



ICAO

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**Automatic Dependent Surveillance – Broadcast OUT Implementation Meeting for the
NAM/CAR Regions (ADS-B/OUT/M)
Ottawa, Canada, 21-23 August 2019**

**Agenda Item 4: Satellite ADS-B Implementation
4.1 Use of Satellite ADS-B service in CAR region**

OVERVIEW OF THE FAA’S OPERATIONAL EVALUATION OF SPACE-BASED ADS-B IN THE CARIBBEAN

(Presented by the United States)

EXECUTIVE SUMMARY	
This Information Paper presents an overview of the Federal Aviation Administration’s (FAA’s) planned Operational Evaluation of Space-Based ADS-B (SBA) in the Caribbean. The Operational Evaluation will occur over a one (1) year period beginning in March 2020 in order to assess impact to Air Traffic operations, SBA technical system performance, and operational benefits from use of SBA within the target airspace.	
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety• Air Navigation Capacity and Efficiency• Environmental Protection
<i>References:</i>	<ul style="list-style-type: none">• Automatic Dependent Surveillance – Broadcast (ADS-B) Implementation and Regulation Meeting for the NAM/CAR/SAM Regions (ADS-B/LEG), Mexico City, Mexico, 26-30 November 2018.

1 Introduction

1.1 Enhancing surveillance in oceanic airspace can provide improvements to air navigation services by reducing separation minima for optimum routing, depending on the communications and navigation services available in the airspace.

1.2 The FAA believes that Space-Based ADS-B (SBA) holds promise as an enhanced surveillance capability. To date, the FAA has supported the development and maturation of the technology by developing proposed service performance requirements and by modifying oceanic automation to accept SBA data. The FAA is now implementing a phased approach that will address technical, operational and safety issues pertinent to a potential long-term investment in SBA.

2 Discussion

2.1 In the near term, the FAA will conduct an Operational Assessment of SBA that will allow the FAA to assess system performance in an operational environment. Such an assessment will allow the FAA to better forecast the long-term applications of SBA across a broader range of operational environments.

2.2 The FAA has identified Miami ARTCC (ZMA) offshore airspace as the initial evaluation site for the provision of en route surveillance and separation services using En Route Automation Modernization (ERAM). ZMA offshore oceanic air traffic is monitored and controlled using instantaneous push-to-talk voice VHF/UHF communication and radar surveillance feeding ERAM.

2.3 ADS-B surveillance coverage in ZMA is currently limited to airspace that can be covered by ground stations located on the Florida peninsula and Puerto Rico. There is a broad expanse of airspace in the corridor between these areas where existing ADS-B terrestrial coverage is unavailable and where existing surveillance sources have reliability/resilience issues.

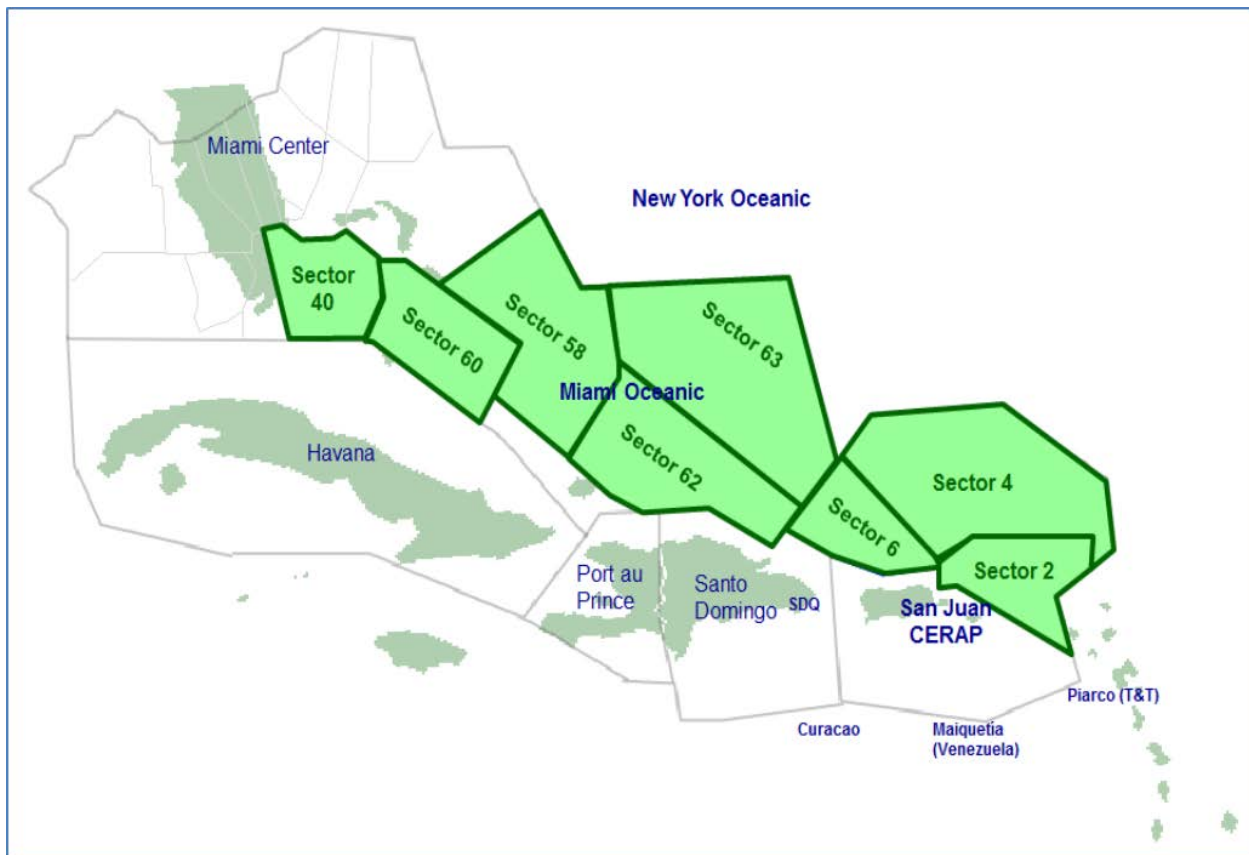


Figure 1: Caribbean Airspace Sectors

2.4 The radar site at Grand Turk, British West Indies (GDT) is a single point of failure which can impact Sectors 62 and 63 due to the lack of terrestrial ADS-B surveillance coverage. Figure 2 below illustrates the surveillance gap created by an outage at GDT.

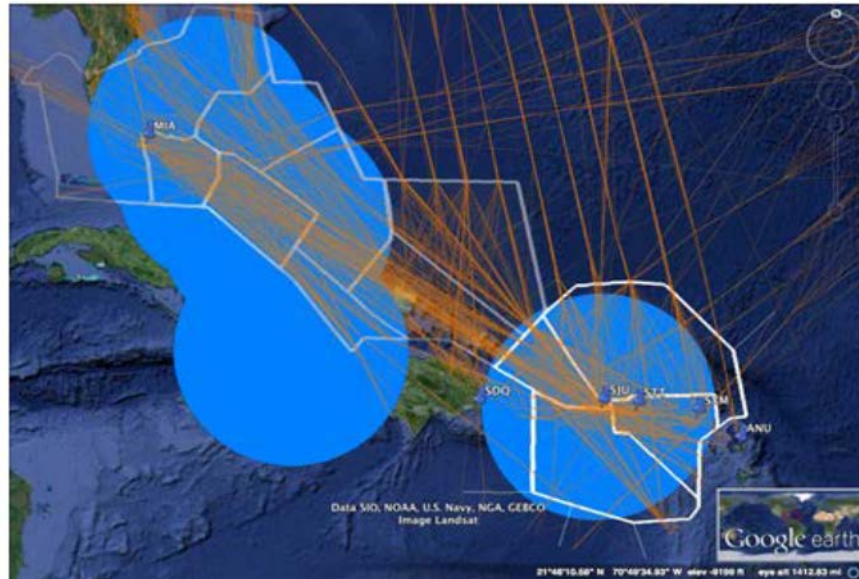


Figure 2: Grand Turk Surveillance Gap

2.5 The FAA will use the Operational Evaluation to evaluate SBA performance in mitigating impacts of GDT radar outages; augmenting existing terrestrial ADS-B coverage; and enabling potential route structure optimization.

2.6 The Operational Evaluation period will occur over a one (1) year period beginning in March 2020. Areas to be assessed during the Operational Evaluation include the impact to Air Traffic operations, SBA technical system performance, and operational benefits. The findings from this Operational Evaluation will be used to identify potential ATC automation changes and opportunities for continued use of SBA in the Caribbean and/or SBA expansion to other geographic areas.

3 Conclusion

3.1 The meeting is invited to note the information contained in this paper.