



# ICAO

International Civil Aviation Organization  
North American, Central American and Caribbean Office  
WORKING PAPER

E/CAR/CATG/9 — WP/12  
18/07/25

**Ninth Eastern Caribbean Civil Aviation Technical Group (E/CAR/CATG/9) Meeting**  
Miami, United States, 28 to 31 July 2025

**Agenda Item 3: Follow-up of the activities of the E/CAR/CATG**  
**3.5 Progress report of the Communications Navigation and Surveillance (CNS) Committee**

**FOLLOW-UP ON CONCLUSIONS, DECISIONS AND ACTION PLAN OF PREVIOUS MEETING**  
**E/CAR/NTG/13 - E/CAR/RD/11 MEETINGS**

(Presented by the E/CAR/NTG and ECAR/RD Rapporteur)

EXECUTIVE SUMMARY	
This working paper examines the actions taken regarding the valid conclusions from previous E/CAR/NTG Meeting, as well as the conclusions and decisions formulated by the E/CAR/NTG/13, E/CAR/RD/11.	
<b>Action:</b>	Suggested actions are described in Section
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li><li>• Security &amp; Facilitation</li><li>• Economic Development of Air Transport</li><li>• Environmental Protection</li></ul>
<i>References:</i>	<ul style="list-style-type: none"><li>• Final Report E/CAR NTG/13 - E/CAR/RD/11 Meetings, Miami, United States, 21 – 24th October 2024.</li></ul>

## 1. Introduction

1.1 The Thirteen Eastern Caribbean Network Technical Group and Eleventh Eastern Caribbean Radar Data Sharing Ad-hoc Group E/CAR/NTG/13 and E/CAR/RD/11 Meetings were held at the IATA Americas premises in Miami, United States, from 21 to 24 October 2024. The Meeting was attended by seven (7) States/Territories from the E/CAR Region and one (1) International Organization, totalling thirty (30) delegates as indicated in the list of participants.

1.2 During the Thirteenth Eastern Caribbean Network Technical Group (E/CAR/NTG/13) and Eleventh Eastern Caribbean Radar Data Sharing Ad hoc Group (E/CAR/RD/11) meetings, there were numerous discussions, which led to several decisions and conclusions being made. Accordingly, this working paper.

## 2. Discussion

2.1 This working paper is intended to provide the Progress Report of the CNS Committee with the follow-up actions and status update on the projects being undertaken in the Eastern Caribbean (E/CAR) and the Piarco Flight Information Region (FIR) during the present E/CAR/CATG meeting.

2.2 The Terms of Reference (ToR) (**Appendix I**) as well as the Point of Contacts (**Appendices II and III**) Information for the coordination of maintenance activities for the E/CAR AFS Network and the State/Territory Members of the E/CAR Network Technical Group (E/CAR/NTG) were updated following the ECAR NTG 13 & ECAR RD 11. and are attached for the status of the valid conclusions and decisions.

2.3 To support the regional action plans, results from the most relevant updates to the work of the RD/NTG:

- a) Network Maintenance: Enhanced reporting and monitoring mechanisms for network issues were implemented to improve service quality and safety. As such, all fault reports are reported on a combination of TopDesk, TTCAA email [cnshelpdesk@caa.gov.tt](mailto:cnshelpdesk@caa.gov.tt) and TTCAA's cell phone with WhatsApp capabilities.
- b) Communication Improvements: Updated Points of Contacts (Appendix II) and a revised distribution list (Appendix III) to ensure that ICAO event information reaches all relevant stakeholders in the Eastern Caribbean
- c) Infrastructure Upgrades: Trinidad and Tobago is upgrading upgrading the Aeronautical Fixed Services (AFS) network, is progressing with Automatic Dependant Surveillance-Broadcast (ADS-B), Very High Frequency (VHF) system upgrades for the upper level of the Piarco Flight Information Region, targeting completion between by September 2025 and is in initial stages of the Space-Based ADS-B.

2.4 During the period 2024 to 2025, the CNS infrastructure within the E/CAR States commenced with the installation of the new ADS-B/MLAT Surveillance Network in Trinidad and Tobago, the AFS (ground-to-ground communication) IP Network Upgrade and the changing over from the Analog to the VHF (air-to-ground communication) IP Upgrade. Recently, the Trinidad and Tobago Civil Aviation Authority (TTCAA) procured the Space-Based ADS-B to compliment the surveillance coverage for the entire Piarco Flight Information Region (FIR).

2.5 Updates on the projects undertaken by the Trinidad and Tobago Civil Aviation Authority (TTCAA) are as follows:

### 2.5.1 Aeronautical Fixed Services (AFS) Network Upgrade.

The installation of the Aeronautical Fixed Services (AFS) Network commenced in May 2024. The first node, Tobago, was successfully implemented and tested over a three (3) month period. The original plan was revised due to the delay of the IP circuits being installed by international telecommunications providers and the lead time for the ECAR States to approved access to their respective airport facility. Thereafter,

the project implementation plan for the installation of the other nodes throughout the ECAR States was approved and submitted to the E/CAR States and Puerto Rico.

2.5.1.1 Of the 15 sites, IP circuits have been installed at 11 sites. The new AFS Network ECAR IP Nodes were implemented in Anguilla, Antigua, Grenada, Guadeloupe, Martinique, Montserrat, St. Kitts, Nevis, St. Lucia (Hewanorra and George Charles) and St. Vincent and the Grenadines. These nodes are currently being monitored by the TTCAA and the TSTT to ensure efficiency and reliability. The TTCAA is awaiting the approval of work to commence at the Barbados and the Dominica (Douglas Charles and Canefield) sites, while work at the Puerto Rico site is currently in progress. As discussed at the E/CAR NTG/12, these improvements are already showing great benefits to the AFS Network provided to the ECAR States.

2.5.2 Very High Frequency/Aeronautical Mobile Services (VHF/AMS).

2.5.2.1 The upgrade of the VHF/AMS system was planned to be completed in two (2) phases. In Phase one (1), the conversion of the communication link circuits from analog to Internet Protocol (IP) was completed in May 2025 and the VHF IP converters installed at the different high sites during the period 23 September – 11 October 2024.

2.5.2.2 Phase 1 was scheduled to be completed in October 2024. However, there were some challenges on the testing of the circuits together with reliability and stability issues on the IP infrastructure. This was resolved in January 2025 and Aeronav Inc., TTCAA and TSTT are making all efforts to complete the transfer of 'live traffic' to the IP platform. For Phase 2 of the project, a new VHF solution is currently in the procurement process. This will include but is not limited to the upgrade of VHF radios, antennas, switching equipment, filters cables and accessories. Additionally, every effort is being made to improve the accountability of the network providers associated with the AMS Network.

2.5.3 Automatic Dependent Surveillance – Broadcast and Wide Area Multilateration (ADS B/WAM).

2.5.3.1 The installation of the Automatic Dependent Surveillance–Broadcast/ Multi-lateration (ADSB/MLAT) System in Trinidad commenced on 05 August 2025 and is scheduled to be completed in two (2) phases.

2.5.3.2 In Phase 1, the installations of the ADS-B equipment at the Carlsen Field, the Piarco ACC, the Piarco Tower and the ANR Robinson Tower (Tobago) were completed and the data is available at the Leonardo S.p.A. ADS-B testbed. Of the remaining four (4) sites, two (2) sites are in progress (Mt. Bleu Site, Trinidad and French Fort Site, Tobago). The final two (2) sites (Brigand Hill and North Post, Trinidad) are expected to commence pending the delivery of the additional cabinet, materials and supplies. Installation is ongoing at the Mt. Bleu Site and French Fort Site (Tobago).

2.5.3.3 For Phase II, the installation of the equipment in Antigua, Barbados, and St. Lucia is expected to be completed by December 2025 with the final testing, validation, and integration of all the sites to provide the surveillance coverage over the continental airspace.

#### 2.5.4 Space-Based Automatic Dependent Surveillance – Broadcast (ADS-B)

2.5.4.1 The Trinidad and Tobago Civil Aviation Authority (TTCAA) has awarded a contract for Space-Based Automatic Dependent Surveillance – Broadcast (ADS-B) for Surveillance Data Services from Aireon LLC on May 2025. Aireon LLC conducted its ‘kick off’ meeting to provide an overview of the project. The Space-Based ADS-B will provide surveillance coverage in both the Continental and Oceanic airspaces. **Appendix IV** shows ADS-B, SSR and Space-Based ADS-B coverages Piarco Flight Information Region (FIR) ADS-B

##### Continental Coverage.

2.5.4.2 At that meeting, Aireon LLC outlined the phases of the project and briefly described the responsibilities and deliverables by both parties. Aireon LLC proposed to schedule fortnightly meetings commencing 25 June 2025. The 1st phase is expected to be completed within 1 month, the 2nd phase within 6 months and the 3rd (final) phase within 1 month. The entire project is expected to be completed within eight (8) months.

### 3. Suggested actions

3.1 The Meeting is invited to:

- a) take note of the progress and status of the CNS Committee’s activities;
- b) review and agree on the activities to be carried out; and
- c) Take any other actions as deemed appropriate.

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## APPENDIX I

### EASTERN CARIBBEAN NETWORK TECHNICAL GROUP (E/CAR/NTG) TERMS OF REFERENCE

#### 1. Background

1.1 The Eastern Caribbean Network Technical Group (E/CAR/NTG) was established as a standing group in accordance with the Thirty-First Eastern Caribbean Working Group Meeting (E/CAR/WG/31), Conclusion 31/7 - *Replacement of the E/CAR AFS Network*, approved by the Twenty-Second Meeting of Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCA/22) Port-of-Spain, Trinidad and Tobago, 8 to 11 December 2009. The terms of reference of the E/CAR/NTG were approved by the E/CAR/DCA/22 Meeting, Decision 22/6 - *E/CAR Network Technical Group (NTG) Terms of Reference and First Meeting*. The following main objectives are assigned:

- a) analysis and monitoring of the status of the current E/CAR AFS Network;
- b) study, analyze and follow-up on the planning, documentation and implementation of the replacement of the existing E/CAR AFS Network;
- c) recommend measures to improve reliability of the E/CAR AFS Network for the immediate/near term; and

1.2 By 2013, the E/CAR/NTG had fulfilled these objectives, with an efficient Internet Protocol (IP) Network and well-established stable services; however, the continuous monitoring, analysis and follow-up to Network improvements and resolution of failures were considered necessary by the E/CAR AFS Network participants.

#### 2. Terms of Reference

For the activities related to the analysis and monitoring of the status of the current E/CAR AFS Network, the E/CAR/NTG is required to make recommendations on measures to improve the reliability of the E/CAR AFS Network for the immediate/ near term. These activities include:

- a) review the current status of the Network (maintenance and reporting procedures, technical personnel involved, spare parts, tools for monitoring the Network status, identify common network points of failure, etc.) and submit recommendations;
- b) ensure compliance of the Network services with ICAO SARPs, Regional Air Navigation Plans and user expectations (Aviation System Block Upgrades (ASBU) Block 0 Modules);
- c) assist Trinidad and Tobago and the E/CAR States with technical coordination and solutions of problems that occurred with the implementation and operation of the Aeronautical Fixed Service (AFS) including the E/CAR AFS Network, and to consider and make recommendations on measures to improve implementation and operation;
- d) study and propose to the E/CAR/DCA intra and inter-regional coordination for the E/CAR AFS Network connectivity with other regional and domestic digital communications networks of the CAR and SAM Regions; and
- e) inform and advise the E/CAR AFS Network users, if a major failure or network concern that affects the entire network occurs or may occur or an event that does not allow achieving the Network Service level agreement, recommending solutions for its recovery and actions by the E/CAR AFS Network Service Provider.

### 3. Work Programme

No.	Activities	Objectives	Responsible	Deliverables
1	To assist the E/CAR AFS Network Members in providing solutions to problems presented in the network operations and in the implementation of the related equipment and service.	Keep E/CAR AFS Network SLA levels	NTG	E/CAR AFS Network assistance
2	To study and implement Technical /operational measures that may be agreed to improve the operation and implementation of E/CAR AFS Network services, that do not impact in a significant cost, investments and objectives of the Network.	Satisfactory operation and service levels	NTG	Implementation of Network improvements
3	Keep E/CAR AFS Network Members aware of the status of the E/CAR AFS Network performance and conditions of operation.	E/CAR AFS Network awareness	NTG	Reliable E/CAR AFS Network website Network Performance revision
4	Maintain valid and up-to-date E/CAR AFS Network Contingency Procedures, taking into consideration the contingency plans of each E/CAR AFS Network Member and of the Service Provider and keeping aligned with the CAR Region General Contingency Plan.	Readiness for contingencies	NTG	E/CAR AFS NETWORK Contingency Procedures
5	To assist the E/CAR AFS Network Members in maintaining a valid data and voice circuits implementation, according to the requirements shown in the ANP CAR/SAM (ASBU BO modules and Regional/National Priorities).	Fulfil Air Navigation requirements	Task Forces- Ad hoc Groups	Data and voice circuit implementation
6	To study and propose solutions for AFS connectivity of the E/CAR AFS Network with other regional and domestic CAR/SAM networks.	Fulfil Air Navigation requirements	Task Forces- Ad hoc Groups	Data and voice circuit implementation

No.	Activities	Objectives	Responsible	Deliverables
7	To review and propose amendments to the terms of the Services Agreement, based on the ICAO requirements for the transitioning towards the ATN for the E/CAR AFS Network.	Network improvements	Taskforces	Effective and efficient E/CAR AFS Network Transition Process
8	Keep and validate with the E/CAR AFS Network Service Provider a procedural handbook on management, operation and maintenance of the E/CAR AFS Network telecommunication circuits.	Ensure proper E/CAR AFS Network maintenance and operation	NTG	Maintenance Procedural Handbook/Manual

#### 4. Working Methods

- a) The E/CAR/NTG work programme should present its activities in terms of objectives, responsible and deliverables. Further details can be provided in the form of Work Breakdown Schedule (WBS);
- b) E/CAR/NTG will avoid duplication of work within the E/CAR/CATG and maintain close coordination among the existing entities (like the NAM/CAR Air Navigation Implementation Group: ANI/WG) to optimize the use of available resources and experience;
- c) E/CAR/NTG may designate, as necessary, Ad hoc groups to work on specific topics and activities; all tasks and activities should be clearly defined by time and deliverables;
- d) E/CAR/NTG should co-ordinate and progress its works as follows to maximize efficiency and reduce costs:
  - ✓ conduct work via electronic written correspondence
  - ✓ conduct work via phone and teleconference calls
  - ✓ hold meetings when necessary
- e) E/CAR/NTG meetings shall be conducted as possible, jointly with other E/CAR Meetings like the E/CAR/CATG meetings; and
- f) E/CAR/NTG will report and coordinate the progress of assigned tasks to the E/CAR/CATG as well as to the E/CAR Directors.

#### 5. Membership

See attached Membership List. ICAO will act as technical adviser to the E/CAR/NTG.

#### 6. Rapporteur

Mr. Steve Saroop (Trinidad and Tobago)

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**STATE/TERRITORY MEMBERS OF THE E/CAR NETWORK  
TECHNICAL GROUP (E/CAR/NTG)**

**BARBADOS**

**Richard Odle**

Electronics Manager, Engineering Department  
Grantley Adams International  
Airport Inc.

E-mail: [ROdle@Gaiainc.bb](mailto:ROdle@Gaiainc.bb)  
Tel: 1 246 536 1332/3  
Cell: 1 246 832 5107

**FRANCE**

**Frederic Danloux**

Deputy Head of ANS  
French West Indies (FWI)

E-mail: [frederic.danloux@aviation-civile.gouv.fr](mailto:frederic.danloux@aviation-civile.gouv.fr)  
Tel: + 596 596 42 25 07  
Mobile: +596 696 96 11 07

**NETHERLANDS ANTILLES**

**Jan Brown**, Director ATC  
Princess Juliana International Airport  
Sint Maarten

E-mail: [rvanheyningen@pjiaa.com](mailto:rvanheyningen@pjiaa.com)  
Tel: +1 599 546 7530  
Fax: +1 599 546 7550  
Mobile: +1 599 520 7139

**TRINIDAD AND TOBAGO**

**Steve Saroop**, Manager CNS TTCAA

E-mail: [ssaroop@caa.gov.tt](mailto:ssaroop@caa.gov.tt)  
Tel: 1 868 669 4806 EXT. 2502  
Fax: 1 868 669 5239  
Mobile: 1 868 689 2284

**UNITED KINGDOM**

**Maria P. Boyle**, Chief Executive Officer, Caribbean Air Safety Support International  
Director of Civil Aviation for Anguilla, The British Virgin Islands and Montserrat  
E-mail: [Maria.Boyle@airsafety.aero](mailto:Maria.Boyle@airsafety.aero)



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**Zhuan Sweeney**  
Senior Air Traffic Controller  
John A Osborne Airport  
Montserrat  
E-mail: [sweeneyz@gov.ms](mailto:sweeneyz@gov.ms)  
Tel: 1 664 491 6218

**UNITED STATES**

Mr. Al O'Neill  
International Telecommunications  
NAS Integration & Infrastructure Solutions  
AJM-3122

Email: [al.o'neill@faa.gov](mailto:al.o'neill@faa.gov)  
Tel: 1 404 474 5169  
Mobile: 1 404 861 6503

**ECCAA**

**Trevor Davis**, Manager CNS Unit

E-mail: [tdavis@eccaa.aero](mailto:tdavis@eccaa.aero)  
Tel: 268 462 0030  
Mobile: 268 764 5771

## APPENDIX II

### EASTERN CARIBBEAN (ECAR) POINT OF CONTACTS (PoC)

State	Contact Person	Email Information	Contact Information
San Juan	Will Turner	<a href="mailto:will.ctr.Turner@faa.gov">will.ctr.Turner@faa.gov</a>	1-404-434-8187
	Joseph Cruz	<a href="mailto:joseph.v.cruz@faa.gov">joseph.v.cruz@faa.gov</a>	
	Luis Diaz	<a href="mailto:luiz.diaz@faa.gov">luiz.diaz@faa.gov</a>	
	Miguel Zayas	<a href="mailto:miguel.zayas@faa.gov">miguel.zayas@faa.gov</a>	
	Hector Ortiz-Diaz	<a href="mailto:hector.ortiz-diaz@faa.gov">hector.ortiz-diaz@faa.gov</a>	
Anguilla	Trevor Davis	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a>	1-268-723-2955
	Anthony Lawrence	<a href="mailto:answal@eccaa.aero">answal@eccaa.aero</a>	1-264-729-5552
	Roshima Roberts	<a href="mailto:roshima.roberts@aaspa.ai">roshima.roberts@aaspa.ai</a>	
	Jabari Harrigan	<a href="mailto:jabari.harrigan@aaspa.ai">jabari.harrigan@aaspa.ai</a>	
	Keith Richardson	keith.richardson@aaspa.ai	
Martinique	Joel Catelo	<a href="mailto:joel.catelo@aviation-civile.gouv.fr">joel.catelo@aviation-civile.gouv.fr</a>	011 596 596 42 25 14
	Harry Asselin De Beauville	<a href="mailto:harry.asselin-de-beauville@aviation-civile.gouv.fr">harry.asselin-de-beauville@aviation-civile.gouv.fr</a>	
	Jean Marcel Monroe	<a href="mailto:jean-marcel.monrose@aviation-civile.gouv.fr">jean-marcel.monrose@aviation-civile.gouv.fr</a>	
Guadeloupe	Joel Kiavue	<a href="mailto:joel.kiavue@aviation-civile.gouv.fr">joel.kiavue@aviation-civile.gouv.fr</a>	No info available as yet
	Julie Ibalot	<a href="mailto:Julie.ibalot@aviation-civile.gouv.fr">Julie.ibalot@aviation-civile.gouv.fr</a>	
	Vincent Leroy	<a href="mailto:vincent.leroy@aviation-civile.gouv.fr">vincent.leroy@aviation-civile.gouv.fr</a>	
St. Vincent	Stanton Gomes Deputy Director C.A	<a href="mailto:ddcasvg@gmail.com">ddcasvg@gmail.com</a>	1-268-723-2955
	Trevor Davis	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a>	
	Andrea Best	<a href="mailto:dcasvg@gmail.com">dcasvg@gmail.com</a>	
	David Burgin	<a href="mailto:dburgin.airports@gmail.com">dburgin.airports@gmail.com</a>	

Montserrat	Trevor Davis Joseph Irish Steve Ryan Zhuan Sweeny	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a> <a href="mailto:irishjl@gov.ms">irishjl@gov.ms</a> <a href="mailto:ryans@gov.ms">ryans@gov.ms</a> <a href="mailto:sweeneyz@gov.ms">sweeneyz@gov.ms</a>	1-268-723-2955
St. Kitts	Trevor Davis Joy Richardson Osbert Wilkinson	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a> <a href="mailto:joy.richardson@scaspa.com">joy.richardson@scaspa.com</a> <a href="mailto:osbert.wilkinson@scaspa.com">osbert.wilkinson@scaspa.com</a>	1-268-723-2955
Nevis	Trevor Davis Joy Richardson Osbert Wilkinson	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a> <a href="mailto:joy.richardson@scaspa.com">joy.richardson@scaspa.com</a> <a href="mailto:osbert.wilkinson@scaspa.com">osbert.wilkinson@scaspa.com</a>	1-268-723-2955
Antigua	Trevor Davis Romeo Simpsom D Gibbs	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a> <a href="mailto:rsimpson@eccaa.aero">rsimpson@eccaa.aero</a> <a href="mailto:dgibbs@eccaa.aero">dgibbs@eccaa.aero</a>	1-268-723-2955
St. Lucia- Hewanorra	Trevor Davis Lynden Leonce	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a> <a href="mailto:lynden.leonce@slaspa.com">lynden.leonce@slaspa.com</a>	1-268-723-2955 1-758-719-2250 1-758-728-4867
St. Lucia- George Charles	Trevor Davis Lynden Leonce Kendell Peter Andre Klein	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a> <a href="mailto:lynden.leonce@slaspa.com">lynden.leonce@slaspa.com</a> <a href="mailto:Kendell.Peter@slaspa.com">Kendell.Peter@slaspa.com</a> <a href="mailto:aklein@eccaa.aero">aklein@eccaa.aero</a>	1-268-723-2955 1-758-719-2250 1-758-728-4867
Dominica- Douglas Charles	Trevor Davis Kershton Pascal	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a> <a href="mailto:kpascal@daspa.dm">kpascal@daspa.dm</a>	1-268-723-2955 1-767-225-9884

Dominica- Canefield	Trevor Davis	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a>	1-268-723-2955
	Kershton Pascal	<a href="mailto:kpascal@daspa.dm">kpascal@daspa.dm</a>	1-767-225-9884
Grenada	Trevor Davis	<a href="mailto:tdavis@eccaa.aero">tdavis@eccaa.aero</a>	1-268-723-2955
	Cristina Joseph	<a href="mailto:cjoseph@gaa.gd">cjoseph@gaa.gd</a>	
	Kurt Williams	<a href="mailto:kwilliams@gaa.gd">kwilliams@gaa.gd</a>	
	Glenn Forsyth	<a href="mailto:gforstyth@gaa.gd">gforstyth@gaa.gd</a>	
	Cuthbert Edwards	<a href="mailto:cedwards@gaa.gd">cedwards@gaa.gd</a>	
Barbados	Mr. Odle	<a href="mailto:rodle@gaiainc.bb">rodle@gaiainc.bb</a>	1-246-832-5107
	Alvin Hall	<a href="mailto:ahall@gaiainc.bb">ahall@gaiainc.bb</a>	1-246-832-2973
	Glyne Blanchette	<a href="mailto:glyne.blanchette@barbados.gov.bb">glyne.blanchette@barbados.gov.bb</a>	1-246-536-3603
FAA	John Fullerton	<a href="mailto:john.w-ctr.fullerton@faa.gov">john.w-ctr.fullerton@faa.gov</a>	
	Al O'neil	<a href="mailto:al.oneil@faa.gov">al.oneil@faa.gov</a>	
	Nigel Simmons	<a href="mailto:nigel.ctr.simmons@faa.gov">nigel.ctr.simmons@faa.gov</a>	

**APPENDIX III**  
**E/CAR Point of Contact Information for AFS Network**  
**Maintenance Coordination**

**Update: July 2023**

<b>State/Airport</b>	<b>Contact Name</b>	<b>Telephone</b>	<b>Alternate Contact</b>
Maurice Bishop Airport, Grenada	David Gibbs	Office: 473 444 4151 Mobile: 473 537 2046	Darryl Charles Office: 473 444 4151 Mobile: 473 422 4095
E.T. Joshua Airport, St. Vincent	David Boston	Office: 784 456 4950 Mobile: 784 430 2716	Anthony Benjamin Office: 784 456 4950 Mobile: 784 528 4083
George Charles, St. Lucia	Alinton Alfred	Office: 758 452 2660 Mobile: 758 518 3995	Jonathan Sandiford Office: 758 452 2660 Mobile: 758 715 6748
Hewanorra, St. Lucia	Andre Klien	Office: 758 454 6649 Mobile: 758 721 5152	Alinton Alfred Office: 758 452 2660 Mobile: 758 518 3995
Melville Hall and Canefield, Dominica	Joseph Morvan	Office: 767 449 1071 Mobile: 767 277 7909	Jean Williams, Airport Manager Tel: 1 767 445 7101 Melvillehallairportmanager.daspa@wdom.dm
John Osbourne, Montserrat	Steve Ryan	Tel Twr: 1 664 491 4229 Mobile: 1 664 496 4225 Email: ryans@gov.ms	Zhuan Sweeney, Senior ATC Tel: 1 664 491 6218 Email: sweeneyz@gov.ms
V C Bird Antigua	Romeo Simpson	Office: 268 462 3115 Mobile: 268 722 4053	Mark Young Office: 268 462 3115 Mobile: 268 771 5005
R L Bradshaw, St. Kitts/Nevis	Wycliffe Gumbs	Office: 869 465 4388 Mobile: 869 663 6503	Jaylon Warner Office: 869 465 4388 Mobile: 869 763 4205
Clayton Lloyd, Anguilla	Anthony Lawrence	Office: None Mobile: 264 583 7134	Lindon Hodges, Deputy Airport Manager Tel: 1 264 497 2384 Mobile: 1 264 476 3121 Email: lindon.hodge@gov.ai
Barbados	Richard Odle	Email: <a href="mailto:ROdle@Gaiainc.bb">ROdle@Gaiainc.bb</a> Tel: 1 246 536 1332/3 Mobile: 1 246 832 5107 ATC: 1 246 536 827 1132	Alvin Hall (NAVAIDS & COMMS) Tel: 1 246 832 2973 Email: <a href="mailto:Ahall@gaiainc.bb">Ahall@gaiainc.bb</a> Jackie Crichlow (SURVEILLANCE & COMMS) Tel: 1 246 832 2974

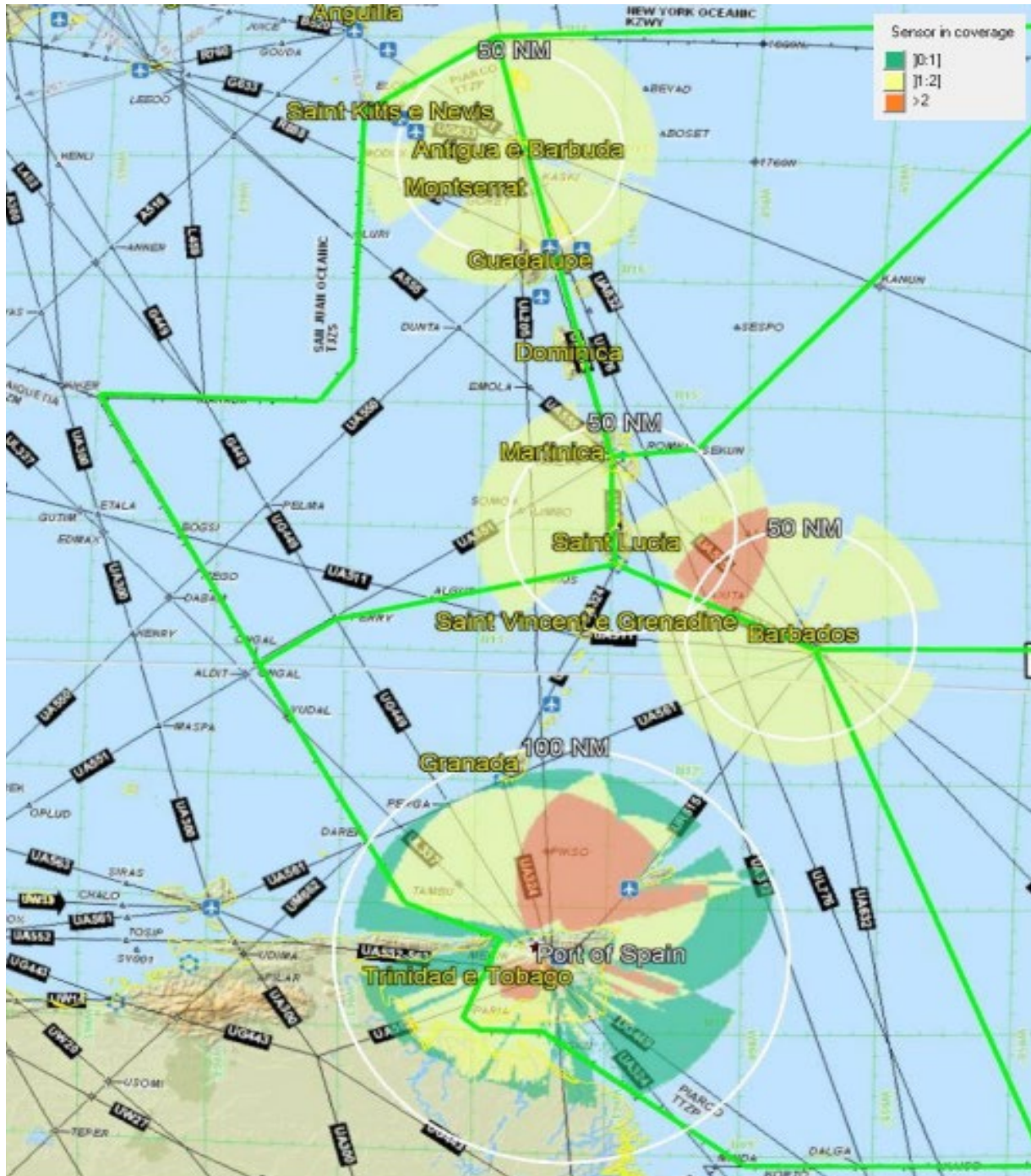
United States	<p>Mr. Al O'Neill International Telecommunications NAS Integration &amp; Infrastructure Solutions AJM-3122</p> <p>Email: <a href="mailto:al.o'neill@faa.gov">al.o'neill@faa.gov</a></p>	<p>Tel: 1 404 474 5169 Mobile: 1 404 861 6503</p>	<p>Nigel CTR Simmons Senior Systems Engineer NAS Integration &amp; Infrastructure Solutions AJW-3122</p> <p>Tel: 1 301 760 7648 Mobile: 1 301 523 4840 Email: <a href="mailto:nigel.ctr.simmons@faa.gov">nigel.ctr.simmons@faa.gov</a></p>
Martinique	<p>Mr. Harry Asselin De Beauville</p> <p>Email: <a href="mailto:harry.asselin-de-beauville@aviation-civile.gouv.fr">harry.asselin-de-beauville@aviation-civile.gouv.fr</a></p>		<p>Joel Catelo</p> <p>Mobile: 011 596 596 42 25 14</p> <p>Email: <a href="mailto:joel.catelo@aviation-civile.gouv.fr">joel.catelo@aviation-civile.gouv.fr</a></p>
Guadeloupe	<p>Mr. Joel Kiavue</p> <p>Email: <a href="mailto:joel.kiavue@aviation-civile.gouv.fr">joel.kiavue@aviation-civile.gouv.fr</a></p>		<p>Ms. Julie Ibalot</p> <p>Email: <a href="mailto:julie.ibalot@aviation-civile.gouv.fr">julie.ibalot@aviation-civile.gouv.fr</a></p>

<b>State/Airport</b>	<b>Contact Name</b>	<b>Telephon</b>	<b>Alternate Contact</b>
Martinique	<p>Frederic Danloux DGAC / SNA-Antilles Guyane Deputy Head ANSP FWI</p> <p>Email: Frederic.danloux @aviation- civile.gouv.fr Frederic.danloux</p>	<p>Tel: + 596 596 42 25 07 Mobile: +596 696 96 11 07</p>	<p>Raphael Gamess DGAC / SNA-Antilles Guyane Quality Manager QMS</p> <p>Email: Raphael.gamess @aviation-civile.gouv.fr Tel: +596 596 42 25 13 Mobile: +596 696 73 61 89</p>
Guadeloupe	<p>Julie Ibalot Organisme de Contrôle Pointe- à- Pitre, SNA-AG Head of Guadeloupe ANS</p> <p>Email: Julie.ibalot@aviation- civile.gouv.fr</p>	<p>Tel: + 590 0590 48 20 02 Mobile: + 590 0690 69 21 04</p>	
Trinidad and Tobago	Rupnarine Baboolal	<p>Tel: 1 868 669 4806 Ext. 2568</p> <p>Mobile: 1 868 774 4249</p> <p>Email: rbaboolal@caa.gov.tt</p>	<p>CNS/ECAR Phone</p> <p>Office: 1 868 669 1859</p> <p>Mobile: 1 868 724 6856</p>

## APPENDIX IV

### SURVEILLANCE COVERAGE FOR THE PIARCO FLIGHT INFORMATION REGION

#### ADS-B COVERAGE DIAGRAMS

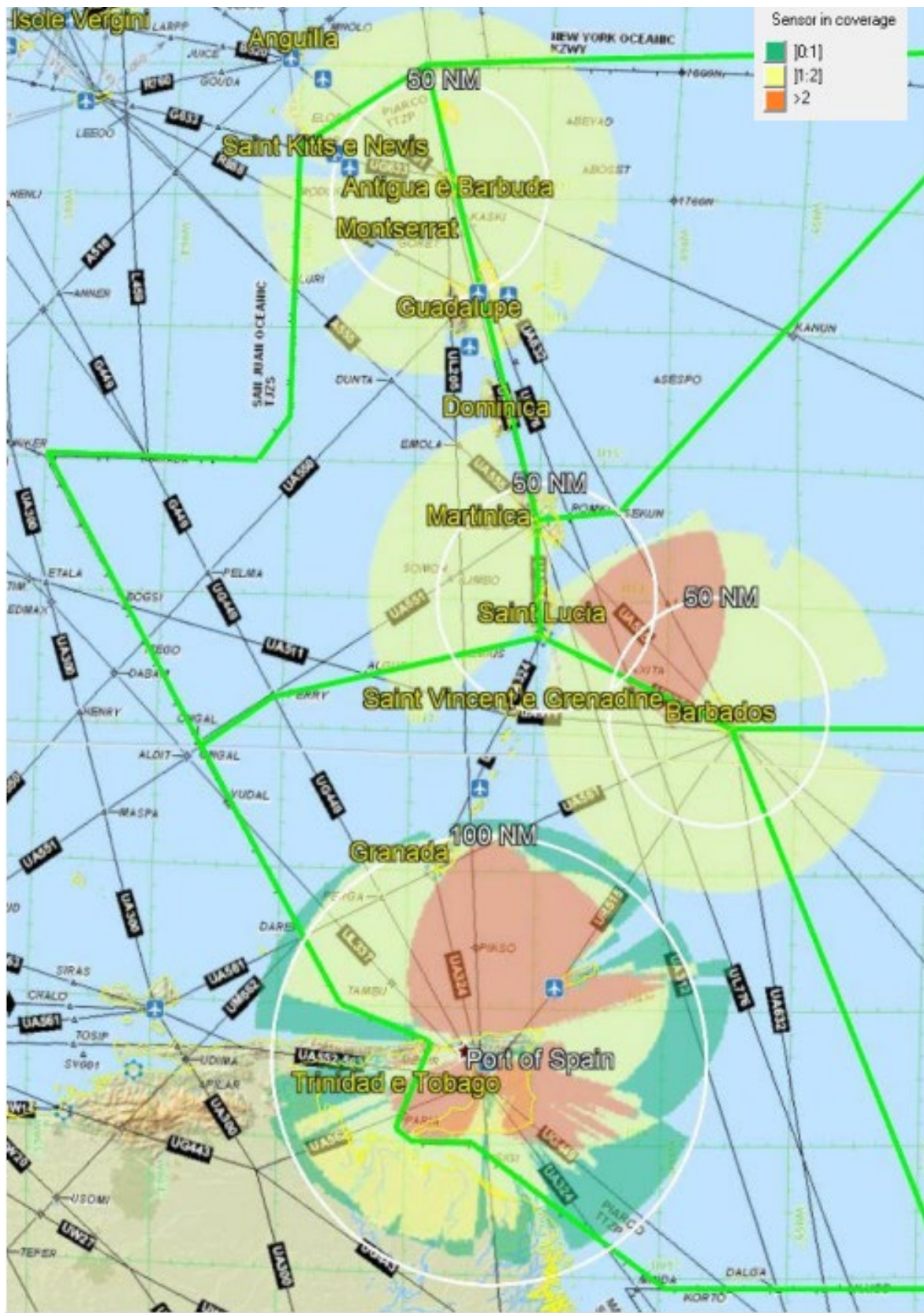


ADS-B coverage @250 feet ASL





ADS-B coverage @500 feet ASL



ADS-B coverage @1000 feet ASL





ADS-B coverage @2000 feet ASL



### ADS-B coverage @4000 feet ASL





ADS-B coverage @5000 feet ASL



### ADS-B coverage @10000 feet ASL





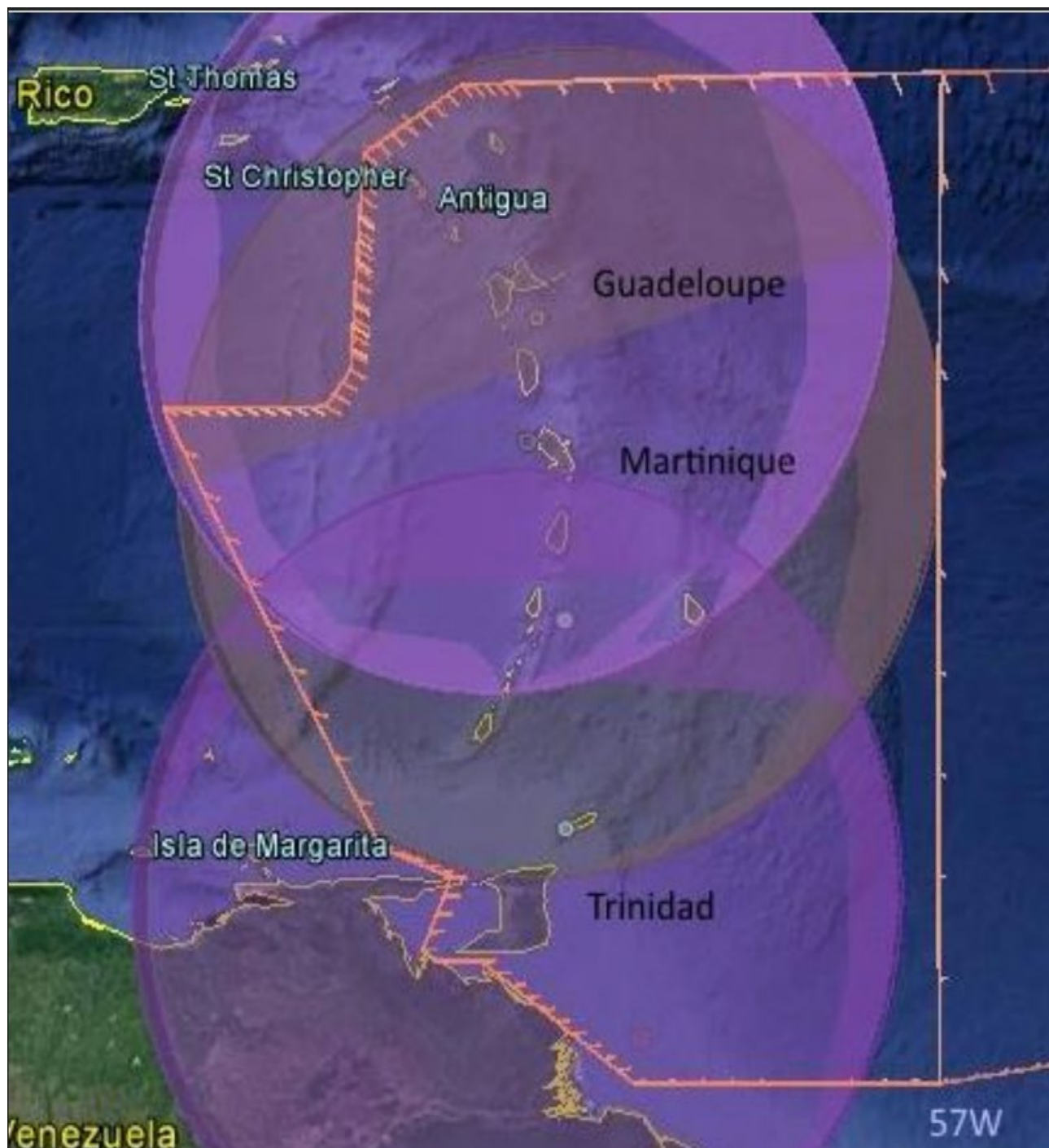
ADS-B coverage @20000 feet ASL



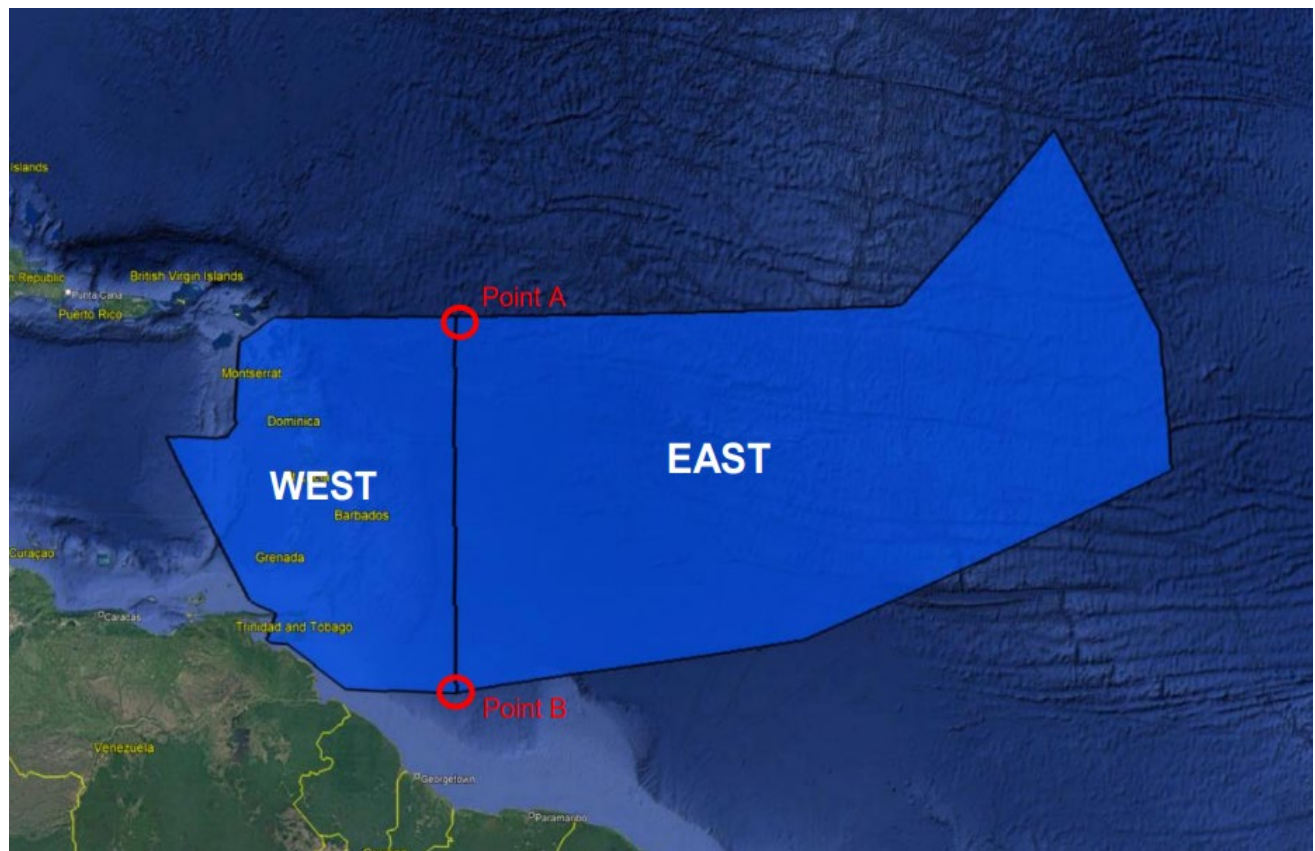
### ADS-B coverage @30000 feet ASL



## SSR ENROUTE COVERAGE DIAGRAMS



## SPACE BASED ADS-B COVERAGE DIAGRAMS



**Piarco FIR – East and West Space-Based Service Volumes**

**- END -**