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**Fourth NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/4)**  
Miami, United States, 21 - 24 August 2018

**Agenda Item 3: Global and Regional Air Navigation Plans**

**AUTOMATIC DEPENDENT SURVEILLANCE – BROADCAST (ADS-B) OUT:  
EQUIPAGE DATA FOR STATES IN THE REGION**

(Presented by the United States)

**EXECUTIVE SUMMARY**

The FAA monitors all ADS-B information that is received in airspace covered by FAA-contracted ADS-B ground stations, including 3 radio stations in Mexico. This paper provides information on ADS-B equipage detected by the FAA monitoring system.

<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li></ul>
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**1 Introduction**

1.1 As part of the FAA's implementation of ADS-B services in U.S.-managed airspace, FAA has established an ADS-B Avionics Performance Monitoring (APM) system. This system receives all airborne ADS-B reports within the coverage of the FAA-contracted system, which includes ground stations in all U.S. States and the territories of Puerto Rico and Guam/Saipan. Further, via a cooperative project between FAA and *Servicios a la Navegación en el Espacio Aéreo Mexicano* (SENEAM), the FAA's ADS-B service contractor has three (3) ADS-B radio sites in Mexico, at Tampico, Merida and Cancun airports.

1.2 The FAA uses "Link Version" as a convenient way to discuss the various standards in use for ADS-B Out across the two ADS-B links used by the FAA. Note that the FAA ADS-B mandate (14 CFR 91.225) requires Link Version 2.

Link Version	1090ES	978 MHz (UAT)
0	RTCA DO-260	RTCA DO-282
1	RTCA DO-260A	RTCA DO-282A
2	RTCA DO-260B	RTCA DO-282B

1.3 The FAA's APM allows ADS-B equipage by ADS-B Link Version to be extracted from the data received. This data shows the number of unique ICAO addresses received by the system during a rolling one-year period. If an ICAO address was last received more than a year ago, it is not included in the equipage data. Where the APM receives data over a year indicating more than one Link Version, the highest Link Version is reported.

## 2. Discussion

2.1 FAA performed an analysis of ICAO codes detected during the year ending 13 July 2018 and within coverage of FAA-contracted ADS-B ground stations. This analysis shows the State of Registry of the aircraft, and may not correlate with the State of the operator in all cases. For example, some aircraft operated by Aeromexico and Avianca, but registered in the U.S., are not included in this analysis. This analysis includes ICAO codes correlating with all of the North American, Central American and Caribbean Regional Office (NACC) Member States. It does not include the 19 Territories in the NACC region, as unique ICAO code blocks are not associated with these territories.

2.3 During the analysis, it was observed that some aircraft equipped with Link Version 2 and with ICAO codes in the blocks belonging to Canada and Mexico were using the UAT link, either by itself or in combination with a 1090ES ADS-B Out system. Therefore, the results for Canada and Mexico were broken out by Link technology as well as Link Version.

2.4 The results of the analysis are shown below; in each column, the number of ICAO codes per Link Version per country block is shown. It is gratifying to see the high percentage of Link Version 2 equipage in this data.

ICAO Code Country Block	ADS-B Out		
	Version 0	Version 1	Version 2
Bahamas	5	0	19
Barbados	0	0	2
Belize	0	0	3
Costa Rica	0	0	4
Cuba	1	0	0
El Salvador	0	2	3
Guatemala	0	1	14
Haiti	0	0	1
Dominican Republic	0	1	4
Trinidad and Tobago	7	0	6
Antigua and Barbuda	10	0	0
Mexico	99	55	297
1090	99	55	291
UAT & 1090 (Dual Out)	0	0	2
UAT	0	0	4
Canada	270	80	1604
1090	270	79	1562
UAT & 1090	0	0	10
UAT	0	1	32

3.1 **Conclusion**

3.1 Most aircraft flying in airspace covered by FAA-contracted ADS-B ground stations and having ICAO codes associated with a NACC State (other than the U.S.) are equipped with DO-260B.

4. **Suggested action**

4.1 The Meeting is invited to:

- a) take note of the information provided.