



International Civil Aviation Organization

NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE

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Saint Vincent and the Grenadines, 9 to 13 May 2005

29 E/CAR WG – WP/13

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Agenda Item 3

Specific Air Navigation Activities and Developments

3.6 Communications, Navigation and Surveillance (CNS)

CONNECTION BETWEEN E/CAR NETWORK AND FAA AFTN AND VOICE CIRCUITS

(Presented by the United States)

SUMMARY

This Working Paper provides a status of the chronic telecommunications problem occurring on the E/CAR/US AFTN and voice circuits.

1. Introduction

1.1 Connections between the Eastern Caribbean (E/CAR) Network and US/FAA San Juan CERAP were implemented by way of two - 64kbps circuits, one circuit between San Juan CERAP and Antigua, and the other between San Juan CERAP and Piarco, Port of Spain. The two circuits provide diverse paths with alt-route capabilities to prevent interruption of critical Air Traffic Control (ATC) information exchange in case of a failure of either circuit. These circuits carry both voice and Aeronautical Fixed Telecommunications Network (AFTN) data. The bandwidth requirements were close to exceeding 64 Kbps and were recently upgraded to 128 Kbps. These 128kbps circuits developed have had chronic problem in on AFTN channels since October 2004.

2. Discussion

2.1 The lines were tested between October 2004 and January 31, 2005 by several of the telecommunications providers, Telecommunication Services of Trinidad and Tobago (TSTT), E/CAR system provider, United States (US) Federal Aviation Administration (FAA) Bandwidth Manager (BWM), and FAA National Airspace Data Interchange Network (NADIN). Testing indicated that the problem was intermittent affecting the San Juan to Piarco circuit more consistently therefore making it difficult to identify the problem.

2.2 Following are highlights of the testing:

- a) Defective voice cards in the FAA BWM at San Juan CERAP, problems with the MCI Digital Access, and Cross-connect System (DACS). Repair of these problems helped but did not resolve the chronic intermittent circuit failures.
- b) Piarco AFTN switch was tested with positive results.

- c) TSTT and SIGMA were unable to identify the cause of the problem in their areas indicating that the problem was north of San Juan.
- d) FAA BWM, NADIN Program Office, CERAP and NNCC technicians were also unable to identify the problem indicating that the problem was south of San Juan.
- e) MCI identified a hardware problem on the original bearer channels moved the channels to a different path, replacing the hardware and moving back to the original bearer channel.
- f) PRTC discovered a problem on the T1 between MCI and the CERAP; both channels between the FAA CERAP and MCI were on the same T1.
- g) The data and voice communications was monitored on the Antigua circuit while a telecommunications stress test was run on the Port of Spain circuit. The result of the 4 hour stress test was 0 errors. Due to the 2 channels being on the same T1 between the CERAP and MCI it was decided that the stress test of the Antigua circuit would be deferred until the channels between MCI and the CERAP are placed on separate T1's. At that time a review of the circuit's latest trouble history and/or monitoring of the circuit will be used to determine if the stress test is required.

3. Conclusion

3.1 Testing indicated that the circuit outages were caused by multiple hardware problems. A 4 hour stress test of the circuit with 0 errors indicates that the telecommunications circuit is now reliable.

4. Suggested Action

4.1 The following actions are recommended:

- a) FAA CERAP coordinates with PRTC and MCI to move the Antigua circuit to a different T-1.
- b) FAA and TSTT coordinate - if necessary - a stress test of the Antigua circuit once the implementation a separate T-1 has been completed by PRTC.

4.2 The Meeting is invited to review the above-mentioned information and provide comments accordingly.