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**Agenda Item 3:           Activities for the development of the air navigation systems/services**  
**3.2       Air Traffic Management (ATM)**

**ATS ROUTES IN THE C/CAR**

(Presented by the Secretariat)

**SUMMARY**

This Working Paper provides information on ATS Routes approved by GREPECAS for the CAR Region States/Territories/International Organizations to plan their implementation.

**References:**

- Report of the First North American, Central American and Caribbean Directors of Civil Aviation Meeting (Grand Cayman, Cayman Islands, 8-11 October 2002)
- Report of the Eleventh Meeting of GREPECAS (Manaos, Brazil, 3-7 December 2002)
- Report of the Twelfth Meeting of GREPECAS (Havana, Cuba, 7-11 June 2004)
- Report of the Fourth Central Caribbean Working Group Meeting (Santo Domingo, Dominican Republic, 9-13 February 2004)
- Report of the Seventh Meeting of Directors of Civil Aviation of the Central Caribbean (San Juan, Puerto Rico, 28 June-01 July 2004).

**1.           Introduction**

1.1           GREPECAS/11 and GREPECAS/12 meetings agreed upon a regional strategy for the implementation of RNAV Routes and RNP in the CAR/SAM Regions.

1.2           The First North American, Central American and Caribbean Directors of Civil Aviation Meeting agreed to develop a strategic ATS Routes implementation through Conclusion 1/10 – *National RNAV/RNP Implementation Programmes for the CAR Region*.

1.3 The Seventh Meeting of Directors of Civil Aviation of the Central Caribbean decided to continue supporting the work of the CCAR/WG on studies and implementation of RNAV Routes and RNP in the Central Caribbean.

1.4 Likewise, during the Fourth Central Caribbean Working Group Meeting, an ATS Routes programme was developed, compatible with regional NAM, CAR and SAM agreements, which was circulated in the Proposal for Amendment Series No. SAM 04/4-ATM.

## **2. Discussion**

### ***RNAV Routes and Required Navigation Performance (RNP)***

2.1 With the implementation of RNAV Routes in the Central Caribbean airspace, substantial benefits have been attained concerning the flexible use of airspace and direct improvements to safety, which in turn provide more possibilities of obtaining optimum flight levels, as well as big savings of flight time and fuel for users.

2.2 Some of the ATS routes belonging to Phases I and II-a affecting the CAR Region, agreed upon by the CCAR/WG and supported by GREPECAS/12 for the CAR/SAM Regions, have already been implemented and other routes require more coordination for their implementation. The RNAV routes corresponding to Phase II-b and other which are pending definite coordination by the CCAR/WG is found in the **Appendix** to this Working Paper.

2.3 On the other hand, notwithstanding the successful implementation of ATS routes during the coordination and implementation in the CAR/SAM Regions, other factors have been found affecting the execution of national implementation programmes, and therefore more emphasis is needed for integral implementation studies of standardized SID/STAR procedures and RNAV/RNP procedures.

2.4 Bearing in mind that the routes and RNAV/RNP procedures also provide important operational advantages to users and ATS services providers in those TMAs and airports serving as start/end, it is necessary that the CCAR/WG study the implementation of RNAV/RNP procedures and standardized SID and STAR procedures in the Central Caribbean among the airports and the already implemented RNAV Routes or in process of implementation, which will allow to make better use of airspace and terminal control areas (TMAs) in order to assimilate the increase of air traffic, task that has been supported by GREPECAS.

## **3. Suggested Action**

3.1 The Meeting is invited to note the contents of this paper and to approve the following :

**DRAFT**  
**CONCLUSION 5/xx****IMPLEMENTATION PROGRAMMES OF SID AND STAR  
STANDARDIZED PROCEDURES IN THE CENTRAL  
CARIBBEAN**

That the Central Caribbean Working Group develop an action plan for the development and publication of SID and STAR standardized procedures which are necessary to connect their origin and destination international airports with the RNAV Routes, that may be operationally required by the Central Caribbean airspace, in harmony with other implementations of the CAR Region.

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## APPENDIX

**PROGRAMA DE IMPLANTACIÓN DE RUTAS RNAV EN LAS REGIONES CAR/SAM**  
**– FASE II – B**  
**RNAV ROUTES IMPLEMENTATION PROGRAMME IN THE CAR/SAM REGIONS**  
**– PHASE II – B**

<b>SÓLO PUNTOS DE INICIO/FIN</b> <b>START/END POINTS ONLY</b>	
<b>Administraciones</b> <b>Administrations</b>	<b>Ruta</b> <b>Route</b>
Netherlands Antilles - Ecuador	Bonaire/Quito (*) Bonaire/Guayaquil (*)
Netherlands Antilles - Perú	Bonaire/Lima
México - Panamá	Cancún/Panamá
Venezuela – Cuba	Caracas/La Habana
Venezuela – Brasil	Elorza/Sao Gabriel
Cuba – Panamá	La Habana/Panamá
Panamá – Haití	Panamá/Port-au-Prince
(*) Estas rutas podrían unirse en una sola ruta: Bonaire/Quito/Guayaquil	
(*) These routes might join in only one route: Bonaire/Quito/Guayaquil	

<b>PUNTOS DE INICIO/FIN Y EN LOS LÍMITES FIR</b> <b>START/END AND FIR LIMITS POINTS</b>	
<b>Administraciones</b> <b>Administrations</b>	<b>Ruta</b> <b>Route</b>
Argentina – Paraguay	Buenos Aires/Asunción
Argentina – Chile	Buenos Aires/Balmaceda Buenos Aires/Santiago de Chile (sentido único) Santiago de Chile/Buenos Aires (sentido único) Buenos Aires/Puerto Montt
Netherlands Antilles - United States	Aruba/San Juan de Puerto Rico
México – COCESNA	México/San Pedro Sula
Haití - Santo Domingo	Cap. Haitien/Puerto Plata (*)
Haití – Cuba	Cap. Haitien/Santiago de Cuba (*)
Bolivia - Perú	La Paz-Lima (**) (segmento de la ruta <b>UM 415 Sao Paulo/Lima Fase I y Fase II-a</b> )
Ecuador - Perú	Guayaquil/Lima (**) (segmento de la ruta <b>UL780 Santiago/Lima/Guayaquil/Miami Fase I</b> )
Colombia	Cúcuta/Villavicencio (**) ( <b>Ruta nacional</b> )
(*) Estas rutas podrían unirse en una sola ruta: Puerto Plata/Cap. Haitien/Santiago de Cuba.	
(*) These routes might join in only one route: Puerto Plata/Cap. Haitien/Santiago de Cuba.	
(**) Estas rutas podrían suprimirse de la Fase II-b	
(**) These routes might be suppressed from Phase II-b	

**RUTAS ATS EN EL CARIBE CENTRAL**  
**ATS ROUTES IN THE CENTRAL CARIBBEAN**

**HOLGUIN / ETBOD****L 212/ UL 212    Pendiente /Pending****CUBA**

**Propuesta para implantarla desde Holguín directo a ETBOD para alejarla de la zona MUP-1002. /Proposal to implement from Holguin direct to ETBOD so as to avoid MUP-1002.**

<b><u>Nombre</u></b> <b><u>/Name</u></b>	<b>Long</b>	<b>Lat</b>	<b>Rumbo -</b> <b>GEO -</b> <b>Heading</b>	<b>Dist.</b>	<b>Observaciones</b> <b>/Remarks</b>
<b>HOLGUIN</b>	N	W			KIN FIR
<b>URLAM</b>	N	W			KIN (xA301)
<b>LODMA</b>	N	W			HAV/KIN FIR
<b>ETBOD</b>	N	W			HAV FIR

**MLY VOR to UCU VOR****RNAV Route UL347****CUBA - JAMAICA**

**Proponen i mplementarla en el espacio aéreo inferior. /Propose to implement in the lower airspace**

<b><u>Nombre</u></b> <b><u>/Name</u></b>	<b>Long</b>	<b>Lat</b>	<b>Rumbo -</b> <b>GEO -</b> <b>Heading</b>	<b>Dist.</b>	<b>Observaciones</b> <b>/Remarks</b>
<b>MLY VOR</b>	N14:55:48.9	W076:46:39.5			KIN FIR
<b>VIKRO</b>	N19:00:56	W076:16:28.4	024	71.0	HAV/KIN
<b>UCU VOR</b>	N19:58:40.1	W075:49:21.6	024/204	62.96	HAV FIR