



International Civil Aviation Organization
CAR/SAM Regional Planning Implementation Group (GREPECAS)
**Second Meeting of the Communications, Navigation and Surveillance / Air
Traffic Management Subgroup (CNS/ATM/SG/2)**
(Mexico City, Mexico, 16 to 19 November 2010)

Agenda Item 2: Follow-up to the implementation status of the performance based navigation systems plans for the CAR and SAM Regions and to the latest amendments to the ATM- and CNS-related SARPS

PROPOSED CHANGES FOR THE CAR REGION ATS ROUTE STRUCTURE

(Presented by the Secretariat)

SUMMARY	
This Working Paper presents to the Meeting a proposal for amendment on changes in the ATS route structure within the CAR Region. Action from the Meeting is presented in paragraph 3.	
<i>ICAO Strategic Objectives:</i>	A: Safety - Enhance global civil aviation safety D: Efficiency - Enhance the efficiency of aviation operations E: Continuity - Maintain the continuity of aviation operations
<i>References:</i>	<ul style="list-style-type: none">• Doc 9750- <i>Global Air Navigation Plan</i>;• Doc 9854 - ATM Operational Concept;<ul style="list-style-type: none">• Doc 9613 - PBN Manual;• Report of the GREPECAS/15 meeting, Rio de Janeiro, Brazil, 13 – 17 October 2008.• Report of the Eighth Central Caribbean Working Group Meeting (C/CAR WG/8, Miami, FL 11-14 May 2010)• Report of the PBN Working Group for the Implementation of RNP10 in the Gulf of Mexico (PBN GoMex 21-23 September 2010)• Report of the Sixth Meeting of the Central American Working Group (CA/ANE/WG/6 Mexico City, 27-30 September 2010)

1. Introduction

1.1 GREPECAS/15, upon examining the work programme and terms of reference of GREPECAS and its contributory bodies and, particularly, those related with PBN implementation, approved that the ATM/CNS/SG work programme align itself with the following performance objectives:

- a) optimization of the ATS routes structure in the en-route airspace;
- b) optimization of the ATS routes structure in the terminal airspace; and
- c) implementation of RNP approaches.

1.2 Significant benefits were achieved from the implementation of the RNP 10 with the WATRS Plus project which increased availability of RNAV routes and associated flight levels so that more aircraft operate on more direct and efficient routes, reducing route lengths, fuel burn and CO₂ gas emissions.

2. Analysis

2.1 In the framework of implementation of the PBN airspace concept for the CAR Region, coordination has been carried out during 2010 with all the States which provided the NACC Office with proposals to bring improvements in the CAR ATS route network infrastructure. In accordance with Conclusions 8/2 and 8/3 of the CCAR/WG/8, approved by the Directors of Civil Aviation of the Central Caribbean, included as **Appendix A** to this working paper, during the meeting of the PBN Working Group for the implementation of RNP10 in the Gulf of Mexico, several States reached agreement on the implementation of new routes, realignment or renaming and removal of existing routes, included in the **Appendix B** to this working paper.

2.2 As required by GREPECAS and based on the CNS infrastructure in the CAR Region, the States/Territories/International Organizations agreed to use the RNAV5 specification for the RNAV routes in the upper airspace in the Region. Coordination was also carried out with all the States/Territories/International Organizations on proposed routes with a tentative implementation date of February 10, 2011 for the first package.

2.3 To support the implementation of the changes in the route structure, a CAR survey form has also been circulated to all the States, which is aimed at extending a thorough analysis at a regional level on the actual use of the airspace by the users in view of its optimization.

2.4 The PBN Working Group for the implementation of RNP 10 in the Gulf of Mexico is expected to convene its third meeting in January 2011 to extend the discussions and analysis of the Gulf of Mexico project which implementation is foreseen in October 2011. For the above reason, it is recommended that the CAR/SAM States support and take the proper measures for the implementation.

2.5 The CAR States/Territories/International Organizations will continue their analysis to implement other new routes, and eliminate non-necessary existing routes with the aim to expand the improvements in the RNAV route network within the CAR Region in accordance with the implementation of a regionally harmonized PBN airspace concept.

3. Action by the Meeting

3.1 The Meeting is invited to:

- a) take note of the content of the Appendixes to this working paper;
- b) support the draft proposal for amendment to the CAR SAM ATS Route network; and
- c) recommend additional actions, as deemed appropriate.

APPENDIX A
CONCLUSIONS 8/2 AND 8/3 OF THE C/CAR/WG/8

CONCLUSION 8/2 **EXTENSION OF RNAV ROUTES OF THE GULF OF MEXICO
TOWARDS THE CAR REGION**

That:

- a) *United States and Mexico coordinate with the ICAO NACC Regional Office to hold in Mexico City the next meeting of the Working Group for the implementation of RNP-10 in the Gulf of Mexico by the third quarter of 2010;*
- b) *the C/CAR States/Territories and COCESNA send to the ICAO NACC Regional Office by **31 December 2010** their proposals to expand the implementation of upper airspace RNAV routes of the Gulf of Mexico; and*
- c) *the ICAO NACC Regional Office:*
 - i) *foster the participation of C/CAR States/Territories and COCESNA in the meetings of the Working Group for the implementation of RNP-10 in the Gulf of Mexico; and*
 - ii) *integrate all the proposals of upper airspace new RNAV routes within a PBN airspace concept for the CAR Region by end 2010.*

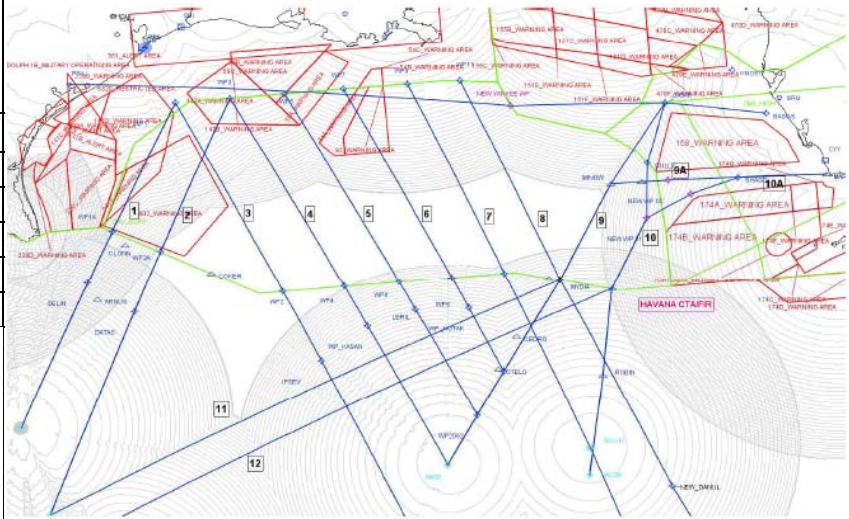
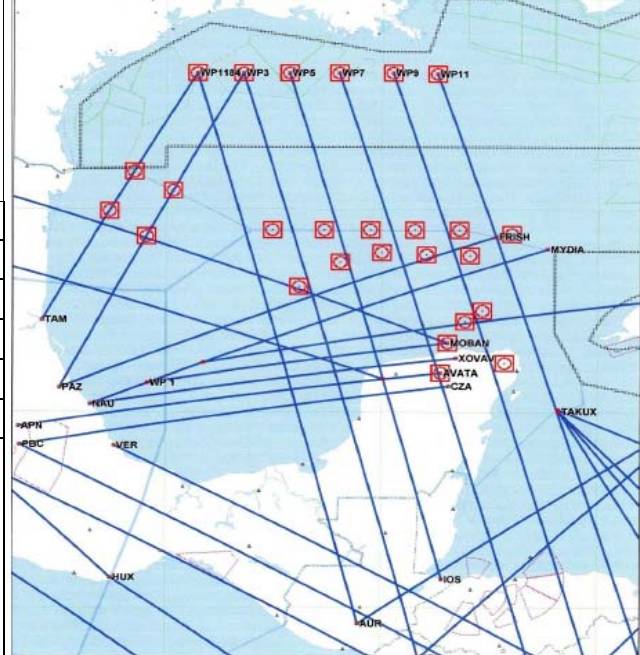
CONCLUSION 8/3 **PBN IMPLEMENTATION ACTIONS IN THE C/CAR**

That States/Territories of the Central Caribbean and COCESNA:

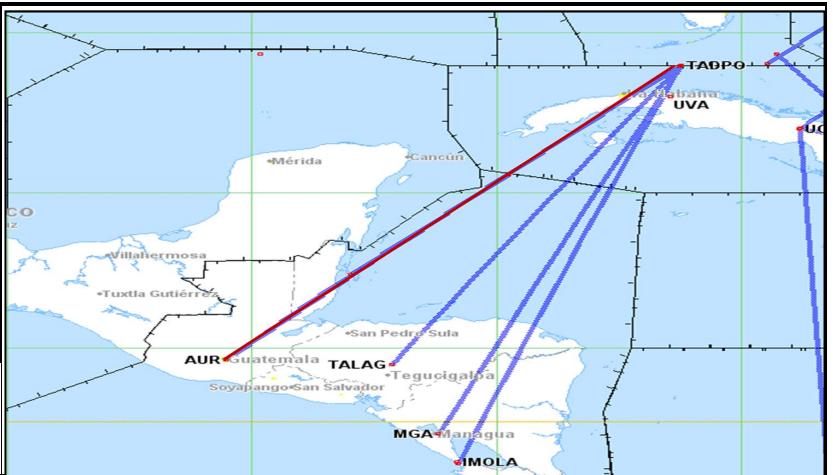
- a) *establish a register for RNP 4 and RNP10 approved aircraft by **15 October 2010**;*
- b) *publish by 15 October 2010:*
 - i. *RNAV 5 navigation specifications for upper airspace RNAV routes either already implemented or in the process of being implemented; and*
 - ii. *RNAV 1-2 navigation specifications if applicable for terminal areas (TMAs) RNAV routes either already implemented or in the process of being implemented;*
- c) *study:*
 - i. *the implementation improvements or realignment in the RNAV routes network in the upper airspace;*
 - ii. *the implementation of continuous descent operations (CDOs) in terminal areas (TMAs) of their jurisdiction; and*
- d) *inform the ICAO NACC Regional Office by **30 October 2010** of the progress achieved of actions indicated in items a), b) and c) for the harmonized implementation of a PBN airspace concept for the CAR Region.*

APPENDIX B/ APÉNDICE B

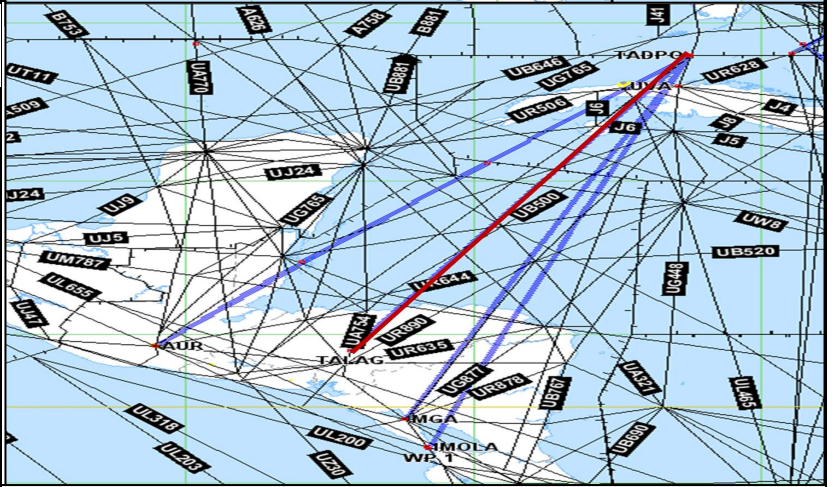
PROPOSED CHANGES TO THE ROUTE STRUCTURE IN THE CAR REGION
 CAMBIOS PROPUESTOS A LA ESTRUCTURA DE RUTAS EN LA REGIÓN CAR

	<h3 style="color: red;">Proposed RNAV Routes in the Gulf of Mexico</h3> 															
<p>NEW ROUTES</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">FIX/WPs</th> <th style="width: 20%;">LATITUDE</th> <th style="width: 25%;">LONGITUDE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="3" style="text-align: center;">under development</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	FIX/WPs	LATITUDE	LONGITUDE				under development									
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under development																
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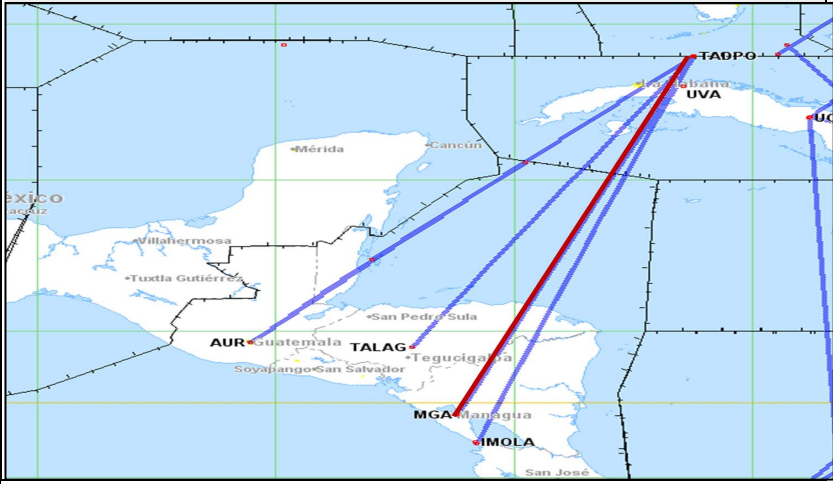
NEW ROUTE CA/CUBA 1		
FIX-WPs	LATITUDE	LONGITUDE
AUR	14 35.5N	090 31.6W
WP1	17 22.7	088.00.1
WP2	20 35.5	084 47.6
TADPO	24.00.0	081 13.0



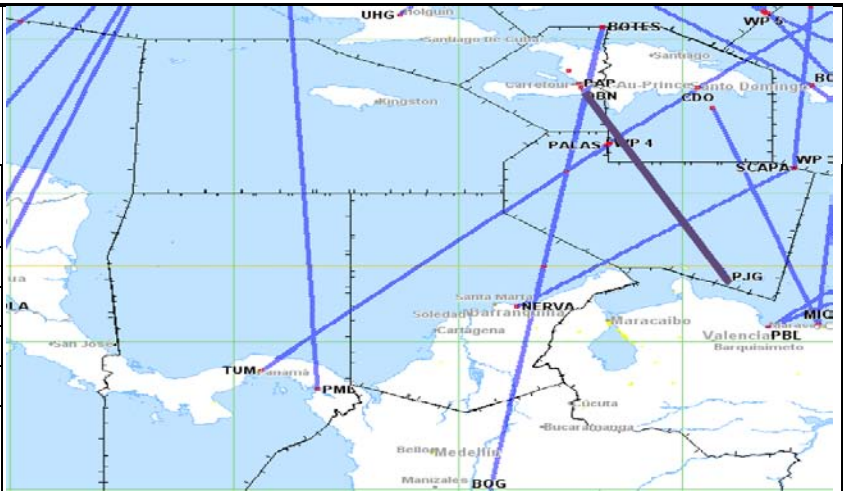
NEW ROUTE CA/CUBA 2 (441NM)		
FIX/WPs	LATITUDE	LONGITUDE
TALAG	14 26.2	087 08.6
MELDA	17 44.1	085 13.9
BISTO	20 22.4	083 39.9
TADPO	24.00.0	081 13.0



NEW ROUTE CA/CUBA 3 (765NM)		
FIX/WPs	LATITUDE	LONGITUDE
MGA	12 08.4	086 10.5
KARET	14 48.6	085 03.6
WP1	17 56.9	083 50.2
PISIS	20 12.7	082 55.9
TADPO	24 00.0	081 13.0



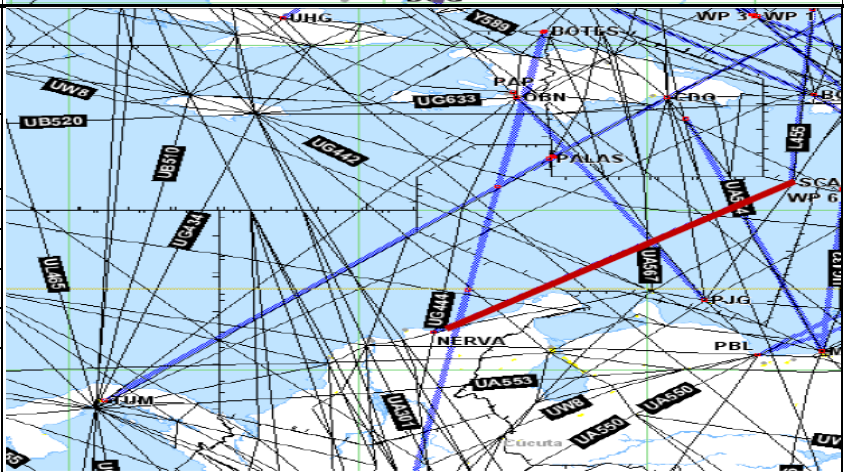
CCAR ROUTE REALIGNMENT A315 (419NM)		
FIX-WPs	LATITUDE	LONGITUDE
PJG	12 11.8	069 00.7
WP1	15 58.7	070 57.8
OBN	18 26.3	072 16.5



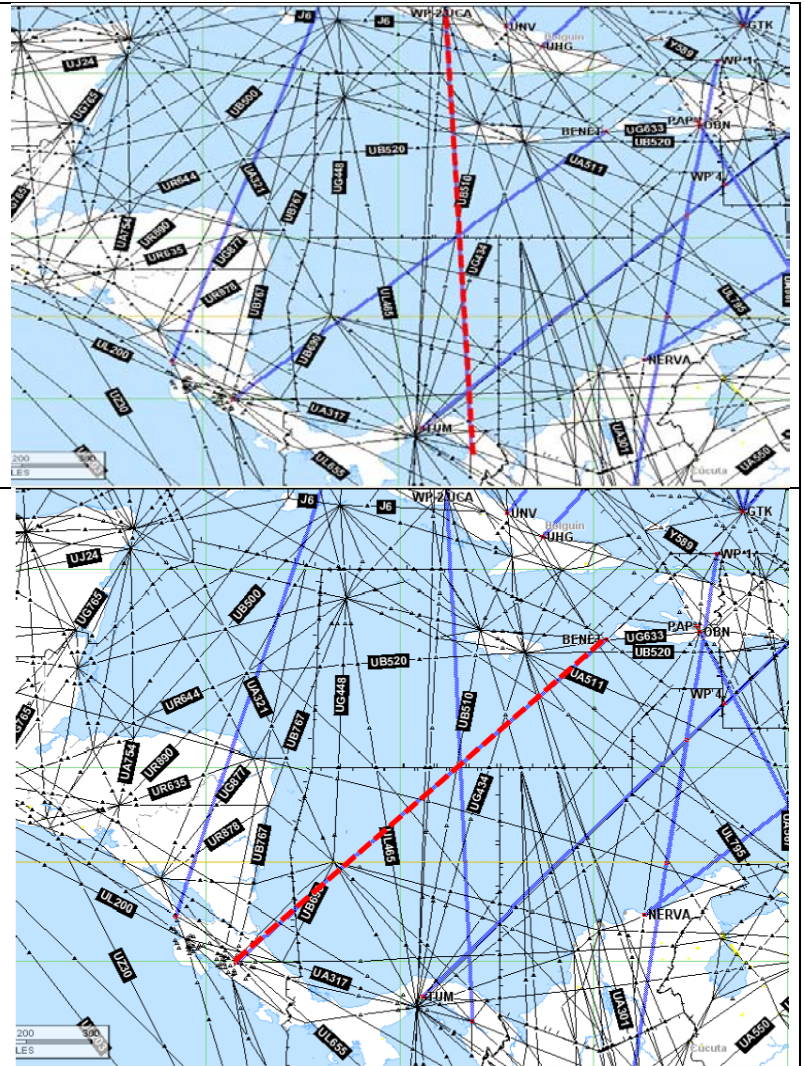
CCAR RTE REALIGNMENT G444 (719NM)		
FIX/WPs	LATITUDE	LONGITUDE
BOG	04 50.8	074 19.4
WP1	12 33.0	073 07.0
WP2	15 41.5	072 36.2
WP3	18 27.7	072 08.0
BOTES	20 25.0	071 46.5



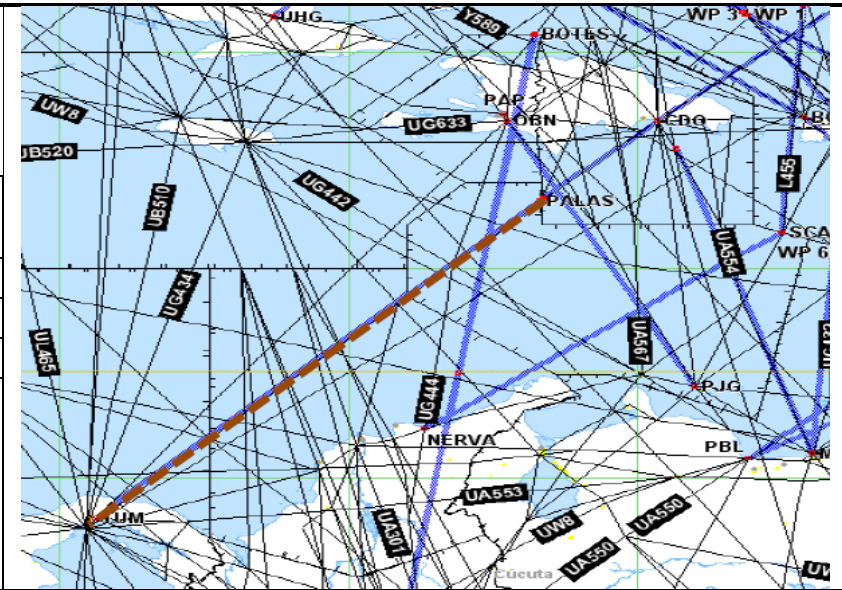
CCAR NEW ROUTE 1 (765NM)		
FIX/WPs	LATITUDE	LONGITUDE
NERVA	11 11.9	073 41.3
WP1	14 02.7	069 56.9
SCAPA	15 50.0	067 30.0



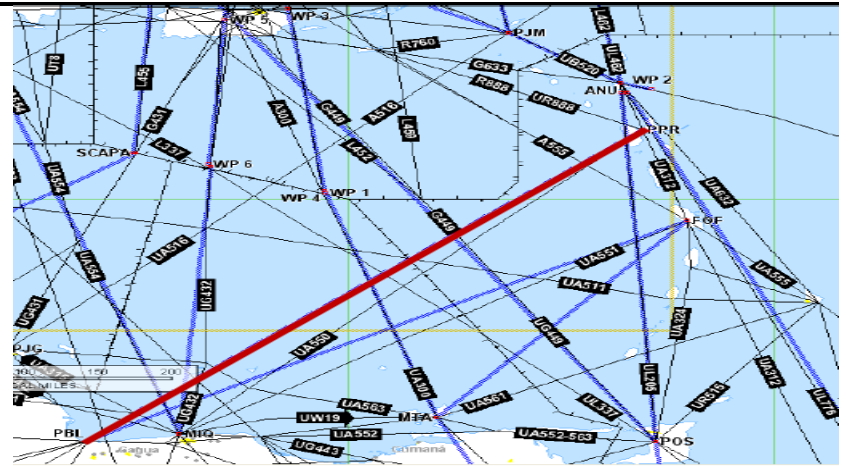
CCAR NEW ROUTE 2 (765NM)		
FIX/WPs	LATITUDE	LONGITUDE
PLM	08 24.4	078 08.3
COLBY	15 00.0	078 32.0
UCA	22 00.9	078 48.9
CCAR NEW ROUTE 3		
FIX/WPs	LATITUDE	LONGITUDE
TIO	09 59.0	084 14.2
WP1	12 30.1	081 26.0
COLBY	15 00.0	078 32.0
WP2	16 46.2	076 27.0
BENET	18 15.0	074 39.7



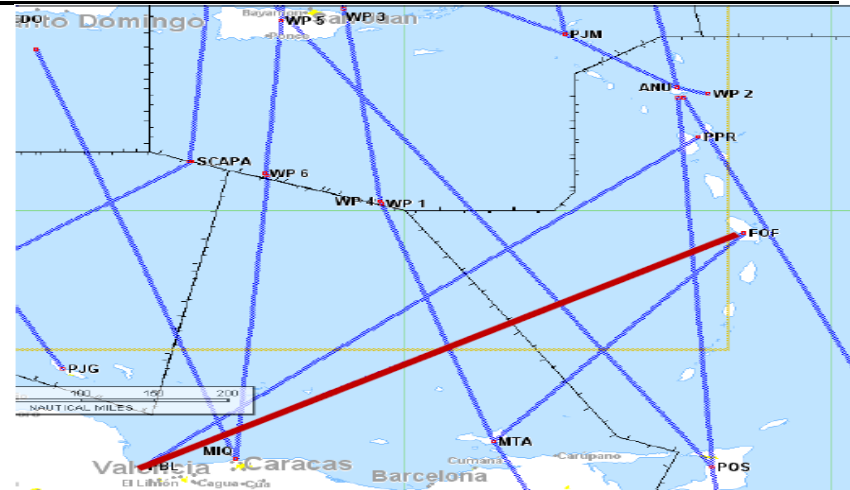
CCAR ROUTE RENAMING UA 319 → M597		
FIX/WPs	LATITUDE	LONGITUDE
PALAS	16 34.0	071 41.0
TUM	09 03.1	079 24.0



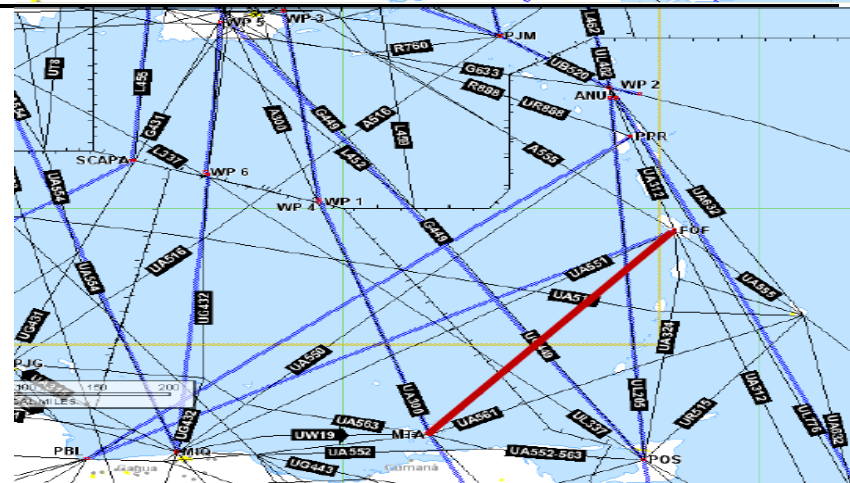
NEW ROUTE ECAR 1		
FIX-WPs	LATITUDE	LONGITUDE
PBL	10 29.1	068 04.7
WP1	13 52.9	064 17.3
PPR	16 15.9	061 32.4



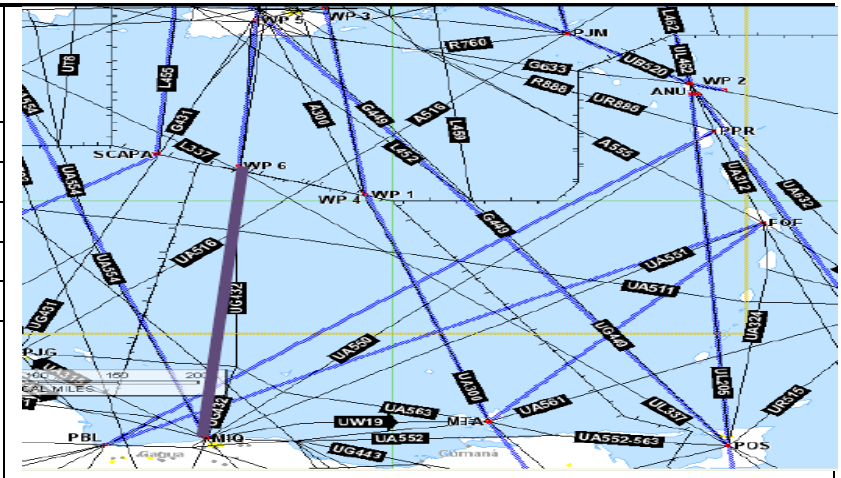
NEW ROUTE ECAR 2		
FIX/WPs	LATITUDE	LONGITUDE
PBL	10 29.1	068 04.7
WP1	13 01.7	063 46.4
FOF	14 35.4	061 01.4



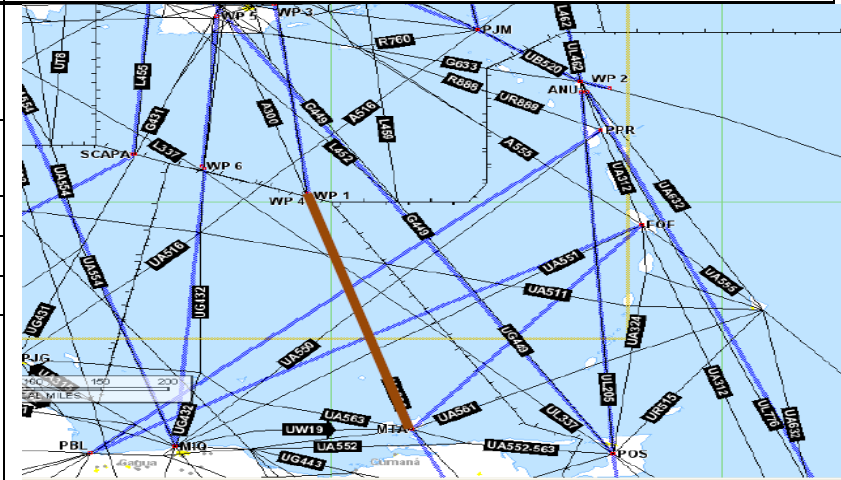
NEW ROUTE ECAR 3		
FIX/WPs	LATITUDE	LONGITUDE
FOF	14 35.4	061 01.4
WP1	12 00.3	063 07.0
MTA	10 55.1	063 57.8



ECAR RTE REALIGNMENT UG432		
FIX/WPs	LATITUDE	LONGITUDE
MIQ	10 36.6	066 59.4
SILVA	14 27.3	066 40.3
ARMUR	15 32.6	066 38.1



ECAR ROUTE RENAMING A300 → UL456		
FIX/WPs	LATITUDE	LONGITUDE
MTA	10 55.1	063 57.8
KIKER	15 05.9	065 17.7



ECAR ROUTE RENAMING UG449 → UL454		
FIX/WPs	LATITUDE	LONGITUDE
POS	10 28.0	061 23.5
ANADA	15 00.0	064 08.8
ELMUC	20 47.0	068 05.0

