DS)/VOR BCO	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR VIR /VOR BCO).
UA300	VOR EZE(DS)/...ARPAT(DS)/NDB CUB (DS)/VOR MAN.	CANCELAR TODA LA RUTA (VOR EZE/...ARPAT/ NDB CUB/VOR MAN).
UA314	VOR REC(DS)/VOR ACJ(DS)/VOR SVD (DS)/VOR NUQ(SD)/VOR PCX(DS)/VOR MRC(DS)/NDB FNP(DS)/VOR POR(SU)/ VOR BGE(SU)/VOR DUR(DS)/VOR EZE.	CANCELAR EL TRAMO VOR/ DELETE ALL THE ROUTE REC/VOR ACJ/VOR SVD VOR NUQ/VOR PCX
UB678	VOR SVD(DS)/VOR CNF(DS)/VOR CPN.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR SVD/VOR CNF/VOR CPN).
UB602	VOR SVD(DS)/VOR MSS.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR SVD/VOR MSS).

RUTAS INTERNACIONALES ATS -ESPACIO AÉREO SUPERIOR- A CANCELAR / ATS INTERNATIONAL ROUTES – UPPER AIRSPACE – TO BE DELETED		
RUTA ATS / ATS ROUTE	TRAMO / SEGMENT	OBSERVACIONES / REMARKS
UB695	VOR REC(DS)/VOR LAP(DS)/VOR BRS (SD)/VOR URP(SD)/VOR VAS.	CANCELAR EL TRAMO / DELETE THE SEGMENT VOR REC/VOR LAP/VOR BRS/VOR URP.
UG741	VOR FLZ(DS)/VOR PTL(DS)/NDB MCL (DS)/VOR CPN.	CANCELAR TODA LA RUTA/ DELETE ALL THE ROUTE (VOR FLZ/VOR PTL/NDB MCL/VOR CPN).
UB694	VOR MRC(SU)/VOR RDE(SU)/VOR SCB (DS)/NDB BRU.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR MRC/VOR RDE/VOR SCB/NDB BRU).
UB688	VOR FLZ(DS)/VOR BRR(DS)/VOR BRS (DS)/VOR URP(DS)/VOR FOZ	CANCELAR EL TRAMO / DELETE THE SEGMENT VOR FLZ/VOR BRR/VOR BRS /VOR URP.
UA308	VOR PTA(SU)/VOR MLO(DS)/VOR POR (SU)/VOR RDE(SU)/VOR BCO.	CANCELAR EL TRAMO / DELETE THE SEGMENT VOR POR/VOR RDE/VOR BCO.
UB691	VOR PCX(SU)/VOR CNF.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR PCX/VOR CNF).
UA315	VOR PCX(SU)/VOR BRS(DS)/VOR ATF (DS)/VOR JAC(DS)/VOR MAN (DS) /VAGAN...	CANCELAR EL TRAMO / DELETE THE SEGMENT VOR PCX/VOR BRS/VOR ATF.
UA309	VOR SCB(SU)/VOR POR(DS)/VOR PTS (SU)/VOR CRR.	CANCELAR EL TRAMO / DELETE THE SEGMENT VOR SCB/VOR POR.
UA565	... VOR LET(DS)/VOR TEF(DS)/VOR ATF (DS)/VOR BRS(SU)/VOR PAI.	CANCELAR EL TRAMO / DELETE THE SEGMENT VOR LET/VOR TEF/VOR ATF /VOR BRS/VOR PAI.

Leyenda: SU = Sentido Único; DS = Doble Sentido Legend: SU = One Way; DS = Two-way

Además de las tablas presentadas arriba, siguen a continuación las tablas que se refieren a los cambios en la red de rutas nacionales, con destaque para la implantación de 15 RNAV nacionales que serán utilizadas como complemento o extensión de las rutas RNAV internacionales, con el objetivo de permitir los vuelos por tramos más directos y las entradas y salidas por sectores distintos de las TMA involucradas. / In addition to the foregoing, the tables, the following tables refer to changes to national routes network, highlighting the implementation of 15 RNAV national routes to be used as complement or extension of international RNAV routes, in order to enable flights to more direct segments and entries and exits by different segments of the TMA involved.

RUTAS NACIONALES RNAV A IMPLANTAR / RNAV NATIONAL ROUTES TO IMPLEMENT		
RNAV	TRAMO / SEGMENT	OBSERVACIONES / REMARKS
UZ14	VOR SVD(SU)/NDB BBC	Salvador/ TMA RJ Sentido único / One-way
UZ15	NDB PSG(SU)/NDB BBC	P. Seguro/ TMA RJ Sentido único / One-way
UZ16	NDB PSG(SD)/VOR BHZ	P. Seguro/ TMA BH Doble sentido /Two-way
UZ17	VOR SVD(SD)/VOR FRM	Salvador/ Brasíla Doble sentido /Two-way
UZ18	VOR FTZ(SD)/VOR FRM	Fortaleza/ Brasíla Doble sentido /Two-way
UZ19	VOR SVD(SD)/VOR FLZ	Salvador/Fortaleza Doble sentido /Two-way
UZ20	VOR SVD(SD)/VOR TRZ	Salvador/Teresina Doble sentido /Two-way
UZ21	NDB BRU(SU)/VUMPI	São Paulo/Miame Sentido único / One-way hasta/until VUMPI
UZ22	SIDAK(SU)/VOR CGD(SU)/NDB AAQ(SU)/VOR PSN	S C de la Sierra/São Paulo Sentido único / One-way: SIDAK/VOR PSN
UZ23	VOR FRM(SU)/VOR BVI	Rio/Miame Sentido único / One-way: VOR FRM/VOR BVI
UZ24	VOR STM(SU)/VOR BRS	Miame/Brasíla Sentido único / One-way: VOR BVI/VOR BRS
UZ25	VOR YTZ(SD)/VOR BRS	Belem/Imperatriz /Brasíla: Doble sentido /Two-way: YTZ/BRS
UZ26	VOR BRS(SD)/VOR PMS(SD)/VOR BEL	Brasíla/Belem: Doble sentido /Two-way
UZ27	VOR MSS(SD)/VOR PTL(SD)/VOR FRM	Europa/Brasíla (via Mossoró): Doble sentido /Two-way
UZ28	VOR PCX(SU)VOR FRM(SU)/VOR STM(SD)/ACARI	Rio/EEUU (Miame) via STM/ACARI Sentido único / One-way hasta/until VOR STM

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RUTAS NACIONALES RNAV A DESPLAZAR / EXTENDER / RNAV NATIONAL ROUTES TO MOVE / EXTEND		
RNAV	TRAMO ATUAL / CURRENT SEGMENT	NUEVO TRAMO / NEW SEGMENT
UZ10	VOR NTL(SD)/VOR SVD.	VOR NTL (SD)/VOR SVD (SU)/VOR PCX.
UZ5	VOR BRS (SD)/VOR TRS.	VOR CXS(SU)/NDB BRU (SD)/VOR LUZ (SD)/VOR BRS (SD)/VOR TRS

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RUTAS NACIONALES ATS -ESPACIO AÉREO SUPERIOR- A DESPLAZAR / EXTENDER / ATS NATIONAL ROUTES – UPPER AIRSPACE – TO BE MOVED/EXTENDED		
RUTA ATS / ATS ROUTE	TRAMO ACTUAL / CURRENT SEGMENT	TRAMO NUEVO / NEW SEGMENT
UW12	VOR CNF(SD)/VOR BRS.	VOR PCX(SU)/VOR CNF(SU)/VOR TRM(SD)/PT2(SD)/VOR BRS.
UW44	VOR FLZ(SD)/VOR TRS.	VOR FLZ(SD)/VOR TRS(SD)/VOR BRR.
UW43	VOR BRS(SD)/VOR BRR(SD)/VOR TRS (SD)/VOR SLI.	VOR BRS(SD)/VOR BRR(SD)/VOR FLZ.
UW50	VOR SCB(SU)/VOR CGR.	VOR MSS(SD)/VOR SVD(SD)/VOR CVL(SD)/VOR VTR (SD)/NDB CPO(SD)/VOR MAC(SD)/VOR ADA(SD)/VOR MRC(SU)/VOR RDE(SU)/VOR SCB(SU)/VOR PRR(SU)/VOR CGR(SD)/NDB CUB.
UW58	VOR CNF(SU)/VOR PSN(SU)/GRADE(SU)/VOR STN.	VOR REC(SD)/VOR ACJ(SD)/VOR SVD(SD)/VOR BHZ(SU)/VOR CPN(SU)/VOR SCB.
UW13	VOR BGC(SU)/VOR CNF(SD)/VOR PTL.	VOR BCO(SU)/VOR BHZ(SD)/VOR PTL(SD)/VOR FLZ.
UW5	VOR BEL(SD)/VOR YTZ (SD)/VOR BRR (SD)/VOR CNF(SU)/JOBIM(SU)/VOR PAI.	VOR BEL(SD)/VOR YTZ(SD)/VOR BRR (SD)/VOR MCL(SD)/VOR CNF(SU)/RIOH(SU)/VOR CAX.
UW14	VOR PTL(SD)/VOR LAP.	VOR MSS(SD)/VOR PTL(SD)/VOR LAP.
UW62	VOR BCO(SU)/VOR SJC(SU)/NDB NOA.	NDB CUB(SD)/VOR CGR(SU)/NDB BRU(SU)/GRADE(SU) VOR BCO(SU)/VOR SJC(SD)/NDB NOA. VOR BCO(SU)/VOR SJC(SD)/NDB NOA.
UW45	NDB BRU(SD)/VOR CIA	VOR SCB(SU)/NDB BRU(SD)/VOR CIA
UW10	VOR REC(SD)/VOR LAP(SD)/BAIAN (SU)/VOR BRS....	VOR REC(SD)/VOR LAP(SD)/BAIAN (SU)/VOR FRM(SU)/VOR BRS...
UW24	VOR CGO(SU)/VOR CTB	VOR CGO(SU)/VOR CTB(SU)/PT4(SU)/VOR POR.

RUTAS NACIONALES ATS -ESPACIO AÉREO SUPERIOR- A DESPLAZAR / EXTENDER / ATS NATIONAL ROUTES – UPPER AIRSPACE – TO BE MOVED/EXTENDED		
RUTA ATS / ATS ROUTE	TRAMO ACTUAL / CURRENT SEGMENT	TRAMO NUEVO / NEW SEGMENT
UW19	NDB FNP(SD)/VOR CTB(SD)/VOR LON(SD)/VOR CGR.	VOR CGR(SD)/VOR LON(SD)/VOR CTB(SD)/NDB FNP(SU)/PT4(SU)/VOR POR.
UW21	NDB FNP(SU)/PETRI(SD)/NDB SAT.	NDB FNP(SU)/PT5(SU)/NDB SAT.
UW25	NDB FNP(SU)/ORANG(SU)/ELANU(SU)/VOR RDE.	NDB FNP(SU)/ORANG(SU)/VOR RDE.
UW6	VOR BRS(SD)/NDB BRU(SD)/VOR CTB.	VOR POR(SU)/VOR CXS(SU)/ VOR CTB(SD)/NDB BRU(SD)/VOR LUZ(SD)/VOR BRS(SD)/VOR PMS(SD)/VOR BEL.

Leyenda: SU = Sentido Único; DS = Doble Sentido Legend: SU = One Way; DS = Two-way

RUTAS NACIONALES ATS -ESPACIO AÉREO SUPERIOR- A CANCELAR / ATS NATIONAL ROTUES – UPPER AIRSPACE – TO BE DELETED		
RUTA ATS / ATS ROUTE	TRAMO / SEGMENT	OBSERVACIONES / REMKARS
UW60	VOR NUQ(SU)/NDB BBC(SU)JOBIM(SU)/VOR PAI.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR NUQ/VOR PAI).
UW18	VOR VTR(SD)/VOR CVL(SD)/VOR SVD.	CANCELAR TODA A ROTA (VOR VTR/VOR SVD).
UW57	NDB MCL(SU)/VOR PSN.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (NDB MCL/VOR PSN).
UW56	VOR BGC(SU)/NDB MCL.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR BGC/NDB MCL).
UW4	VOR BEL(SD)/VOR PMS(SD)/VOR BRS(SU)/ACNEL(SU)/RIOH(SU)/VOR CAX.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR BEL/VOR PMS/VOR BRS/ACNEL/RIOH/VOR CAX).
UW20	VOR CTB(SD)/VOR POR.	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR CTB/VOR POR).
UW46	VOR CXS(SU)/ORANG(SU)/PETRI(SU)/NDB SAT	CANCELAR TODA LA RUTA / DELETE ALL THE ROUTE (VOR CXS/ORANG/PETRI / NDB SAT).

Leyenda: SU = Sentido Único; DS = Doble Sentido Legend: SU = One Way; DS = Two-way

APPENDIX B / APPENDIX B

PROPUESTA DE BRASIL PARA LA IMPLANTACIÓN DE LAS RUTAS RNAV APROBADAS EN LA AP/ATM/5 / PROPOSAL OF BRAZIL FOR THE IMPLEMENTATION OF RNAV ROUTES APPROVED AT THE AP/ATM/5 MEETING

Programa de trabajo para la implantación, extensión y eliminación de rutas RNAV aprobadas durante la Reunión AP/ATM/5 (Panamá, 18 al 20 de junio de 2003)

Work programme for the implementation, extension and deletion of RNAV routes approved during the AP/ATM/5 Meeting (Panama, 18-20 June 2003)

Actividad / Activity	Inicio / Start	Fin / End	Observaciones / Remarks
Recopilación de Información / Collection of information	23/6/03	31/7/03	Período finalizado / Period finalized
Establecimiento de Coordenadas geográficas / Establishment of geographical coordinates	31/7/03	5/9/03	En curso / Current
Preparación de la propuesta de enmienda al ANP CAR/SAM / Preparation of proposal for amendment to CAR/SAM ANP	31/7/03 *	12/9/03 *	En curso. Se espera recibir información sobre coordenadas geográficas en los puntos significativos para detallar las rutas en cuestión. / Current, it is expected to receive information on geographical coordinates in the significant points, to detail routes concerned.
Distribución de la propuesta de enmienda al ANP CAR/SAM / Distribution of the proposal to the CAR/SAM ANP	12/9/03 *	10/10/03 *	Un mes para recibir comentarios sobre la propuesta de enmienda / One month to receive comments on the proposal for amendment
Envío de la propuesta de enmienda para su aprobación por parte del Consejo de la OACI / Submission of proposal for amendment for its approval by ICAO Council	13/10/03 *	7/11/03 *	Plazo aproximado para su aprobación por parte del Consejo de la OACI / Approximate deadline for approval by ICAO Council

Actividad / Activity	Inicio / Start	Fin / End	Observaciones / Remarks
Tareas internas de cada Estado para la preparación a la Implantación, extensión y/o eliminación de Rutas ATS Internal tasks of each State for the preparation to the implementation, extension and/or deletion of ATS routes	N/A	N/A	Las tareas internas de cada estado pueden ser desarrolladas en paralelo al proceso de aprobación por El Consejo de la OACI, aplicándose los ajustes necesarios después de la aprobación por El Consejo / The internal tasks in each States may be developed parallel to the approval process by ICAO Council, applying the necessary adjustments
Publicación y Recibo de las enmiendas por el usuario aeronáutico Publication and receipt of amendments by aeronautical user	N/A	18/03/2004	La fecha para iniciar la distribución de las enmiendas será definida por cada Estado considerando la fecha de 18/03/2004 como fecha de publicación/recibo por el usuario. / The date to initiate the distribution of amendments will be defined by each State considering the date 18/03/2004 as publication/receipt date by the user
Entrada en vigor de las rutas y sus complementos STAR/ SID/ Rutas ATS/RNAV nacionales necesarias para implantación conjunta / Entry into effect of routes and their complements STAR/SID/ ATS/RNAV national routes necessary for a joint implementation		10/06/2004	La fecha de entrada en vigor de las enmiendas será tres períodos AIRAC luego de la fecha de publicación recibimiento de enmienda por del usuario aeronáutico / The effective date of amendments will be three AIRAC periods after the publication, receipt date by the aeronautical user

En rojo están los cambios presentados por Brasil./ The changes presented by Brazil are in red

* Las fechas referentes a la preparación, distribución de la propuesta de enmienda al ANP y su envío para aprobación por parte del Consejo de la OACI, quedan inalteradas o no, a criterio de la Secretaría. / The dates regarding preparation, distribution of the proposal of amendment to the ANP and its submission for approval by ICAO Council remain the same, or no, upon decision of the Secretariat

Argumentos:

Como hemos mencionado en la nota de estudio 20 de Brasil en la AP ATM 5, para que las rutas RNAV presentadas sean incorporadas a nuestra red de rutas es necesarios un estudio completo que está en curso y tendrá como resultado una armonización de la red de rutas con la activación, alineamiento y supresión de rutas ATS y RNAV nacionales y internacionales.

Además de esto, estamos compatibilizando las STAR y SID de las TMA Porto Alegre, Curitiba, Florianópolis, São Paulo, Rio de Janeiro, Belo Horizonte, Salvador, Recife, Natal, Fortaleza, y Manaus con las nuevas rutas RNAV aprobadas. Además de los cambios en la circulación aérea brasileña con la inclusión, realineación y cancelación de rutas RNAV y rutas ATS internacionales y nacionales, las autoridades de la gestión del espacio aéreo brasileño han decidido incluir la nueva FIR Amazónica en sustitución a las FIR Porto Velho, Manaus y Belem y ajustar los límites entre las demás FIR (Curitiba, Brasilia y Recife) de modo a permitir la utilización más optimizada de los recursos de comunicación y visualización radar, e incluir en un solo proceso de enmienda que permita facilitar la actualización para los usuarios.

Por lo que se expone, vemos como impracticable las fechas propuestas por la Secretaría para publicación y recibimiento por el usuario (7/11/03), y para entrada en vigor de las enmiendas correspondientes (19/2/04) en razón de los trabajos relacionados.

Así, consideramos que la primera fecha posible para su entrada en vigor es el 10 de junio de 2004.

A este respecto, en contacto con el personal de la agencia de monitoreo, obtuvimos la concordancia sobre esta fecha por cuanto la encuesta prevista para 2004 ocurrirá después de la entrada en vigor de las rutas RNAV.

En consecuencia, presentamos en nuestra propuesta para el Programa de trabajo para la implantación, extensión y eliminación de rutas RNAV aprobadas durante la Reunión APATM/5 (Panamá, 18 al 20 de junio de 2003), la fecha de 10/06/2004 para entrada en vigor del conjunto de RNAV.

Arguments:

As mentioned in WP/20 presented by Brazil at the AP/ATM/5, so that RNAV routes presented be incorporated to our routes network, a complete survey is necessary and is being undertaken, and will have as a result a harmonization of the routes network, with the activation, alignment and deletion of ATS and RNAV national and international routes

In addition, we are harmonizing the STAR and SID of the Porto Alegre, Curitiba, Florianópolis, São Paulo, Rio de Janeiro, Belo Horizonte, Salvador, Recife, Natal, Fortaleza, and Manaus TMAs with new approved RNAV routes. In addition to the changes in Brazilian air circulation, with the inclusion, re-alignment and deletion of RNAV and ATS national and international routes, the Brazilian airspace management authorities have decided to include the new Amazónica FIR in replacement of the Porto Velho, Manaus and Belem FIR and adjust the boundaries among the rest of the FIRs (Curitiba, Brasilia and Recife) in order to permit a more optimized use of the communication and radar visualization resources, and include in one amendment process that will enable the facilitation of the updating for the users.

In view of the above, we consider that the dates proposed by the Secretariat are not practicable for publication and receipt by the user (7/11/03) and for effectiveness of the corresponding amendments (19/2/04) in view of the work related.

Thus, we consider that the first possible date for its effectiveness is 10 June 2004.

In this regard and after contact with personnel of the monitoring agency, we agreed on the date, in view that the survey foreseen for 2004 will occur after the effective date of RNAV routes.

Consequently, we present our proposal for the work programme for the implementation, extension and deletion of RNAV routes approved during the AP/ATM/5 Meeting (Panamá, 18 to 20 June 2003), the date 10/06/2004 as effective date of the RNAV group.