

**ICAO/IATA/CANSO Performance-Based Navigation (PBN) Harmonization, Modernization and Implementation Meeting for the Caribbean (CAR) Region**

**SUMMARY OF DISCUSSIONS**

<b>Date:</b>	28 March – 1 April 2016
<b>Location:</b>	EMBRAER Complex, Fort Lauderdale, United States
<b>Objectives:</b>	<ul style="list-style-type: none"> <li>• Review, enhance and sign new Letters of Agreement (LoAs) for the coordination of operational procedures between Air Traffic Control (ATC) facilities</li> <li>• Propose changes to existing applicable longitudinal separation minima between adjacent Flight Information Regions (FIRs)</li> <li>• Discuss and propose changes for the optimization of routes in the upper airspace</li> <li>• Analyze regional PBN implementation efforts and discuss best practices concerning Air Traffic Flow Management (ATFM)</li> <li>• Discuss methodology to enhance route efficiency and agree to implementing action plan(s) to improve Airspace Organization and Management (AOM)</li> </ul>
<b>Output and Outcomes:</b>	<ol style="list-style-type: none"> <li>1. A key outcome is the Collaborative Decision Making (CDM) process in which participating States, air operators, and key industry stakeholders worked together to accomplish key tasks that will lead to true safety and efficiency efforts in the Caribbean Region for future PBN Task Force Meetings.</li> <li>2. All participating States agreed, to the extent applicable, to reduce longitudinal separation from 80 NM to 40 NM between transferred air traffic operating in the FIRs of the CAR Region. Some States, in some areas, agreed to reduce to 20 NM between transferred air traffic operating in the FIRs of the CAR Region. United States also informed on the progress made with Haiti and other CAR States to improve application of separation minima for transferring traffic with adjacent FIRs in CAR Region (<b>Appendix A</b>).</li> <li>3. Four (4) LoAs for the coordination and operational procedures between the air traffic control facilities were signed on 31 March 2016. A fifth LoA should be signed by 8 April 2016. Understanding the need for consistency, the proposed controller to controller phraseology for separation shall be discussed and agreed upon at the first teleconference with the PBN Task Force (TF) in May 2016.</li> <li>4. States and Air Navigation Service Providers (ANSPs) of the CAR and SAM Regions agreed to further review Air Traffic Service (ATS) LoAs not later than 30 November 2016, to introduce applicable longitudinal separation minima of 40 NM or 20 NM between transferred air traffic operating in the FIRs of the CAR region and adjacent FIRs of the SAM Region.</li> <li>5. Seven (7) routes have been agreed by the respective FIRs and will be submitted to ICAO for a Proposal for Amendment (PfA) not later than 22 May 2016. The currently agreed PBN routes are shown in <b>Appendix B</b>.</li> <li>6. The Federal Aviation Administration (FAA) will submit proposed Area Navigation (RNAV) routes from the METROPLEX and “Y” projects to harmonize regional ATS route network.</li> </ol>

7. The agreed new PBN route network includes implementation of Required Navigation Performance (RNP) 10, RNP 4 and RNP 2 in the Oceanic airspace of the FIRs of the CAR Region.
8. It is expected that the new PBN route network will improve regional capacity and efficiency to future traffic growth of 6% per year over the period 2014-2017.
9. CAR States also agreed to review availability of restricted areas to the air operations for prompt implementation of the Flexible Use of Airspace (FUA).
10. States should take advantage of the use of RANDOM route in Continental airspace. Guyana, Suriname and Trinidad and Tobago agreed to host the RANDOM route trials. The available RANDOM routes and/or areas and applicable procedures should be published in advance in the Aeronautical information Publication (AIP) for airspace users. Advanced flight planning systems of air operators takes into account various factors as wind, costs and fuel for day flights. Airlines that confirmed participation in RANDOM route trails in continental airspace are: American Airlines, Delta Airlines, Caribbean Airlines and Azul.
11. The Central American Airspace Harmonization Project (ARESAC) between Central American States for the implementation of a comprehensive PBN airspace concept in July 2017 was recognized as a regional project model. Panama will join as full participant in the ARESAC Project.
12. All CAR States are committed to achieve the PBN implementation targets as established in Assembly Resolution A 37-11 and the *Port-of-Spain Declaration*.
13. Special consideration will be given by States to increase implementation of Continuous Climb Operations (CCOs) and Continuous Descent Operations (CDOs) criteria in all Standard Instrument Departure (SIDs) and Standard Instrument Arrival (STARs) linked to the upper airspace to the greatest extent possible in order to obtain the most operational benefits
14. The regional PBN implementation project will be coordinated between Points-of-Contact (PoCs) of Central American, Eastern Caribbean and Central Caribbean States to ensure completion and monitoring of all implementation activities as depicted in **Appendix C**. The next PBN TF meeting for the Implementation of CAR Seamless Airspace will be held from 6 to 9 December 2016 to ensure harmonized implementation based on traffic flows and homogenous areas.

**Follow-up actions:**

- Draft PfA to the ICAO Doc 7030 — *Regional Supplementary Procedures* and Doc 8733— *Caribbean and South American Regions* will be developed for the implementation of new PBN route network, which will include realignment and deletion of some ATS routes, not later than 22 May 2016 for submission to States and International Organizations. The regional implementation date will be 30 November 2016, which includes AIP publication based on 3 AIRAC cycles
- States will coordinate with ICAO NACC Regional Office the assessment of the reduced track miles and CO<sub>2</sub> emission mitigation, as needed
- The ICAO NACC Regional Office will also carry out timely coordination with all States, Territories and International organizations of the CAR/SAM Regions to ensure in coordination with the SAM Regional Office the new PBN route network implementation of in CAR Region

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**APPENDIX A**

APPLICATION OF SEPARATION MINIMA FOR TRANSFERRING TRAFFIC WITH ADJACENT FLIGHT INFORMATION REGIONS (FIRS) IN THE CAR REGION

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
Trinidad & Tobago	United States (San Juan)	TBD	TBD	TBD	TBD	<p><b>Currently 10Mins MNT</b></p> <p>United States has advised that there is a current issue regarding the United States classification of their airspace that is preventing the use of this type of separation.</p> <p>United States and Trinidad and Tobago will continue discussion on this issue bilaterally.</p> <p>TJSJ has possible VHF issues at FIR BDY. This is being investigated.</p>
	Guyana	<p>Agreed (GNSS)</p> <p>LOA to be finalized and signed by April 8, 2016</p>	May 31, 2016	TBD	TBD	<p><b>Currently 10 Mins MNT</b></p> <p>Analysis will be conducted over the first six months of use and a decision will be made by DEC 2016 as to the timeframe to reduce to 20 NM</p>

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
	Suriname	TBD	TBD	TBD	TBD	<p><b>Currently 10 Mins MNT</b></p> <p>Currently there is a VHF communication challenge for T&amp;T at position TRAPP. Solutions to this challenge are being investigated.</p>
	Venezuela	TBD	TBD	TBD	TBD	<p><b>Currently 10 Mins MNT</b></p> <p>Confirmation required from Venezuela. T&amp;T is ready to implement 40NM GNSS with Venezuela</p>
Curacao	San Juan	TBD	TBD	TBD	TBD	<p><b>Currently 10 Mins MNT</b></p> <p>United States has advised that there is a current issue regarding the United States classification of their airspace that is preventing the use of this type of separation.</p> <p>United States and Curacao will continue discussion on this issue bilaterally.</p>

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
						TJSJ has possible VHF issues at FIR BDY. This is being investigated.
	DR	Agreed  A319, remain at 80nm	TBD	TBD		<b>Currently 10 Mins MNT</b>
	Venezuela	Agreed via telcon to be confirmed	TBD	TBD	TBD	<b>Currently 10 Mins MNT</b>
	Jamaica	Agreed	TBD	TBD	TBD	<b>Currently 10 Mins MNT</b>
	Haiti	UG444 remain at 80nm based on Curacao's VHF situation	TBD	TBD	TBD	<b>Currently 10 Mins MNT</b> Discussions ongoing
	Colombia	Agreed  A319, UG444 remain at 80nm	DEC 2016	TBD		<b>Currently 10 Mins MNT</b>
<b>COCESNA</b>	Mexico	Implemented	In effect	TBD	TBD	Challenge to Reduction to 20 is due to required separation between Mexico and Houston
	Cuba	N/A	N/A	Implemented	implemented	Data sharing agreements in effect. 2017 proposed RADAR handoffs

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
	Jamaica	Implemented	In effect	Discussions		Limitation is VHF at BDY with Jamaica. Request has been made by Jamaica for solution. When this is accomplished, analysis for use of 20nm will be done by Jamaica
	Panama	Implemented	In effect	Reduce to 20NM in a certain area that include the FIX points. <ul style="list-style-type: none"> <li>• UM659 LESIR</li> <li>• UM328 PAPIN</li> <li>• UR773/UA502 POXON</li> <li>• UL655 EGODI</li> <li>• UG440 ISEBA</li> <li>• UA317 BUFE0</li> <li>• UM796 PADUR</li> <li>• UM419 ANSON</li> <li>• UA322 AMUBI</li> <li>• UR505 DURAM</li> </ul> Maintain 40NM the next points: <ul style="list-style-type: none"> <li>• UA552 FALLA</li> </ul>		<ul style="list-style-type: none"> <li>•</li> </ul>

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
				<ul style="list-style-type: none"> <li>• UA321 PELRA</li> </ul>		
	Colombia	Agreed	TBD	TBD	TBD	LOA being revised.
<b>Dominican Republic</b>	Haiti	In discussion	TBD	TBD	TBD	Discussions Ongoing
	Curacao	Agreed A319, remain at 80nm	TBD	TBD	TBD	
	Miami	Discussion with Miami re procedural contingency				<b>Currently 10 NM Surveillance in use</b> Discussion if required
	San Juan	Willing to reduce. Procedural. Discussion with San Juan	TBD			<b>Currently 10 Mins MNT</b>  <b>United States has advised that there is a current issue regarding the United States classification of their airspace that is preventing the use of this type of separation.</b>

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
						<p><b>United States and Curacao will continue discussion on this issue bilaterally.</b></p> <p><b>TJSJ has possible VHF issues at FIR BDY. This is being investigated.</b></p>
<b>Mexico</b>	COCESNA	<p>Already implemented (Surveillance)</p> <p>Discussion about procedural use of 40NM with GNSS</p>				<p>Northbound traffic from COCESNA Challenge to Reduction to 20 is due to required separation between Mexico and Houston</p>
	Houston	N/A				<p><b>Continental – 10 NM miles Surveillance</b></p> <p>The proposed separation standard is currently being reviewed by FAA HQs to determine applicability in ZHU offshore airspace.</p>
		N/A				<p><b>Oceanic 10 minutes (MNT)</b></p> <p>The proposed separation standard is currently being reviewed by FAA HQs to determine applicability in</p>



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						ZHU offshore airspace.
	Albuquerque	N/A				<b>Currently Continental – 10NM miles Surveillance</b>  Bilateral Discussions required
	Los Angeles	N/A				<b>Currently 10 nm Surveillance</b> Bilateral Discussions required
	Cuba	TBD	TBD	TBD	TBD	<b>Currently 40 nm (surveillance)</b> Discussion regarding use of 40NM procedural under a letter of agreement
<b>Haiti</b>	Kingston	TBD	TBD	TBD	TBD	10 Mins MNT  Discussions Ongoing
	Cuba	TBD	TBD	TBD	TBD	10 Mins MNT  Discussions Ongoing
	Dominican Republic	TBD	TBD	TBD	TBD	10 Mins MNT  Discussions Ongoing
	Miami	TBD	TBD	TBD	TBD	10 MINS MNT

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
	Curacao	LOA agreement in place				
Guyana	Trinidad & Tobago	Agreed	May 31 2016	TBD	TBD	
	Suriname	Agreed	May 31, 2016	TBD	TBD	
	Brazil	Signed	Implemented	TBD	TBD	
	Venezuela	TBD	TBD	TBD	TBD	
Suriname	Guyana					10 Mins MNT
	Brazil	Suriname in favour	TBD	TBD	TBD	Sent draft to Brazil. TELCON on April 7 for discussion
	French Guiana	TBD	TBD	TBD	TBD	10 Mins MNT
	Trinidad and Tobago	Suriname willing, Trinidad and Tobago has challenges with VHF	TBD	TBD	TBD	<b>Currently 10 NM MNT</b>  Currently there is a VHF communication challenge for T&T at position TRAPP.
Antigua and Barbuda (with Trinidad)						
Bahamas		TBD				<b>Discussions needed with United States</b>
Barbados (with Trinidad)						
Belize (with COCESNA)						

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
Colombia	PANAMA	Agreed  Air traffic flying between the FIRs maintain 20 nm separation	December 2016	As agreed between FIRs	December 2016	
	JAMAICA	Agreed				20nm will depend on establishing communication in the north of the Barranquilla FIR
	CURACAO	Agreed	December 2016	TBD	TBD	
	VENEZUELA	TBD	TBD	TBD	TBD	
Costa Rica (with COCESNA)						
Cuba	COCESNA	N/A	N/A	Implemented	Implemented	Data sharing agreements in effect. 2017 proposed RADAR handoffs
	MEXICO	TBD	TBD	TBD	TBD	Currently 40 nm (surveillance) Discussion regarding use of 40NM procedural under a letter of agreement
	HAITI	TBD	TBD	TBD	TBD	10 Mins MNT  Discussions Ongoing

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
	JAMAICA	TBD	TBD	TBD	TBD	<p>Currently 40nm overflight based on surveillance, 20nm landing based on surveillance.</p> <p>Use of GNSS procedural minima to be discussed</p>
Honduras (with COCESNA)						
Panama	COCESNA	In effect	Implemented	<p>Reduce to 20NM in a certain area that include the FIX points.</p> <ul style="list-style-type: none"> <li>• UM659 LESIR</li> <li>• UM328 PAPIN</li> <li>• UR773/UA502</li> </ul> <p>POXON</p> <ul style="list-style-type: none"> <li>• UL655 EGODI</li> <li>• UG440 ISEBA</li> <li>• UA317 BUFE0</li> <li>• UM796 PADUR</li> <li>• UM419 ANSON</li> <li>• UA322 AMUBI</li> <li>• UR505 DURAM</li> </ul> <p>Maintain 40NM the next points:</p> <ul style="list-style-type: none"> <li>• UA552 FALLA</li> <li>• UA321 PELRA</li> </ul>		

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
	COLOMBIA	Agreed  Air traffic flying between the FIRs maintain 20 nm separation	December 2016	As agreed between FIRs	December 2016	
	JAMAICA	Agreed	1 May 2016	TBD	TBD	
United States	TRINIDAD AND TOBAGO	TBD	TBD	TBD	TBD	<p><b>Currently 10Mins MNT</b></p> <p><b>United States has advised that there is a current issue regarding the United States classification of their airspace that is preventing the use of this type of separation.</b></p> <p><b>United States and Trinidad and Tobago will continue discussion on this issue bilaterally.</b></p> <p><b>TJSJ has possible VHF issues at FIR BDY. This is being investigated.</b></p>
	CURACAO	TBD	TBD	TBD	TBD	<b>Currently 10 Mins MNT</b>

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
						<p>United States has advised that there is a current issue regarding the United States classification of their airspace that is preventing the use of this type of separation.</p> <p>United States and Curacao will continue discussion on this issue bilaterally.</p> <p>TJSJ has possible VHF issues at FIR BDY. This is being investigated.</p>
	DR	<p>Willing to reduce Procedural</p> <p>Discussion with San Juan</p>				<p>Currently 10 Mins MNT</p> <p>United States has advised that there is a current issue regarding the United States classification of their airspace that is preventing the use of this type of separation.</p> <p>United States and Curacao will continue discussion on this issue bilaterally.</p>

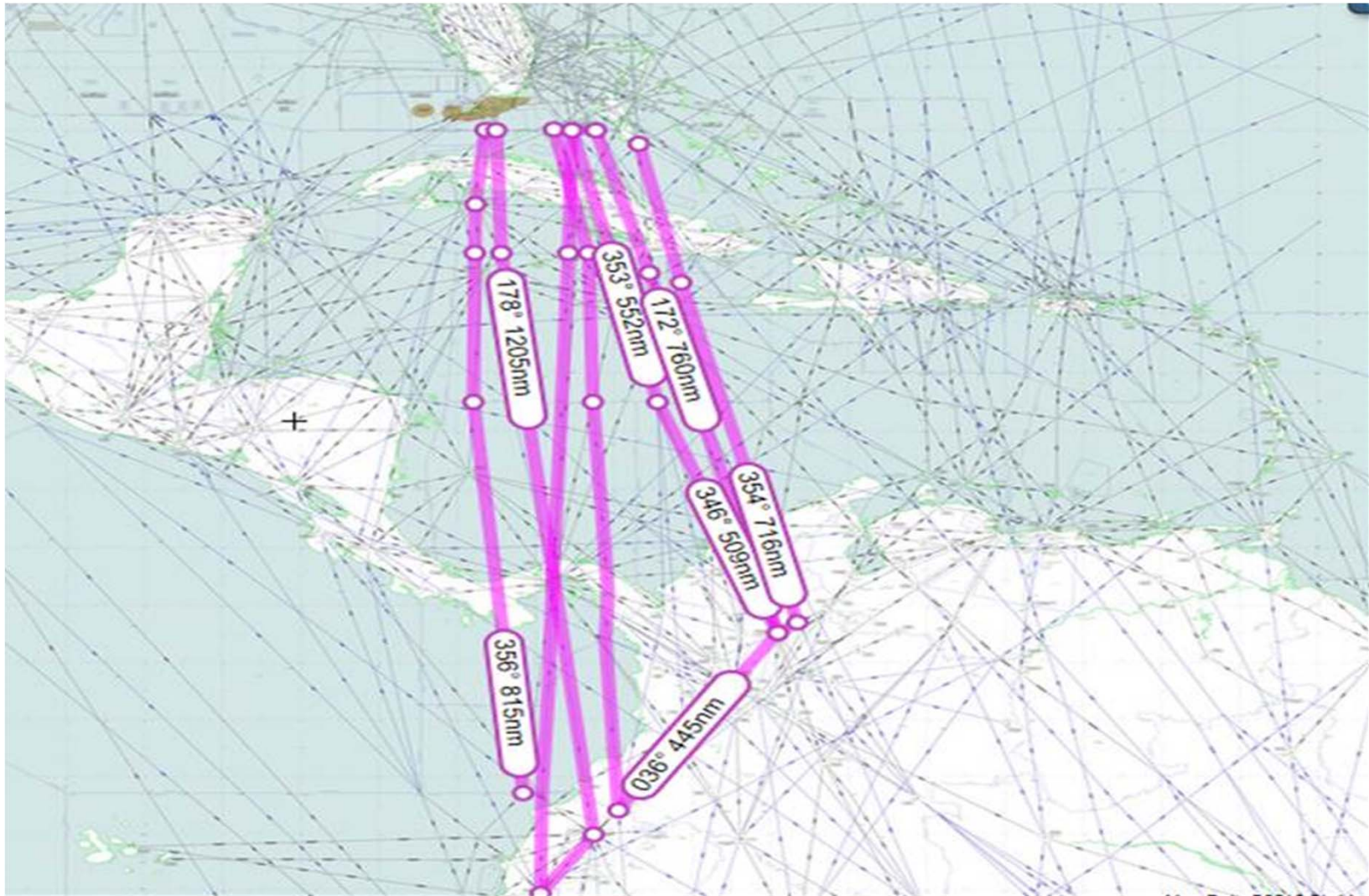
STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
						TJSJ has possible VHF issues at FIR BDY. This is being investigated.
	MEXICO (Reference Above)					
	HAITI	TBD	TBD	TBD	TBD	10 MNT
Jamaica	Curacao	Agreed	TBD	TBD	TBD	<p>Currently 10 Min MNT in use</p> <p>Discussions on ground to ground communications in progress and LOA revision to be signed soon.</p> <p>Automated coordination being investigated.</p> <p>Limitation is VHF at BDY with Jamaica. Request has been made by Jamaica for solution. When this is accomplished, analysis for use of 20nm will be done by Jamaica</p>
	COCESNA	Implemented  EXCEPTION: UM782 10 MIN MNT	In effect	Discussions	TBD	
	PANAMA	agreed	1 May 2016	TBD	TBD	
	COLOMBIA	Implemented	In use	TBD	TBD	

STATE/ORGANIZATION	Adjacent State/Organization	40 NM GNSS/DME Longitudinal	Proposed implementation dates	20 NM GNSS/DME Longitudinal	Proposed implementation dates	Remarks
	HAITI	TBD	TBD	TBD	TBD	
	CUBA	TBD	TBD	TBD	TBD	<b>Currently 40nm overflight based on surveillance, 20nm landing based on surveillance.</b>  Use of GNSS procedural minima to be discussed

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# Agreed PBN Routes



APPENDIX C  
Schedule Seamless airspace (2).xlsx

	March	April	May	June	July	August	September	October	November	December
28 March - 1 April	PBN Meeting									
5 - 6 April		ANI/WG/3 Meeting - Regional agreements of the implementation of the PBN route network - Regional agreement towards separation minima between adjacent FIR's in the CAR region								
May			NACC DG Meeting -Endorse of agreements from the ANI/WG/3 meeting -Endorse proposal for amendmen to ICAO Doc 8733							
July					Expected approval for PBN implementation route network in the CAR region					
30-Nov									Implementation of the new PBN route network for the CAR region  -Implementation of regional ATC separation minima between adjacent FIRs for the CAR region	
6 - 9 December										Next PBN CAR Seamless Airspace Meeting