



ICAO

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

WORKING PAPER

E/CAR/NTG/8 & E/CAR/RD/6 — WP/12  
17/08/18

**Eighth Eastern Caribbean Network Technical Group (E/CAR/NTG/8) and  
Sixth Eastern Caribbean Radar Data Sharing Ad hoc Group (E/CAR/RD/6)**  
Saint George's, Grenada, 3 - 5 September 2018

**Agenda Item 4: Surveillance Sharing Activities**  
**4.2 Surveillance Sharing Update: Antigua and Barbuda, Barbados, Sint Maarten  
and Trinidad and Tobago**

**SURVEILLANCE SHARING UPDATE: ANTIGUA AND BARBUDA, BARBADOS,  
SINT MAARTEN AND TRINIDAD AND TOBAGO**

(Presented by Trinidad and Tobago)

<b>EXECUTIVE SUMMARY</b>	
This paper presents information on developments in the areas of Automatic Dependent Surveillance – Broadcast (ADS-B)/Multilateration (MLAT) in the Piarco FIR	
<b>Action:</b>	The suggested actions are presented in Section 3.
<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>• Twelfth International Civil Aviation Organization (ICAO) Air Navigation Conference</li></ul>

**1. Introduction**

1.1 The Twelfth International Civil Aviation Organization (ICAO) Air Navigation Conference held in 2012 endorsed the Aviation System Block Upgrades (ASBU) to provide a framework for global harmonization and interoperability of seamless Air Traffic Management (ATM) systems. Among the Block Upgrades, the Block 0 module “Initial Capability for Ground Surveillance” recommends States to implement ADS-B, which provides an economical alternative to acquire surveillance capabilities especially for areas where it is technically or commercially not feasible to install radars

1.2 Surveillance within the continental airspace of the Piarco Flight Information Region (FIR) is presently achieved with the Piarco radar and radar data from Guadeloupe and Martinique through radar sharing. ADS-B would be an economical and relatively easy solution to implement to enhance the surveillance in the continental airspace.

1.3 In accordance with the Surveillance Concept for Piarco FIR at least two (2) sources of surveillance within the same coverage area are recommended. If one source fails or has to be removed from service for maintenance, two (2) sources should still be available. This is not the case in the continental Piarco FIR. The coverage of the Piarco radar is not the same as that of Martinique and Guadeloupe which results in only one (1) source in some areas. If this source fails or is removed from service for maintenance then no surveillance is available in that area. The introduction of ADS-B would provide a second source.

1.4 Analysis of data obtained from trials conducted in November 2017 with one (1) ADS-B receiver located at Piarco showed that over sixty percent (60%) of aircraft transiting the continental airspace are equipped for ADS-B.

1.5 Wide Area Multilateration (WAM) in the South Sector would provide surveillance in those areas that are not now surveilled. The **Appendix** to this paper shows the Piarco FIR detailing the continental airspace inclusive of the South Sector.

## 2. Discussion

2.1 Surveillance in the Piarco FIR is primarily provided through radar. In the continental airspace radars are located in Trinidad, Barbados, Guadeloupe and Martinique. Antigua's radar, at the time of writing this paper, is unavailable. The objective of the ADS-B project in the continental airspace of the Piarco Flight Information Region (FIR) and Wide Area Multilateration in the South Sector is to establish an enhanced surveillance environment for the Piarco FIR.

2.2 ICAO's Technical Co-operation Programme provides advice and assistance in the development and implementation of projects across the full spectrum of civil aviation aimed at the safety, security, environmental protection and sustainable development of national and international civil aviation. The Programme is conducted under the broad policy guidance of the ICAO Assembly and of the Council. Subject to general guidance by the Secretary General, the Technical Co-operation Programme is executed by the Technical Co-operation Bureau (TCB).

2.3 In August 2018 the TTCAA engaged ICAO TCB for the ADS-B/WAM project for the continental airspace of the Piarco FIR.

2.4 The E/CAR AFS Network shall be the medium of transport from the airports to Piarco. The Piarco ACC shall be repository for all the ADS-B/WAM data processing where the data will be integrated into the Piarco ATM System and the Multi Radar Tracker (MRT). The combined data from all available surveillance sources will be available over the E/CAR AFS Network for distribution to the E/CAR States.

2.4 An implementation schedule with a completion date is not available at this time but it is envisaged that the project will be completed in 2019.

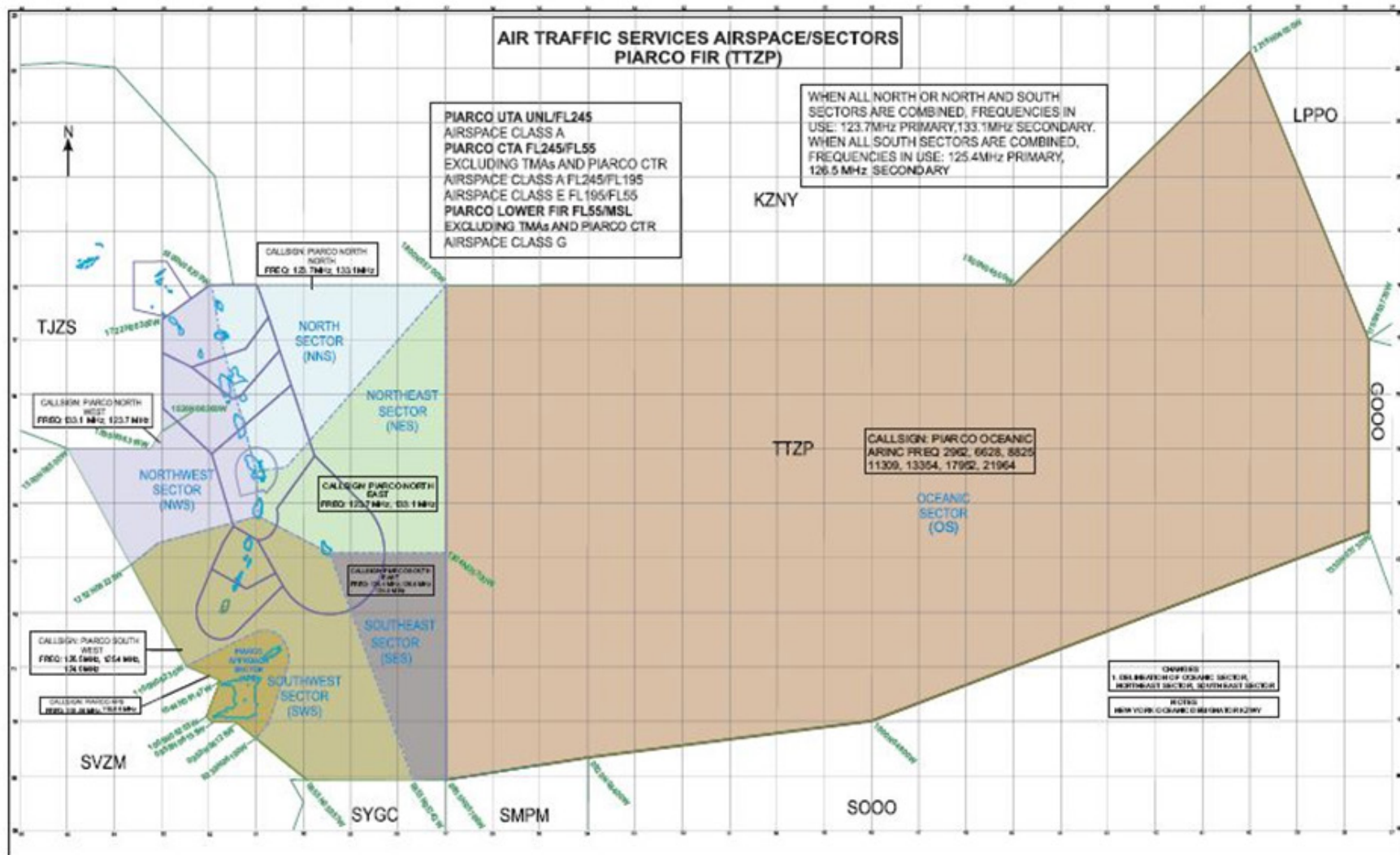
**3. Suggested actions**

3.1 The meeting is invited to:

- a) Take note of the information provided; and
- b) Agree to any other actions as deemed appropriate.

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ATTACHMENT A TO AIRAC AIP SUP 04/16



APPENDIX

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— END —