

1.0 Introduction

1.1 Purpose

The purpose of this procedure is to define, classify and list actions to be taken for different types of outages associated with MEVA II services, and, to provide guidance for interim services until MEVA II service(s) can be restored.

Note: This document should be read in accordance with the current SES World Skies U.S. Government Solutions (SES USG) MEVA II Preventive and Corrective Maintenance Plan and contracted service level agreements.

2.0 Classifications

2.1 Catastrophic Failures

Categorized as:

- a. Satellite Failure – Complete loss of IS-14
- b. Transponder Failure – Failure of current IS-14 MEVA II Transponder
- c. Hub Failure – Failure of Primary Hub in Miami
- d. Multi-site antenna loss – Loss of more than one (1) antenna at any given time

2.1.1 Satellite Failure

Upon IS-14 satellite failure SES USG will follow INTELSAT RESTORATION PROCESS FLOWCHART IN THE EVENT OF SATELLITE FAILURE procedure. Found in Appendix A.

2.1.2 Transponder Failure

Upon IS-14 transponder failure SES USG will follow INTELSAT RESTORATION PROCESS FLOWCHART IN THE EVENT OF SATELLITE FAILURE procedure. Found in Appendix A.

2.1.3 Hub Failure

Individual component hub failures will be replaced as per SES USG standard, corrective maintenance procedures. NOTE: The transmit and receive components on the Miami antenna are redundant. If one (1) component should fail the system will automatically switch to the backup thereby restoring service. The repair/replacement of the failed component then becomes classified as a minor failure.

In the event of loss of hub antenna, the AMRT in Woodbine, Maryland would automatically provide network timing to keep the network in service.

Individual voice and data circuits in Miami would be restored in the following manner:

- a) The FAA Contingency Antenna would be shipped to the Miami ARTCC and installed by SES USG technicians.
- b) The SES USG technicians would run temporary lines into the building (if necessary) and connect to baseband equipment.
- c) SES USG would turn up Miami Voice and Data circuits on the temporary antenna until permanent antenna can be replaced.
- d) Estimated time to restoration on temporary antenna: 72 hours

2.1.4 Multi-site Antenna Loss

- a) In the unlikely event of multiple catastrophic antenna failures at the same time, Contingency Antenna coordination will be done through ICAO and the TMG coordinator to determine priority based on volume of flights in ATC operation of the individual State, once contact has been made with SES USG NOC by the affected States.
- b) The receiving State is responsible for all costs associated with packaging, transporting, installation and return of the Contingency Antenna.
- c) Interim measures for communication until individual circuits are restored can be done in accordance with Section 2.3 of this document.
- d) A listing of available contingency antennas is provided in Appendix B.

2.2 Critical Failures

Categorized as:

- a. Site out of Network

2.2.1 Site out of Network

Individual component site failures will be replaced as per SES USG standard, corrective maintenance procedures.

In the event of loss of site antenna, coordination will be done through ICAO and the TMG coordinator to ship the contingency antenna to the affected site. SES USG will coordinate a dispatch to install and restore service under standard service rates.

Use and activation of interim circuits are discussed in Section 2.3 Major Failures.

2.3 Major Failures

Categorized as:

- a. Individual Circuit Failures: AFTN, Voice Shout-down, or Switched Voice

2.3.1 Individual Circuit Failures

Individual circuit failures will be restored as per SES USG standard, corrective maintenance procedures.

2.3.2 Interim Circuit Procedures

- a) Switched Voice Line – the site may use other existing MEVA II voice lines. In the event no other MEVA II voice lines are available the site may use commercial dial lines, cellular telephone lines, or satellite phone as an interim measure until service is restored.
- b) Voice Shout-down – this service will be unavailable until circuit restoral; therefore, the site may use existing MEVA II switched voice lines to communicate.
- c) AFTN – the site may use the FAA AIS-R Internet based system as an interim measure until MEVA II AFTN service is restored.

2.4 Minor Failures

Categorized as:

- a. Degraded but usable services (minor noise on line, secondary power supply failure)

2.4.1 Degraded but usable services

These types of failures will be restored as per SES USG standard, corrective maintenance procedures.

3.0 Hurricane Preparedness Planning

The following tips are recommended in advance of a hurricane:

- Clear any potential missile / debris hazards possible from area of antenna
- For sites with non-penetrating mounts, ensure adequate blocks are used and that they are tied together
- Check all bolts on antenna to ensure tight
- Power down all MEVA II equipment at an appropriate time
- Disconnect external power / signal cables at inside cabinet 2

The following procedures will take some level of competence on the part of the local technicians:

If projected winds are > 125mph

- Birdbath (Stow) the antenna Note the orientation of the elevation arm with a marker prior to moving
- Disconnect BUC and Power Supply, remove the units, and store inside
- Seal BUC and PS connectors with MOCAP and secure to frame with zip ties
- Cap waveguide end that was attached to the BUC and secure to the antenna frame with zip tie

Agenda Item 2: Operation and Performance of the MEVA II Network

Annual Operation and Performance

2.1 Under the P/03, MEVA Service provider SES-USGS presented the following information on the network performance:

- Network performance presented was from 2009 and 2010
- There was no maintenance done on the network equipment in 2010 due to lack of technicians.
- SES reported that maintenance for 2011 was already done on all sites except for Cuba
- Members notice that the charts presented cannot be compared to last year due to undelivered monthly reports since May 2010.
- It was noted the lack of information from MEVA/REDDIG traffic. SES indicated they do not have access to the REDDIG side.
- Aruba node presents little use of the ATS voice circuits
- Charts on transmissions show an increase in bandwidth usage for 2010
- SES indicated the first monthly action item report will be posted on the MEVA II website by 15 June 2011
- The monthly/quarterly network reports date of issuance will be indicated on the Project Plan to be posted on 3 June 2011. May 2011 report will be posted on 15 June 2011
- The availability percentage is calculated as follows: % availability = $\Sigma(\text{link availability of each node})/\text{No. of nodes}$
- SES will start hosting monthly teleconferences scheduled for the 3rd Monday of each month. The purpose of such teleconferences is to review the monthly reports, trouble tickets and any other item related to the performance of the network
- NOC operations for MEVA II started in June 2010. NOC is located in Melbourne FL at Harris facilities.
- SES-USG functional organizational chart for the MEVA Network was shown with the contact information. This presentation can be viewed at the mevaii website under TMG Reports. Also, the SES-USG website (www.ses-usg.com) provides the executive officer leading the MEVA Network Program.
- C- System is the sub-contractor for SES and is to complete implementation of NMS in their facility by 3 June 2011. This will provide C-Systems with the capability of monitoring the status of the network for a more proactive failure detection
- C- System will test available spare parts and will label them with the test date to ensure they are OK prior to shipping them to Members locations as needed.

2.2 Based on the above mentioned information the Meeting agreed on the following conclusions:

CONCLUSION TMG/22/05 – Use of ATS Voice Circuits by Aruba

In order to benefit from the operation and performance of the MEVA II Network, Aruba is urged:

- a) to review the use of their current voice circuit with Curacao to increase the use of this circuit through the MEVA Network, and
- b) inform their results during the MEVA/TMG/23 Meeting