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WORKING PAPER

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**Twenty-eighth MEVA Technical Management Group (MEVA/TMG/28)  
Miami, United States, 26 to 30 May 2014**

**Agenda Item 3 MEVA II Network Operation and Performance**

**UPDATES ON THE MEVA II NETWORK**

(Presented by United States/FAA)

<b>EXECUTIVE SUMMARY</b>	
This working paper presents an overview of the problems the circuits between the Miami and Atlanta to Santo Domingo are experiencing, and the remedial actions taken to resolve them.	
<b>Action:</b>	See section 4
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"><li>• Safety</li><li>• Air Navigation Capacity and Efficiency</li></ul>

**1. Introduction**

1.1 Since December 2013, the telecommunication services between the United States and the Dominican Republic have gradually degraded to the point of being unusable.

**2. Background**

2.1 The telecommunication links affected by the outages are 1 shout line and 1 dial voice line from Miami to Santo Domingo, and 1 AMHS circuit from Atlanta to Santo Domingo. The voice lines were initially implemented on MEVA and transitioned to MEVA II. The AMHS circuit is a recent requirement that was implemented in March 2013. From March 2013 to September 2013, the AMHS circuit was used for interoperability testing. On September 18<sup>th</sup>, the AMHS service between Atlanta and Santo Domingo was activated and live traffic started to flow through the circuit. No outages were observed until December 2013. At that time, Miami Center started to report outages on the voice lines to Santo Domingo and declared the line unusable on January 18<sup>th</sup>. 2014. Also in January, outages on the AMHS circuit were reported by Atlanta NEMC. The outages became more frequent until March 2014 when the Atlanta NEMC all-routed the AMHS traffic through the backup AISR link.

**3. Discussion**

3.1 Starting in February 2014, the FAA coordinated a series of recurring teleconferences to resolve the issues. During these teleconferences, the audience learned:

- Santo Domingo antenna was in such a bad shape that the performance of the antenna is greatly diminished.

- The Master Reference Terminal (MRT) in Miami was defective, needed to be replaced, and there was no on-site spare.
- The Alternate Master Reference Terminal (AMRT) was moved from Woodbine to Atlanta but never commissioned.
- The spare pool was depleted to the point that only 1 spare Linkway 2100 modem was available, and carried from site to site.
- It was not known when the Miami and Atlanta antennae were last peaked & poled.
- The noise floor under the 3 MEVA II carriers had been raised by interference.
- The network was operating with very little power margins.
- The availability of bandwidth on IS-14 is very limited and it would be impossible to move all 3 MEVA II carriers to another part of the bandwidth.

3.2 SES responded by performing a series of maintenance events trying to resolve all the issues and restore the services. Despite this, the problems were not resolved. The FAA organized a Troubleshooting Team to be assembled. From May 14 to May 17, personnel from the FAA, IDAC and SES were in Santo Domingo, Miami and Atlanta to monitor the services, analyse the results and troubleshoot as needed.

- The Miami and Santo Domingo antennae were re-pointed to get the maximum performance
- The MRT in Miami was replaced and the network was power balanced.
- The AMRT in Atlanta was commissioned and is now fully functional except that the switchover is not automatic.
- SES has returned several faulty Linkway modems to ViaSat for repair and refurbishment.
- The possibility of using the antenna from the spare pool (fly away antenna) as a replacement for the degraded Santo Domingo antenna is under consideration.
- IntelSat is investigating the interferences under the MEVA III carriers. The possibility of adding a 4th carrier and reducing the FEC to ½ is under consideration.

3.3 As of 22 May, the voice services between Miami and Santo Domingo have been outage free for 72 hours but Miami Center has not yet declared them operational, the AMHS service between Atlanta and Santo Domingo still experiences infrequent short outages and AMHS traffic is still all-routed through AISR.

#### **4. Conclusion**

4.1 The Meeting is invited to:

- a) take note of the information presented in this working paper;
- b) review any impact these actions might have on MEVA III transition and implementation; and
- c) participate in the MEVA II Monthly teleconference