



**ICAO**

International Civil Aviation Organization  
North American, Central American and Caribbean Office

## **THIRTY FIRST MEVA TECHNICAL MANAGEMENT GROUP MEETING**

### **MEVA/TMG/31**

### **FINAL REPORT**

**KINGSTON, JAMAICA, 24 TO 26 MAY 2016**

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## HISTORICAL

### **ii.1 Place and Date of the Meeting**

The Thirty first MEVA Technical Management Group Meeting (MEVA/TMG/31) was held at the Jamaica Pegasus Hotel in Kingston, Jamaica, from 24 to 26 May 2016.

### **ii.2 Opening Ceremony**

Mr. Julio Siu, Deputy Regional Director of the North American, Central American and Caribbean (NACC) Office of the International Civil Aviation Organization (ICAO), highlighted the meeting agenda key discussion points with the new MEVA Service Provider, the network performance, update of MEVA III operational documents and the interconnection with the REDDIG and E/CAR AFS Networks as well as the MEVA III Network as a regional collaboration example under the ICAO NACC No Country Left Behind (NCLB) Strategy. Ms. Dulce Roses, MEVA III TMG Coordinator expressed the importance of taking effective actions to complete circuit implementation and congratulated the work accomplished by the MEVA III Task Force. They both thanked the Jamaica Civil Aviation Authority (JCAA) for kindly hosting of this Meeting. Finally Mr. Nari Williams-Singh, Jamaica Civil Aviation Authority Director General and Mr. Derrick Grant, CNS Engineer, commented on the importance of the MEVA III Network in the regional air navigation infrastructure and thanked the MEVA Members for their active participation, and welcomed the participants to the MEVA/TMG/31 and officially opened the meeting.

### **ii.3 Officers of the Meeting**

Ms. Dulce Roses chaired the meeting plenary together with Mr. Julio Siu. They both served as Secretaries of the Meeting.

### **ii.4 Working Languages**

The working language of the Meeting was English and the working papers, information papers, presentations and report of the meeting were available to participants in said language.

### **ii.5 Schedule and Working Arrangements**

It was agreed that the working hours for the sessions of the meeting would be from 09:00 to 16:00 hours daily, with adequate breaks. Ad hoc meetings were held apart from the plenary to do further work on specific items of the Agenda.

## **ii.6            Agenda**

**Agenda Item 1:            Approval of Meeting Agenda, Work Method and Schedule**

**Agenda Item 2:            Review of Conclusions and Actions from Previous MEVA/TMG Meetings and from the Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/03)**

**Agenda Item 3:            Operation and Performance of the MEVA III Network**

- 3.1    New MEVA Service Provider: Frequentis AG
- 3.2    MEVA Network Operation and Performance: 05/2015-05/2016
- 3.3    Results of MEVA III 2015 Annual Maintenance visits
- 3.4    Improvements to MEVA III node performance
- 3.5    MEVA III Monitoring and Reporting

**Agenda Item 4:            Network interconnection Activities and new circuits**

- 4.1    MEVA III – REDDIG II Interconnection
- 4.2    MEVA III – Eastern Caribbean (E/CAR) Aeronautical Fixed Service (AFS) Network Interconnection
- 4.3    Requirement for new MEVA III circuits

**Agenda Item 5:            Results of the International Telecommunication Union World Radiocommunication Conference 2015 (ITU WRC-15)**

**Agenda Item 6:            Other Matters**

## **ii.7            Attendance**

The Meeting was attended by 11 States/Territories from the NAM/CAR/SAM Regions, one International Organization, and the MEVA III Service Provider, totalling 27 delegates as indicated in the list of participants.

## **ii.8            List of Conclusions**

The Meeting recorded its activities as Conclusions as follows:

**CONCLUSIONS:**            Activities approved by the MEVA Members

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The **Appendix A** presents the list of Conclusions from the MEVA/TMG/31 Meeting.

**ii.9 List of Working and Information Papers and Presentations**

*Refer to the Meeting web page:*

<http://www.icao.int/NACC/Pages/meetings-2016-mevatmg31.aspx>

**WORKING PAPERS**

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/01	1	Provisional Agenda, Work Method and Schedule of the Thirty First MEVA Technical Management Group Meeting (MEVA/TMG/31)	06/04/16	Secretariat
WP/02	2	Review of Previous Valid Conclusions	06/04/16	Secretariat
WP/03	6	MEVA III Network: example of regional cooperation	08/05/16	Secretariat
WP/04	3.4	Jamaica Experience of the MEVA III Node Performance	24/06/16	Jamaica
WP/05	6	Legacy X.25 AFTN Support	19/05/16	United States

**WORKING PAPERS**

<b>Number</b>	<b>Agenda Item</b>	<b>Title</b>	<b>Date</b>	<b>Prepared and Presented by</b>
WP/06	6	Follow-Up to the Development of the Electronic Regional Air Navigation Plan (eANP)	19/05/16	Secretariat
WP/07	4.1	MEVA III – REDDIG II Interconnection Matters	17/05/16	TMG Coordinator
WP/08	4.3	Implementation of New Services	24/05/16	Jamaica
WP/09	5	Results of the ITU World RadioCommunication Conference 2015 (WRC-15)	08/05/16	Secretariat
WP/10	6	Implementation of the ICAO NACC Regional Office No Country Left Behind (NCLB) Strategy	19/05/16	Secretariat
WP/11	4.3	Meteorological Information Exchange	19/05/16	AMHS Task Force
WP/12	4.1	Additional Circuit Path for AMHS between PIARCO (Trinidad and Tobago) and Atlanta (United States)	24/05/16	AMHS Contingency Ad Hoc Group

**INFORMATION PAPERS**

<b>Number</b>	<b>Agenda Item</b>	<b>Title</b>	<b>Date</b>	<b>Prepared and Presented by</b>
IP/01	---	List of Working, Information Papers and Presentations	19/05/16	Secretariat

**PRESENTATIONS**

<b>Number</b>	<b>Agenda Item</b>	<b>Title</b>	<b>Presented by</b>
1	3.1	Frequentis – For a safer world / Frequentis – Para un mundo más seguro	Frequentis
2	4	ATM Networks	Frequentis
3	3	ATM Networks	Frequentis
4	3.1	Points of Contact	Frequentis

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**Agenda Item 1:            Approval of Meeting Agenda, Work Method and Schedule**

1.1            Under WP/01, the Meeting approved the provisional agenda, the working method and schedule of the meeting, referring to IP/01 with the list of associated documentation. The approved meeting agenda is presented in the historical section of this report.

**Agenda Item 2:           Review of Conclusions and Actions from Previous MEVA/TMG Meetings and from the Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/03)**

2.1           Under WP/02, the Meeting reviewed the valid conclusions from the Third NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/03) related to the MEVA Network and from the Thirtieth MEVA Technical Management Group Meeting (MEVA/TMG/30) and followed-up on their progress. In summary, all the TMG conclusions were considered completed or superseded except conclusions MEVA/TMG/30/6, MEVA/TMG/30/20 and MEVA/TMG/30/23.

2.2           **Appendix B** presents the follow-up to these conclusions.

**Agenda Item 3: Operation and Performance of the MEVA III Network**

**3.1 New MEVA Service Provider: Frequentis AG**

3.1.1 Under P/01, the Meeting was informed on the commercial and financial status of the new MEVA III Service Provider, Frequentis, highlighting that:

- The insolvency of COMSOFT had been 100% taken over by FREQUENTIS, covering all the MEVA III Network obligations
- The subcontractor for MEVA III Service, NEWCOM, was bought by SpeedCast; however all operational and network service conditions remain the same

3.1.2 Under P/04, Frequentis provided its Points of Contact (PoCs) who will support the MEVA III Network operations and management, as follows:

Function/Item	Key Personnel	Name/Email/Address	Phone/Fax Number
Project Management (PM) / Operations Management (OM)	Markus Tenbeck	<a href="mailto:markus.tenbeck@frequentis.com">markus.tenbeck@frequentis.com</a>	+49 (6103) 30086 35 (Phone)
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3.1.3 The Meeting identified that Frequentis has not assigned the Quality assurance/management personnel to ensure that the service is within the Quality level and homogeneously implemented, formulating in the following conclusion:

**CONCLUSION**

**MEVA TMG/31/1 MEVA SERVICE PROVIDER- FINAL ORGANIZATION STRUCTURE**

That, in order to ensure the contractual matters in the MEVA Service Level Agreement (SLA), the MEVA Service Provider inform the MEVA Members by **30 June 2016** of the final organizational structure supporting the MEVA Service, including the Quality assurance/management personnel.

**3.2 MEVA Network Operation and Performance: 05/2015-05/2016**

3.2.1 The MEVA III Service Provider, under P/03, informed the Meeting on the MEVA network operation and performance between the periods 05/2015 to 05/2016, briefing on the implemented circuits:

- PAMA Voice (VHF): **53 circuits**
- DAMA Voice (E&M/FXS/E1): **115 circuits**
- AMHS IP (serial): **14 circuits**
  - 2 active, 2 under preparation, 10 hardware implemented (ready to use)
- AFTN (async): **6 circuits**
  - 4 sync/async (PAD)
- AFTN (sync): **28 circuits**
- Radar/Remote Radio Link (serial): **18 circuits**

3.2.2 The Meeting completed a table on the status of the contractual matters, completion of the installation matters and other activities related with the MEVA Service Provider as detailed in **Appendix C**. Similarly a detailed review of the implemented circuit was conducted (**Appendix D**), identifying several circuits that are being paid but not really used. Due to this information the Meeting agreed on the following conclusions:

**CONCLUSION**

**MEVA TMG/31/2 COMPLETION OF CONTRACTUAL MATTERS WITH THE NEW SERVICE PROVIDER**

That, in order to complete the pending contractual matters with the new MEVA III Network Service Provider, Frequentis review all the replies provided by the MEVA Members and contact the MEVA Members that have missing signature/document to be completed, reporting the MEVA Members of the completion of this process by **30 August 2016**.

## CONCLUSION

### MEVA TMG/31/3

### OPERATIONAL USE OF MEVA III CIRCUITS

That, in order to ensure the operational use of all the contracted MEVA III circuits (SDD listed), all the MEVA Members with pending circuits to be operational, perform the necessary actions (operational agreement, procedure, etc.) and report the completion of this task or its progress status to the MEVA TMG Coordinator and ICAO by **30 September 2016**.

3.2.3 The MEVA III Service Provider emphasized the results concerning compliance with the MEVA III SLA:

- Fault Reporting: 24/7 (Hotline)
- Fault Processing: 24/7 (Partner, FRQ)
- Service Time (on-site): 24/7 (Partner)
- NOC max. response time: 45 minutes (Hotline, FRQ)
- Maximum restoration time for on-site services (excluding response, travel time and spare part delivery time): 8 hours (Partner)
- MTTR: 2 hours
- Pro-active monitoring (FRQ)

3.2.4 Additionally, the MEVA III Service Provider commented on their monthly reporting, the on-going yearly local preventive maintenance that started in March 2016, the effective second level support provided (24/7 first level by Newcom), the on-site maintenance available, the successful spare part stocking and the annual participation at the TMG meetings. Similarly the Meeting was informed on:

- the CPI Block-up Converters (BUCs) replacement, where all of the BUCs were replaced twice due to hardware and software issues;
- Space-segment issues with several times interference and the change to the final carrier design QPSK
- T1's in Miami turns out to be terminated in a single DSU, resulting in problems to move into different configuration with provider
- A new hotline had been introduced with a new number for MEVA Members contact with the NOC, with a better caller identification
- the MEVA III website (<https://noc.satcom.frequentis.com/mevaweb>), that was temporary unavailable due to cyber "attacks" and resume since 12 May 2016
- the addition of a line to the network switched voice lines to comply with the ERLANG B requirement
- the inclusion in the monthly report of the network consumption connectivity diagram, which was accepted by the Meeting

3.2.5 Due to the above, the Meeting agreed on the following conclusion:

## **CONCLUSION**

### **MEVA TMG/31/4      COMPLETION OF MEVA III NODE INFRASTRUCTURE IN MIAMI**

That, in order to complete the necessary infrastructure in the MEVA III node in Miami, United States coordinate with the MEVA Service Provider to conduct the arrangement to complete the full independency of the T1 lines and report the MEVA/TMG/32 Meeting accordingly.

3.2.6            The MEVA III Service Provider reported that during this first year of operation of the MEVA III the MEVA SLA requirements were fully addressed.

3.2.7            Regarding the ticket System: Tickets accounted from April 1st 2015 to May 14th 2016 are as follows:

- 193 Tickets accounted
  - Ca. 90% Tickets resolved remotely
  - Ca. 10% needs site activity (FRQ technician)

3.2.8            The Meeting commented that with the changes in the Service Provider, the existing operational documents of the network (Maintenance Plan, NOC Plan, Contingency Plan, etc.) may need updating, and formulated the following conclusion:

## **CONCLUSION**

### **MEVA TMG/31/5      UPDATE OF OPERATIONAL DOCUMENT OF MEVA III**

That, in order to ensure that the valid operational documents are available and usable for the MEVA III operation and management, the MEVA III Service Provider and the MEVA III TF review and update this documentation by **30 September 2016** and inform the MEVA Members accordingly.

3.2.9            The Meeting was informed that Mexico is still completing its internal administrative arrangement to have the MEVA III contract signed.

## **3.3      Results of MEVA III 2015 Annual Maintenance Visits**

3.3.1            Under P/02, the MEVA III Service Provider informed that the annual maintenance programme was almost completed, providing On-the-Job Training (OJT) and conducting this maintenance based on the Protocol of activities–report. The protocols are available at MEVA webpage. The only missing Annual Maintenance Visits are: Cuba, United States (Miami), and Venezuela, which will be conducted in the first semester 2016. United States will provide additional PoCs from Venezuela to MEVA Service Provider for coordinating the annual maintenance visit. The highlights of these visits are detailed in P/02.

3.3.2            The MEVA members confirmed that the best period for the annual maintenance visits is from April to early June, prior to the hurricane season.

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### **3.4 Improvements to MEVA III Node Performance**

3.4.1 The MEVA Service Provider under P/02 informed on several improvements made for the network operation:

- a) Early 2016 sun-outage: Whole outage within expected period
- b) Monthly Report included two new features:
  - ERLANG B calculation
  - “Wheathermap” introduced
- c) The tcket System was improved with the introduction of manual ticket closing date/time

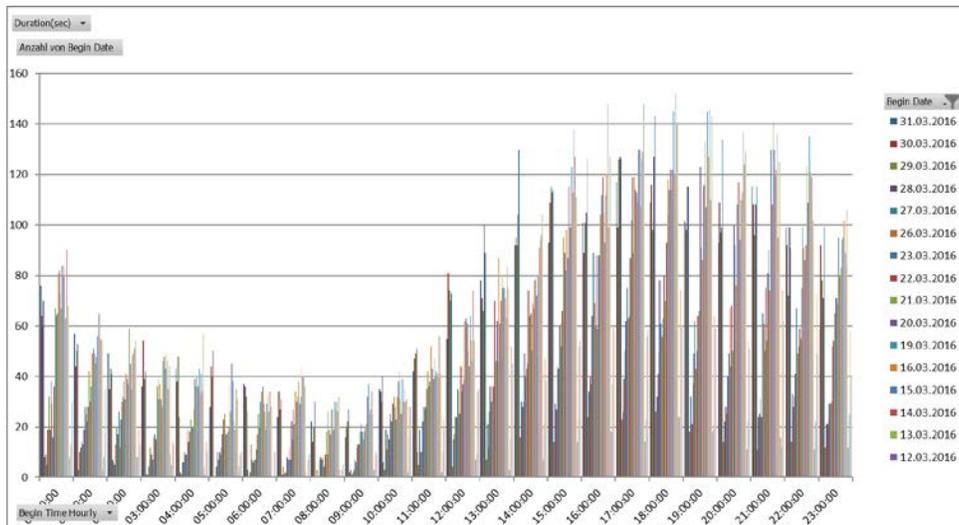
3.4.2 Cuba commented that the ticket system under the “date of reporting” is not stable; however, this problem was not observed and the MEVA Service Provider suggested reviewing the navigation explorer software being used. MEVA Members accepted the improvements as reported and thanked the Service Provider for this implementation.

3.4.3 Similarly, the MEVA Service Provider provided the Simple Network Management Protocol (SNMP) presentation given in the MEVA/TMG/30 Meeting to provide refresher and show the local monitoring capabilities that all MEVA Member may implement in their nodes. All MEVA Members are interested in this SNMP implementation, Cuba, Dominican Republic and United States had already implemented it in their nodes. The MEVA Service Provider provided Cuba the Management Information Bases (MIBs) for implementing their SNMP local monitoring.

### **3.5 MEVA III Monitoring and Reporting**

3.5.1 Under P/02, the MEVA III Service Provider provided information on the existing monitoring and reporting features provided to the MEVA Members through the monthly report, the website and the trouble ticket system, describing:

- a) SW Voice circuits:
  - April 2016: 27.464 calls
  - March 2016: 36.891 calls
  - February 2016: 38.090 calls
  - January 2016: 26.971 calls
- b) ERLANG B monitoring:



c) Space Segment:

- Frequentis has implemented a IP capable spectrum analyser to monitor space-segment for the NOC services including an automatic alarm generation when carrier degrades



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**Agenda Item 4: Network interconnection Activities and new circuits**

**4.1 MEVA III – REDDIG II Interconnection**

4.1.1 Under P/02, the MEVA Service Provider commented that there has been a good relationship established between the MEVA III Project Management and the REDDIG II Project Management, with all work questions/coordinations performed in harmony. The evaluation of the performance of the current circuits implemented in the MEVA III-REDDIG II Interconnection was provided by Frequentis as follows:

- a) Circuits in Colombia:
  - Voice circuits: No notable outages
  - PAD circuits: problems with the circuits locking in one direction (sync), temporarily resolved by Control mechanism PAD (every packet needs to be acknowledged) – no “autoreset” function available – manual intervention by FRQ NOC needed
    - Brazil (Manaus) successfully tested (March 9<sup>th</sup> 2016), but not operational. Brazil to report
  
- b) Circuits in Venezuela:
  - Station: Faced several power outages in the last two months
    - No feedback from customer on requests
  - Voice circuits: No notable outages
    - FXS Interface in Venezuela – signaling dropped
  - PAD circuits: problems with the circuits locking in one direction (sync), temporarily resolved by Control mechanism PAD (every packet needs to be acknowledged) – no “autoreset” function available – manual intervention by FRQ NOC needed
    - Lima AFTN circuit: operational
  
- c) Circuit in COCESNA/Honduras:
  - Station: Many CRC errors seen – no effect on data/voice availability. BUC identified as root cause. BUC replaced in April 2016 – no more CRC errors seen
    - REDDIG II complaining RX signal degradation from time to time. Problem not measurable/seen at MEVA SkyWAN. REDDIG going to test further (lot of local WIFI interference possible on REDDIG frequency channel)
  - Voice circuits: No notable outages
  - Data circuits: No notable outages

4.1.2 Under WP/07, the Meeting recalled the adoption of the Memorandum of Understanding (MoU) between States/Territories/International Organizations members of MEVA III and REDDIG II project organization for the coordination and cooperation process for the MEVA III-REDDIG II interconnection network during the MEVA/TMG/30 Meeting, held in Oranjestad, Aruba in 2015.

4.1.3 Similarly, the Meeting was reminded of the future MEVA III/REDDIG II interconnections requirements as shown below:

NO	Circuit requirement	Implementation estimate
1	Radar Data sharing between Curacao-Venezuela (1 radar data circuit)	Prior to 2017
2	Radar Data sharing between Colombia - Panama	By mid 2016
3	SAM AMHS circuit implementation with Atlanta <ul style="list-style-type: none"> <li>• Caracas - Atlanta</li> <li>• Brasilia - Atlanta</li> <li>• Lima - Atlanta</li> <li>• Bogotá – Panama</li> </ul>	2016-2017
4	AMHS circuit Atlanta- PIARCO-- planned thru COCESNA REDDIG	2016
5	AFTN Data circuit PIARCO- Curacao	After June 19 2015

**Table 1 - Proposed new circuits**

4.1.4 The Meeting followed-up the implementation of these requirements as follows:

- a) The circuit for Radar Data sharing between Curaçao – Venezuela has not been explored, even through several teleconferences that had been conducted in December 2015, concluding that the Maiquetia Area Control Centre (ACC) system was to be updated to increase its capabilities for radar processing. In conclusion, this requirement was valid but not started awaiting Venezuela’s updates on radar data processing
- b) The circuits for radar data sharing and Aeronautical Message Handling System (AMHS) between Colombia–Panama are still valid. Colombia and Panama are starting the discussion for the operational matters for radar exchange and AMHS.
- c) For the SAM AMHS circuits, United States informed that work for the implementation of the line Brasil-Atlanta continues. Moreover, coordination with Panama, Peru and Venezuela for the testing and implementation of AMHS was initiated. The first action is a ratification of a bilateral Technical Letter between States identifying agreement and necessary steps that must be completed prior to implementation.

4.1.5 Regarding the PIARCO-Atlanta AMHS circuit and the Aeronautical Fixed Telecommunication Network (AFTN) Curaçao-PIARCO Data Circuit, under WP/12, Trinidad and Tobago informed on the possible solutions for these circuits achieved by the Ad hoc Group comprised by Curaçao, Trinidad and Tobago, MEVA TMG Coordinator, COCESNA, Frequentis and ICAO:

- a) The technical solutions identified for the PIARCO-Atlanta AMHS contingency circuit path were:
  - i. MEVA–REDDIG interconnection in COCESNA for a circuit between PIARCO and Atlanta. COCESNA only serves as a bridge to complete this circuit.
  - ii. MEVA–REDDIG interconnection in COCESNA. COCESNA serves to combine PIARCO’s traffic and switch the PIARCO traffic to Atlanta (no dedicated circuit path for Trinidad and Tobago between COCESNA and Atlanta).
- b) The original AFTN data circuit Curaçao-PIARCO is intended for complying with the AIM Contingency agreement established between Curaçao and PIARCO, commenting that the primary objective of the Aeronautical Information Management (AIM) Contingency Plan (ACP) implementation is to enable the participating States to continue operation in the event of

primary site failure. However, another option presented for further consideration and separate from the ACP is the possibility of sending the AMHS traffic from PIARCO to Curaçao to be switched by Curaçao to Atlanta. Finally, Trinidad and Tobago commented that the data flow shall be the connection of the two AIM Systems of Curaçao and Trinidad and Tobago to work continuously for the ACP. The Meeting then considered that this interconnectivity of the systems at the LAN level will require several Mbits and a separate Virtual Private Network (VPN) through a dedicated link shall be the most appropriate solution. In this regard the requirement of the AFTN Data Circuit was discarded.

4.1.6 Based on the above mentioned information, the Meeting agreed on the following conclusion:

**CONCLUSION**

**MEVA TMG/31/6 FOLLOWUP TO IMPLEMENTATION OF MEVA III – REDDIG II INTERCONNECTION CIRCUIT REQUIREMENTS**

That, in order to conduct a follow-up of the MEVA III- REDDIG II Interconnection circuits requirements,

- a) MEVA Service Provider resolve the problems identified in the PAD equipment;
- b) Curaçao, Panama and United States continue the operational/technical coordination with Colombia, Venezuela and the respective SAM States for the implementation of the radar data sharing and AMHS circuits;
- c) Trinidad and Tobago and COCESNA follow-up on the cost/technical aspects for deciding the best solution for the implementation of the PIARCO-Atlanta AMHS circuit, including Letter of agreement updates as needed; and
- d) the progress and updates to this implementation be reported to the MEVA/TMG/32, applying the MEVA III additional circuit process.

**4.2 MEVA III – Eastern Caribbean (E/CAR) Aeronautical Fixed Service (AFS) Network Interconnection**

4.2.1 The Meeting recalled the circuit requirements in the interconnection of MEVA III– Eastern Caribbean (E/CAR) Aeronautical Fixed Service (AFS) as follows:

	<b>ATS Units</b>	<b>Technical details</b>
<b>SINT MAARTEN/ JULIANA APP</b>	Anguilla (Clayton J. Lloyd International)	2 PBX service from ECAR-analogue voice line
	Antigua (V. C. Bird APP)	1 PBX service from ECAR-analogue voice line
	Saint Kitts (Robert L. Bradshaw TWR)	1 PBX service from ECAR-analogue voice line
	San Juan ACC/PIARCO ACC	1 Serial line, RS232, radar circuit

**Table 2** – Only one radar line is shown in this table referring specifically to the Sint Maarten – PIARCO Radar. The other radar line not listed is within MEVA: Sint Maarten- San Juan radar circuit.

4.2.2 The MEVA Service Provider, under P/02, informed that two radar data circuits have been HW provided in Sint Maarten and one of the circuits has the service habilitated. Four voice circuits (PBX Service circuits) were implemented and operational; however the following issues in the E/CAR voice lines were commented:

- High delay complain: MEVA circuits measured OK/Problems to get feedback from the E/CAR/Anguilla not reachable
- MEVA circuits measured OK/Problems to get feedback from the E/CAR

4.2.3 The Meeting recognized that a formal troubleshooting management and coordination procedure has not been developed for the E/CAR AFS-MEVA III Network Interconnection. In this regard the following conclusions were agreed:

#### **CONCLUSION**

##### **MEVA TMG/31/7 E/CAR AFS - MEVA III NETWORK INTERCONNECTION TROUBLESHOOTING MANAGEMENT AND COORDINATION PROCEDURE**

That, in order to improve the coordination and management actions for trouble shooting failures involving the interconnection of E/CAR AFS and MEVA III Network, the MEVA III TF, the MEVA Service Provider and the ECAR NTG Rapporteur develop by **30 July 2016**, a draft Troubleshooting management and coordination procedure for approval of the MEVA Members and the E/CAR AFS Members.

#### **CONCLUSION**

##### **MEVA TMG/31/8 IMPROVEMENT TO OPERATION OF ORAL VOICE CIRCUITS OF THE E/CAR AFS - MEVA III NETWORK INTERCONNECTION**

That, in order to improve the operation, resolve the delays and echoes in the existing voice circuits of this interconnection

- a) MEVA Service Provider assist in the testing and solution of the echoes and delays reported in the oral voice circuits by **30 June 2016**; and
- b) the E/CAR NTG ensure a Point of Contact for maintenance and operation of circuits matters by **30 May 2016**.

#### **4.3 Requirement for New MEVA III Circuits**

4.3.1 Under WP/08, Jamaica informed of its need for an AMHS circuit that will replace the AFTN Data line of Jamaica-Atlanta. The MEVA III Service Provider also informed of the request from British Virgin Islands to have a MEVA III Station, and the new circuits collected from the MEVA Members under P/02:

- AMHS 64k Atlanta <> COCESNA: Offer under preparation
- AMHS 64k Atlanta <> Panama: Offer under preparation

4.3.2 From the Meeting discussion, the following new circuits or circuit changes were collected:

Existing/ new	Data/ Voice	Circuit description	Expected date implementation	remarks
new	Data	AMHS Jamaica- Atlanta	May 2017	Full coordination to be made for AMHS implementation/ replacement of existing AFTN line
new	Data	Radar Jamaica- COCESNA (Honduras)	TBD	Planning phase
new	Data	Radar Jamaica- COCESNA (Cayman Is)	TBD	Planning phase
existing	Data	AFTN line Jamaica-Atlanta for AIDC traffic	TBD	Planning- study phase
new	Data	AMHS Haiti- Atlanta	TBD	AMHS implementation in planning/ replacement of existing AFTN line
New	Data	Radar Haiti- Dom Rem	TBD	Planning phase
New	Data	Radar Haiti- Cuba	TBD	Planning phase
new	voice	VSD line Miami (Houston)-Cuba	TBD	Planning phase
new	voice	VSD line Miami (Houston)-Cuba	TBD	Planning phase
new	voice	2 SW lines in Curaçao	TBD	To be analyzed considering VSD lines are pending to be implemented
new	Data	AMHS Aruba- Atlanta	TBD	AMHS implementation in planning/ replacement of existing AFTN line
New	Data	AMHS Panamá –Atlanta	TBD	Planning phase
New	Data	AMHS Panamá - Colombia	TBD	Planning phase

Table 3 – New Circuits

4.3.3 The Meeting highlighted that all MEVA Members, when requiring a new circuit need to follow the “MEVA III Additional circuit” procedure, including the interconnection circuits. Similarly, the Meeting recognized that an agreement for the migration of AFTN lines to AMHS lines need to be developed. In this regard the following conclusions were agreed:

**CONCLUSION**

**MEVA TMG/31/9**

**ACTION PLAN AND AGREEMENT FOR MIGRATION OF AFTN LINES TO AMHS LINES**

That, in order to optimize the cost and use of the network bandwidth, without violating the original contracts of the network, for those Members that are requesting that existing AFTN lines to migrate to AMHS circuits, the MEVA III TF develop a draft Action Plan and Agreement to allow this migration by **30 September 2016**.

## CONCLUSION

### MEVA TMG/31/10 IMPLEMENTATION OF NEW MEVA III CIRCUITS

That, in order to ensure the operational need and a realistic date for the implementation of the new circuits listed in Table 3, the MEVA Members involved in the new circuits:

- a) evaluate these needs with their corresponding operational counterparts;
- b) apply the “MEVA III Additional circuit” procedure; and
- c) inform the MEVA/TMG/32 Meeting.

4.3.4 Under WP/11, the ANI/WG AMHS Task Force described the activities for Extensible Markup Language (XML) Testing over AMHS, recalling CAR/SAM Planning and Implementation Regional Group (GREPECAS) Conclusion to form a working group of Brazil, Dominican Republic, United States to prepare a strategy to ensure operational use of AMHS for the exchange of Operational Meteorological (OPMET) data formatted in accordance with a globally-interoperable information exchange model, use XML/Geography Markup Language (GML), and be accompanied by the appropriate metadata.

4.3.5 The Meeting was informed that States should consider participation in AMHS testing for XML MET exchange in two phases:

- Phase 1 – a compatibility test, to see if AMHS can accept the new XML message formats
- Phase 2 – to test the ability of the AMHS to accept realistic messages and volumes

4.3.6 It was informed that since 2010 United States has had activities with international partners to perform validation and problem isolation using XML data in an AFTN/AMHS environment. Initially using ‘canned’ WXXM data ‘pasted’ into the AMHS Basic Services’ Message-Transfer-Body-Parts (MTBP), data was exchanged with AMHS directly between States, and subsequently via a third ‘transit’ State. For the last testing, in 2015, XML data generated by the Singapore MET system was exchanged with the FAA via the United Kingdom AMHS system. The conclusions from these testing were as follows:

- a) AMHS provides a suitable platform for transmission of XML data
- b) AFTN has limitations, and requires an understanding of specific systems involved:  
AFTN systems used for disseminating XML-encoded data should support the full IA-5 character set, in order to avoid the rejection of some characters. AFTN systems must be capable of configuration for line length > 69 chars. AFTN messages have a size limitation of 1800 characters.
- c) if using AMHS for XML data, States should consider any likely transit through an AFTN system
- d) recommendation that mandatory compression of data to be transferred occur in the MET domain and not be a function of AMHS.

4.3.7 Based on the above, the AMHS TF recommends the activities that can be achieved by Member States without MET involvement; a parallel effort of co-operating MET partners is required to complete the required objectives and suggested ICAO/ANI/WG to form a parallel Task Force of co-

operating Meteorological partners prepared to engage in the exchange and validation of XML-encoded MET information using AMHS.

4.3.8 The Meeting took note of the information on the MET XML in AMHS and designated the MEVA TMG Coordinator to inform the MEVA Members of any MEVA Network circuit or capability needed for these evaluations.

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**Agenda Item 5: Results of the International Telecommunication Union World Radiocommunication Conference 2015 (ITU WRC-15)**

5.1 Under WP/09, the Secretariat informed of the positive results from the World Radio Communication Conference 2015 (WRC-2015) held from 2 to 27 November 2015 in Geneva, Switzerland; regarding ICAO position, highlighting the lessons learned and future actions by the NAM/CAR Regions States to continue the protection of the radiofrequency spectrum.

5.2 The Meeting was recalled the supporting resolutions and agreements made for the Protection and optimum use of the aeronautical frequency spectrum; emphasizing the major factors contributing to this achievement of positive results (Appendix of WP/09):

- a) the early development and dissemination of the draft ICAO Position by the Secretariat (Regional Offices) and the Commission;
- b) the active participation by ICAO experts in the preparatory work of the ITU, including the relevant meetings of the ITU-R;
- c) the active participation by ICAO experts in meetings of the regional telecommunication organizations (like CITELE);
- d) the organization of Aeronautical Communications Panel (ACP) and Frequency Spectrum Management Panel (FSMP) working group meetings and ICAO radio frequency workshops;
- e) the implementation of Assembly Resolution A38-6; and
- f) the active participation of the ICAO delegation at the conference itself.

5.3 The results of the WRC 2015 were presented to the ANI/WG/3 Meeting, where total support was expressed by the States. In support to the positive results of the conference for ICAO position, the ANI/WG Meeting agreed and supported the following:

- keeping the State Points of Contact (PoCs) list in support of the ICAO WRC Position for coordination and mutual support
- keeping the Regional Frequency Assignment List available for States and general public: ICAO Website: <http://www.icao.int/NACC/Pages/frequency.aspx>

5.4 In this regard the Meeting accepted to follow the ANI/WG/3 Meeting discussions:

- concerning the C band Very Small Aperture Terminal (VSAT) Air Navigation Networks, like MEVA and CAMSAT (COCESNA), MEVA and COCESNA had been informed previously about the studies for C-band protection; and all aeronautical VSAT interference cases were reported to the MEVA TMG, including recording and documenting each case (refer to MEVA/TMG/26 Conclusion 26/21 - *REVIEW AND AGREEMENT ON ACTIONS TO FOLLOW-UP ON AN-CONF/12 RECOMMENDATION 1/14 AND RECOMMENDATIONS FROM THE REGIONAL PREPARATORY WORKSHOP FOR ITU WRC-15*).

- the States emphasized to ensure the proper register of their corresponding nodes in the ITU Master International Frequency Register (MIFR), as to identify and recognise the nodes and magnitude of the networks in use for safety reasons in air navigation. Finally, this matter was considered as urgent to ensure the international recognition of the air navigation C Band networks; thus formulating Conclusion ANI/WG/3/3 - *PROTECTION AND RECOGNITION OF C BAND SPECTRUM USAGE* (referred to in WP/02).

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**Agenda Item 6: Other Matters**

6.1 Under WP/10, the Meeting was recalled of the main goal of the ICAO NACC No Country Left Behind (NCLB) strategy to ensure that Standards and Recommended Practices (SARPs) implementation is better harmonized so that States can meet their ICAO obligations as signatory members to the Chicago Convention. This will enhance aviation safety and security and support Member States to have access to the significant socio-economic benefits of safe and reliable air transport system.

6.2 ICAO highlighted the first year performance evaluation of the implementation of the ICAO NCLB Strategy developed by the ICAO NACC Regional Office, which has been presented to the Sixth Meeting of the North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/06) in Nassau, Bahamas; emphasizing that the NACC NCLB Strategy:

- a) takes into account the *Port-of-Spain Declaration* commitments and incorporates them into the Strategy
- b) promotes efforts to resolve Significant Safety Concerns (SSCs) identified through the ICAO Universal Safety Oversight Audit Programme-Continuous Monitoring Approach (USOAP-CMA)
- c) transforms the assistance way, which includes project management techniques, hand-holding concepts, and more constant and direct NACC technical staff assistance to the States
- d) has four phases of implementation and a ranking of three priority assistance
- e) delivers assistance through a State tailored Action Plan
- f) its expected outcomes are:
  - Short Term, 1 Year – Development and initiation of the ICAO NACC NCLB Strategy
  - Medium Term, 2 years (By December 2016) - Have NCLB Strategy implemented in all NACC RO member States
  - Long Term, 4 years - No more than 2 States below 80% of EI

6.3 The Meeting agreed that the MEVA Network activities are a key part of the NCLB strategy for which MEVA Members decided to follow and support the NACC NCLB tailored action plans and solutions for enhancing the communications and the regional collaboration.

***X.25 Connections***

6.4 Under WP/05, United States informed on the decommissioning of its X.25 network and the concentration of international X.25 connections at its Atlanta and Salt Lake Network Enterprise Management Center (NEMC) locations. All MEVA III connections are now terminated at Atlanta and are supported by the FAA X.25 network node.

6.5 Since 2010, the FAA has reduced its X.25 users from approximately 500 to just over 20. The majority of the remaining users are international X.25 AFTN and twelve users are supported on the MEVA III network. The FAA X.25 network is beyond the End of Life and has no active vendor maintenance. Continued sustainment is increasingly difficult. Similarly the FAA's NAS Messaging

Replacement (NMR) AFTN message switch has X.25 interface cards that need to be retired so that essential server upgrades can be performed.

6.6 ICAO has encouraged existing X.25 AFTN users to migrate to AMHS and the NACC States are implementing an IP-based approach. The FAA has actively supported this approach and is testing with several of the region's ANSPs today with an intention for their migration to AMHS.

6.7 Meanwhile several MEVA III users are expected to continue to need X.25 AFTN support in advance of their migration to AMHS. The FAA plans to deploy COTS TCP/IP to X.25 conversion allowing a local TCP/IP connection originated from the **NMR** switch to be converted into the existing X.25 AFTN connection.

6.8 Since NMR provides geographic redundant service between Atlanta and Salt Lake City, either center may initiate the TCP/IP session. The result is that continuous X.25 SVCs must be initiated by the FAA and received by legacy X.25 users. This may be a reversal of today's operation or a change if two-way initiation is used. Recent implementations (Aruba, Bogota, Caracas) of X.25 PADs by the MEVA III vendor have already been configured to receive X.25 SVCs only. Testing of the TCP/IP to X.25 conversion capability is currently underway and scheduled for deployment in 2016. A schedule for migration of existing X.25 users to this new support mechanism will be forthcoming.

6.9 Due to the above the Meeting agreed on the following conclusion:

## **CONCLUSION**

### **MEVA TMG/31/11**

### **CHANGING X.25 CONFIGURATION TO X.25 SVC CONNECTIONS**

That, considering that United States X.25 network is beyond the end of life and has no active vendor maintenance with difficult continued sustainment and to complete decommissioning of its X.25 network,

- a) MEVA III TF evaluate the impact for the change (X.25 configuration to receive X.25 SVC connections) reporting the MEVA Members by **30 August 2016**; and
- b) CAR States having legacy X.25 AFTN circuit migrate to a TCP/IP to X.25 conversion capability by **30 November 2017**.

### ***Electronic Regional Air Navigation Plan (eANP)***

6.10 Under WP/06, ICAO presented the deployment of the electronic Air Navigation Plans (eANP) describing the current status and the approval of its volume I in April 2016 (available at the ICAO NACC Regional Office website at: <http://www.icao.int/NACC/Pages/namcar-eANPV1.aspx> ) and the planning for the approval of the rest of the Volume II (Proposal for Amendment (PfA) has been submitted for States approval in May 18, 2016) and Volume III by 2016.

6.11 ICAO emphasized that Volume II had several general and specific Communications, Navigation and Surveillance (CNS) requirements included the ATN network infrastructure, IPv4 addressing, ATS communications, surveillance data requirements, etc. and that the timely revision and completion of the eANP has been successfully conducted with the support of the designated State PoCs.

6.12 Considering the importance of the eANP, the Meeting agreed to support the activities for the CAR/SAM and NAM eANP development and implementation; and review the Volume II requirements on CNS for its appropriate implementation by the MEVA Members, agreeing in the following conclusion:

**CONCLUSION**

**MEVA/TMG/31/12 REVIEW OF CAR/SAM eANP VOLUME II CNS REQUIREMENTS**

That, in order to ensure that the CAR/SAM eANP Volume II has the CNS requirements reflecting the best practices and updates identified in the MEVA III Network, the MEVA III TF:

- a) conduct a revision of these requirements, particularly on the ATN architecture and A/G and G/G Communications; and
- b) report their recommendations to the MEVA TMG/32 Meeting.

6.13 Finally, the Meeting was informed that for the NAM Region, the ICAO NACC Regional Office jointly with Canada and United States had conducted several teleconferences and informal meetings to develop the electronic NAM eANP. A draft Volume I is almost completed, Volume II is still under development and a provisional Volume III with a NAM ASBU handbook was been drafted.

***MEVA Experience in the Global Ministerial Conference***

6.14 Under WP/03, ICAO informed that Saudi Arabia has coordinated with ICAO to host the Global Ministerial Conference from 29-31 August 2016 in Riyadh, Kingdom of Saudi Arabia. The Conference will serve as a platform for presenting information regarding prioritized Regional Projects aiming at promoting civil aviation for the purpose of adopting and implementing them in the Asia/Pacific (APAC) Region. The information presented and the analysis conducted shall include all relevant details, inter alia, cost benefit, feasibility study, institutional and financial framework, and a preliminary implementation plan.

6.15 The MEVA III Network experience had been selected for this Conference as part of the regional projects in air navigation. This session has been planned to present detailed information on projects that were implemented on a regional level, along with information on all the steps involved in all the phases required to implement these projects, besides the financial and institutional arrangements for other regions to benefit from.

6.16 For the presentation of the MEVA III Network experience and other CAR region Projects, the ICAO NACC Regional Director has been selected. Considering the importance of sharing the benefits and good practices of the MEVA Network, the Meeting agreed on a specific Ad hoc group of Members to support on the formulation of inputs to the MEVA III network presentation, formulating the following conclusion:

**CONCLUSION**  
**MEVA TMG/31/13**

**INPUTS TO MEVA III NETWORK PRESENTATION FOR THE GLOBAL  
MINISTERIAL CONFERENCE**

That, considering the honour given to the MEVA Network to be presented in the Global Ministerial Conference and to ensure the best data representing the performance and regional effort accomplished with the network:

- a) the MEVA TMG Members designate two MEVA Members and the MEVA Service Provider for an Ad hoc Group to provide inputs for the presentation to be developed by **10 June 2016**; and
- b) the Ad hoc Group work together with the MEVA TMG Coordinator and the MEVA III Network Coordinator on the development of the presentation until the conference.

***Next MEVA TMG Meeting***

6.17 Cuba confirmed that they will host the next MEVA TMG Meeting, TMG/32, to be held in La Havana, Cuba, by the last week of May 2017.

MEVA/TMG/31  
Appendix A to the Report

**LIST OF CONCLUSIONS - MEVA/TMG/31**

Conclusions	Description
<b>TMG/31/1 - MEVA SERVICE PROVIDER- FINAL ORGANIZATION STRUCTURE</b>	That, in order to ensure the contractual matters in the MEVA Service Level Agreement (SLA), the MEVA Service Provider inform the MEVA Members by 30 June 2016 of the final organizational structure supporting the MEVA Service, including the Quality assurance/management personnel.
<b>TMG/31/2 - COMPLETION OF CONTRACTUAL MATTERS WITH THE NEW SERVICE PROVIDER</b>	That, in order to complete the pending contractual matters with the new MEVA III Network Service Provider, Frequentis review all the replies provided by the MEVA Members and contact the MEVA Members that have missing signature/document to be completed, reporting the MEVA Members of the completion of this process by 30 August 2016.
<b>TMG/31/3 - OPERATIONAL USE OF MEVA III CIRCUITS</b>	That, in order to ensure the operational use of all the contracted MEVA III circuits (SDD listed), all the MEVA Members with pending circuits to be operational, perform the necessary actions (operational agreement, procedure, etc.) and report the completion of this task or its progress status to the MEVA TMG Coordinator and ICAO by 30 September 2016.
<b>TMG/31/4 - COMPLETION OF MEVA III NODE INFRASTRUCTURE IN MIAMI</b>	That, in order to complete the necessary infrastructure in the MEVA III node in Miami, United States coordinate with the MEVA Service Provider to conduct the arrangement to complete the full independency of the T1 lines and report the MEVA/TMG/32 Meeting accordingly.
<b>TMG/31/5 - UPDATE OF OPERATIONAL DOCUMENT OF MEVA III</b>	That, in order to ensure that the valid operational documents are available and usable for the MEVA III operation and management, the MEVA III Service Provider and the MEVA III TF review and update this documentation by 30 September 2016 and inform the MEVA Members accordingly.
<b>TMG/31/6 - FOLLOWUP TO IMPLEMENTATION OF MEVA III – REDDIG II INTERCONNECTION CIRCUIT REQUIREMENTS</b>	That, in order to conduct a follow-up of the MEVA III- REDDIG II Interconnection circuits requirements, a) MEVA Service Provider resolve the problems identified in the PAD equipment; b) Curaçao, Panama and United States continue the operational/technical coordination with Colombia, Venezuela and the respective SAM States for the implementation of the radar data sharing and AMHS circuits; c) Trinidad and Tobago and COCESNA follow-up on the cost/technical aspects for deciding the best solution for the implementation of the PIARCO-Atlanta AMHS circuit, including Letter of agreement updates as needed; and d) the progress and updates to this implementation be reported to the MEVA/TMG/32, applying the MEVA III additional circuit process.

Conclusions	Description
<b>TMG/31/7 - E/CAR AFS - MEVA III NETWORK INTERCONNECTION TROUBLESHOOTING MANAGEMENT AND COORDINATION PROCEDURE</b>	<p>That, in order to improve the coordination and management actions for trouble shooting failures involving the interconnection of E/CAR AFS and MEVA III Network, the MEVA III TF, the MEVA Service Provider and the ECAR NTG Rapporteur develop by 30 July 2016, a draft Troubleshooting management and coordination procedure for approval of the MEVA Members and the E/CAR AFS Members.</p>
<b>TMG/31/8 - IMPROVEMENT TO OPERATION OF ORAL VOICE CIRCUITS OF THE E/CAR AFS - MEVA III NETWORK INTERCONNECTION</b>	<p>That, in order to improve the operation, resolve the delays and echoes in the existing voice circuits of this interconnection</p> <ul style="list-style-type: none"> <li>a) MEVA Service Provider assist in the testing and solution of the echoes and delays reported in the oral voice circuits by 30 June 2016; and</li> <li>b) the E/CAR NTG ensure a Point of Contact for maintenance and operation of circuits matters by 30 May 2016.</li> </ul>
<b>TMG/31/9 - ACTION PLAN AND AGREEMENT FOR MIGRATION OF AFTN LINES TO AMHS LINES</b>	<p>That, in order to optimize the cost and use of the network bandwidth, without violating the original contracts of the network, for those Members that are requesting that existing AFTN lines to migrate to AMHS circuits, the MEVA III TF develop a draft Action Plan and Agreement to allow this migration by 30 September 2016.</p>
<b>TMG/31/10 - IMPLEMENTATION OF NEW MEVA III CIRCUITS</b>	<p>That, in order to ensure the operational need and a realistic date for the implementation of the new circuits listed in Table 3, the MEVA Members involved in the new circuits:</p> <ul style="list-style-type: none"> <li>a) evaluate these needs with their corresponding operational counterparts;</li> <li>b) apply the “MEVA III Additional circuit” procedure; and</li> <li>c) inform the MEVA/TMG/32 Meeting.</li> </ul>
<b>TMG/31/11 - CHANGING X.25 CONFIGURATION TO X.25 SVC CONNECTIONS</b>	<p>That, considering that United States X.25 network is beyond the end of life and has no active vendor maintenance with difficult continued sustainment and to complete decommissioning of its X.25 network,</p> <ul style="list-style-type: none"> <li>a) MEVA III TF evaluate the impact for the change (X.25 configuration to receive X.25 SVC connections) reporting the MEVA Members by 30 August 2016; and</li> <li>b) CAR States having legacy X.25 AFTN circuit migrate to a TCP/IP to X.25 conversion capability by 30 November 2017.</li> </ul>
<b>TMG/31/12 - REVIEW OF CAR/SAM eANP VOLUME II CNS REQUIREMENTS</b>	<p>That, in order to ensure that the CAR/SAM eANP Volume II has the CNS requirements reflecting the best practices and updates identified in the MEVA III Network, the MEVA III TF:</p> <ul style="list-style-type: none"> <li>a) conduct a revision of these requirements, particularly on the ATN architecture and A/G and G/G Communications; and</li> <li>b) report their recommendations to the MEVA TMG/32 Meeting.</li> </ul>

MEVA/TMG/31  
Appendix A to the Report

A3

<b>Conclusions</b>	<b>Description</b>
<b>TMG/31/13 - INPUTS TO MEVA III NETWORK PRESENTATION FOR THE GLOBAL MINISTERIAL CONFERENCE</b>	That, considering the honour given to the MEVA Network to be presented in the Global Ministerial Conference and to ensure the best data representing the performance and regional effort accomplished with the network: a) the MEVA TMG Members designate two MEVA Members and the MEVA Service Provider for an Ad hoc Group to provide inputs for the presentation to be developed by 10 June 2016; and b) the Ad hoc Group work together with the MEVA TMG Coordinator and the MEVA III Network Coordinator on the development of the presentation until the conference.

**FOLLOW UP TO VALID CONCLUSIONS FROM THE MEVA TMG/30 AND ANI/WG/3 MEETINGS**

Conclusions	Description	Remarks	Status
<b>ANI/WG/3/3 - PROTECTION AND RECOGNITION OF C BAND SPECTRUM USAGE</b>	<p>That, in order to take the technical and regulatory actions to support existing and future operation of the fixed satellite service earth stations within the band 3 400 – 4 200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some States, NAM/CAR States take the appropriate measures in order to ensure the protection of the satellite C-band operated by the National and Regional VSAT networks:</p> <p>a) registration of the aeronautical VSAT frequencies in the States register held by the national authorities of regulation of telecommunication; and</p> <p>b) follow-up with the concerned authorities in the States to further register the frequencies in the ITU Master International Frequency Register (MIFR) by February 2017.</p>	MEVA Members will act and follow-up with their National Spectrum Authority	Valid
<b>ANI/WG/3/6 - AMHS IMPLEMENTATION PROCESS IN THE CAR REGION</b>	<p>That, to streamline the AMHS operational use, the States/Territories of the CAR Region, to:</p> <p>a) update accordingly the CAR Region Implementation Matrix by December 2016;</p> <p>b) take advantage of the ATN Data Link Implementation Application Workshop scheduled for 18 to 21 April 2016 in St Maarten to exchange information and progress on the implementation; and</p> <p>c) carry on with the additional task of testing the transmission of XML data through AMHS system, coordinating these activities with the AMHS TF.</p>	MEVA TMG Coordinator to keep the MEVA Members involved on the need for MEVA Network capabilities and circuits	Valid
<b>TMG/30/1 - MEVA III MASTER/SLAVE SWITCHING-NETWORK ACCEPTANCE TEST</b>	That in order to complete the NAT for the MEVA III, Frequestis report the actions scheduled for the MST/Slave switching by 9 June 2015.	NAT was completed on November 16 2015.	Completed
<b>TMG/30/2 - MEVA III ON-TH E-JOB TRAINING</b>	<p>That in order to improve and complete the OJT for MEVA III, Frequestis:</p> <p>a) provide a one day OJT free of charge to all MEVA Members during the 2016 annual maintenance visit; and</p> <p>b) inform Panama on the OJT provision by 6 June 2015.</p>	Panama OJT was performed during annual maintenance visit on April 14 2016.	<p>a) Completed</p> <p>b) Completed</p>
<b>TMG/30/3 - REMOVAL OF BILLS DUE TO ADDITIONAL HOURS DURING INSTALLATION</b>	<p>That considering the clarifications made by the MEVA Members:</p> <p>a) remove all bills to the MEVA Members related to the additional hours during installation; and</p> <p>b) MEVA Members be aware of item a) and refuse any bill related to this concept.</p>	Completion was verify by Members during this meeting	Completed
<b>TMG/30/4 - PAYMENT OF MEVA III SERVICE BILLS</b>	That MEVA Members, who have not yet done so, review and make the necessary payments for the MEVA III Service bills, contacting Frequestis for this	Completed	Completed

	coordination by 5 June 2015.		
<b>TMG/30/5 - CREDITS FOR BUC REPLACEMENT AND INSTALLATION MATERIALS</b>	<p>That, considering the pending actions to complete the MEVA III installation, Frequestis</p> <p>a) provide Aruba, Dominican Republic and COCESNA a 25% credit for the equipment leased cost until the final CPI BUC is installed or the installation of 2nd BUC;</p> <p>b) provide new power strip to Aruba MEVA node by the next annual maintenance visit; and</p> <p>c) provide an answer on material reimbursement for Dominican Republic by 12 June 2015.</p>	<p>a) Credit received</p> <p>b) Power strip in Aruba installed during the last maintenance visit in April 2016</p> <p>c) Completed</p>	<p>a) Completed</p> <p>b) Completed</p> <p>c) Completed</p>
<b>TMG/30/6 - CPI BUC REPLACEMENT</b>	<p>That in order to ensure that the MEVA III BUCs are the final updated versions from CPI manufacturer; Frequestis inform and publish in the MEVA III Website the BUC serial numbers by 6 June 2015.</p>	<p>a) Serial numbers are available at the MEVA Web page:</p> <p>b) Cuba license granted around April 29 2016. Frequestis is coordinating with Cuba for coordination</p>	<p>a) Completed</p> <p>b) Valid</p>
<b>TMG/30/7 - AERONAUTICAL MESSAGE HANDLING SYSTEM (AMHS) DATA CIRCUIT STRESS TEST</b>	<p>That, in order to ensure the correct operation and capacity performance of the AMHS circuit, Dominican Republic and United States coordinate a Stress test for the AMHS Data Circuit by 30 June 2015, with the support of Frequestis.</p>	Stress test completed	Completed
<b>TMG/30/8 - BUC REPLACEMENT IN ATLANTA</b>	<p>That, in order to restore the redundancy and final configuration of the Atlanta MEVA III Node, Frequestis and United States coordinates the 5-hour maintenance window needed to replace all the Terrasat BUCs with CPI final BUCs by 6 June 2015.</p>	Replacement completed	Completed
<b>TMG/30/9 - ERLANG B BLOCK PROBABILITY INFORMATION</b>	<p>That, in order to provide accurate information on the MEVA III Erlang Block Probability, Frequestis:</p> <p>a) draft a method for this calculation by 30 July 2015;</p> <p>b) submit the method to the MEVA III TF for its corresponding review and approval; and</p> <p>c) include the bandwidth availability and the Erlang B Block probability by the August 2015 Monthly report.</p>	b) completed on 8/25/2015	<p>a) Completed</p> <p>b) Completed</p> <p>c) Completed</p>
<b>TMG/30/10 - MEVA NOC IMPROVEMENTS</b>	<p>That, in order to resolve the different difficulties encountered in the NOC service, FREQUESTIS, by 2 June 2015:</p> <p>a) implement a dedicated phone line in Miami, United States NOC for MEVA;</p> <p>b) implement the proposed improvements;</p>	<p>a) completed</p> <p>b) Completed</p> <p>c) Available on MEVA Web site</p> <p>d) Members informed via email about dedicated lines. Information also available on MEVA Web page.</p>	<p>a) Completed</p> <p>b) Completed</p> <p>c) Completed</p> <p>d) Completed</p>

	<p>c) complete guidelines and submit them to Members by 2 June 2015; and</p> <p>d) implement a Quality assurance procedure for the NOC performance and the results of this procedure be shown in the monthly reports for two months.</p>		
<b>TMG/30/11 - COST SHARING PROCEDURE FOR ADDITIONAL MEVA III CIRCUITS</b>	That Members approve the Procedure for Cost Sharing for new Additional MEVA III Circuits as presented in Appendix D to this report.		Completed
<b>TMG/30/12 - COMPLETION OF PRICING ASSOCIATED DOCUMENT TO COST SHARING PROCEDURE</b>	That in order to complement the pricing and conditions for new additional MEVA III circuit implementation, Frequestis provides the updated Price and Conditions document to the MEVA III Task Force by 5 June 2015.	Completed by MEVA TMG Task Force	Completed
<b>TMG/30/13 - FREQUESTIS IMPROVEMENT TO MEVA III COORDINATION, COMMUNICATION AND QUALITY TECHNICIAN SUPPORT</b>	<p>That, in order to improve the coordination and communication by Frequestis on the provision of the MEVA III service, Frequestis:</p> <p>a) continuously train its technical staff related to the MEVA III on the MEVA III equipment and services; and</p> <p>b) implement an internal quality system in order to measure the technical competence of its NOC staff.</p>	<p>a) On going effort</p> <p>b) Completed</p>	<p>a) Completed</p> <p>b) Completed</p>
<b>TMG/30/14 - RESTORATION OF JAMAICA SKYWAN SPARE MODEM</b>	That, in order to restore the Jamaica local spare pool, Frequestis contact the freight forwarder to get the written proof of successful delivery by 3 June 2015.	Jamaica informed Frequestis that spare SkyWAN was received	Completed
<b>TMG/30/15 - MEVA III DOCUMENTATION REVIEW</b>	<p>That, in order to make the MEVA III final documentation available, and to complete the revision of the pending MEVA III documents, Frequestis:</p> <p>a) upload all the latest SDD documentation and the NOC PoC list to the MEVA III website by 12 June 2015;</p> <p>b) provide the final MEVA III/REDDIG II Interconnection documents (SDD Chapter 1 Annex 2 and 3) as soon as this Interconnection is completed and documented by 12 June 2015 for the MEVA III Task Force review; and</p> <p>c) provide the Erlang B calculation to the MEVA III Task Force for review and recommend approval by 24 July 2015.</p>		<p>a) Completed</p> <p>b) Completed</p> <p>c) Completed</p>
<b>TMG/30/16 - MEVA III TASK FORCE PENDING TASKS</b>	<p>That, in order to follow-up the pending implementation tasks, the MEVA III Task Force:</p> <p>a) conclude the review of the SDD Documentation (Chapter 9 – Security Plan, Chapter 13 – Glossary, Maintenance Plan, As-Built Documentation, NOC Operational Manual, Contingency Procedures) by 19 June 2015; and</p> <p>b) ensure that NAT is performed and documented (NAT tentatively scheduled for 26 June 2015).</p>	<p>a) As SDD documentation completed and on Web site</p> <p>b) NAT completed on Nov 2015</p>	Completed
<b>TMG/30/17 - BAHAMAS POINT-</b>	That, in order to complete and have all the necessary contact information for	The PoC for Colombia and	a) Nassau -

<b>OF-CONTACT FOR NOC OPERATION</b>	the MEVA III NOC Operation and coordination, Colombia and Venezuela send its Point of Contact information to Frequentis by 12 July 2016.	Venezuela is the REDDIG Administration	completed. Colombia and Venezuela - completed
<b>TMG/30/18 - FOLLOW-UP TO MEVA III-REDDIG II INTERCONNECTION MEMORANDUM OF UNDERSTANDING</b>	That MEVA Members approve the MEVA III/ REDDIG II Interconnection Memorandum of Understanding as presented in Appendix D and monitor the proper implementation of this commitment.		Completed
<b>TMG/30/19 - ADDITIONAL CIRCUITS FOR MEVA III-REDDIG II INTERCONNECTION</b>	That, in order to start and timely prepare the technical and cost matters for the implementation of new circuits related with the MEVA III-REDDIG II Interconnection:  a) MEVA Members involved in the additional circuits listed in Table 1 confirm the need of these circuits by 30 June 2015;  b) ICAO inform the REDDIG Administration of the agreed cost-sharing procedure for additional circuits that will apply;  c) MEVA Members inform by 30 June 2015 of any additional circuit related with the interconnection; and  d) MEVA TMG coordinate through teleconferences with the REDDIG II Administration the necessary actions for the implementation of additional circuits.	A new Conclusion was agreed	Superseded
<b>TMG/30/20 - COMPLETION OF MEVA III-REDDIG II INTERCONNECTION CIRCUIT IMPLEMENTATION</b>	That in order to track the completion of the implementation of the MEVA III-REDDIG II circuits, United States, COCESNA and Frequentis report the MEVA Members on the progress made in this matter by 16 June 2015.	Only the AFTN line Atlanta-Brazil is pending	COCESNA: In April/2016 BUC exchange was performed by Frequentis because the previous had saturation problems, such work was carried out in coordination with the REDDIG Administration. USA: Valid
<b>TMG/30/21 - ACTIONS FOR MEVA III-E/CAR AFS NETWORK INTERCONNECTION</b>	That, in order to track and timely assist the implementation of the MEVA III-E/CAR AFS Networks interconnections, Sint Maarten and United States inform the TMG of the accomplishment of the agreed actions of the Teleconference of 26 May 2015 by 30 June 2015.	Interconnection was successfully implemented Nov. 2015	Completed
<b>TMG/30/22 – STATE SUPPORT FOR ICAO WRC-2015 POSITION,</b>	That, in order to protect the use of the radiofrequency spectrum for aviation usage and the timely MEVA III VSAT Node registration in ITU Master	New conclusion was adopted by ANI/WG	Superseded

<b>ITU VERY SMALL APERTURE TERMINAL (VSAT) NODE REGISTRATION AND INTERFERENCE NOTIFICATION PROCEDURE</b>	<p>International Frequency Register (MIFR) and Frequency interference follow-up:</p> <p>a) MEVA Members:</p> <ul style="list-style-type: none"> <li>i. to coordinate with their National Spectrum Regulator, the support to be provided to the ICAO WRC-2015 Position for the Ottawa CITEL XXVI PCC.II Meeting - August 2015 (Ottawa, Canada);</li> <li>ii. take in consideration the ITU study carried out for the MEVA III Network, coordinating with their National Spectrum Regulators; and</li> <li>iii. register their corresponding MEVA III Node in the ITU MIFR by 30 December 2015;</li> </ul> <p>b) Frequestis:</p> <ul style="list-style-type: none"> <li>i. notify the final working frequency to each MEVA Member node by 15 June 2015; and</li> <li>ii. propose a procedure for the timely frequency interference notification and resolution for MEVA III by 30 December 2015.</li> </ul>		
<b>TMG/30/23 - DATA MIGRATION OF ICAO MEVA II SECURE PORTAL</b>	<p>That in order to maintain and keep a common source of MEVA III information in benefit of all MEVA Members, the MEVA III TF:</p> <p>a) review existing MEVA III secure portal and the former MEVA II Website to determine the relevant data to be migrated; and</p> <p>b) coordinate with Frequestis to update the MEVA III website with the information provided by the MEVA III TF by 30 August 2015.</p>	<p>a) This transfer is still pending</p> <p>b) completed</p>	<p>a) Valid</p> <p>b) Completed</p>
<b>TMG/30/24 - MEVA III LOCAL MONITORING WITH SNMP</b>	<p>That in order to maintain and keep a common source of MEVA III information in benefit of all MEVA Members:</p> <p>a) MEVA Members evaluate, if required, their local monitoring needs for local MEVA III node monitoring;</p> <p>b) MEVA Members agree to implement this MEVA III local monitoring to inform the MEVA TMG and ICAO of this requirement; and</p> <p>c) Frequestis assist free of charge the MEVA Members in this monitoring implementation.</p>	<p>Members agreed to implement local monitoring with SNMP. Frequestis provided a demonstration during TMG/31 meeting and assist the Members in monitoring implementation.</p>	<p>Completed</p>

## 2015 NETWORK PERFORMANCE AND MANAGEMENT

State Responses	Status of MEVA III Contract	Pending Additional Contract Issues	Circuits completed in MEVA III SDD	Was Performance Availability achieved as per SLA	Trouble shooting Issue and was credit received.	Are NOCC Procedure and Maintenance Satisfactory.	Was Sun Outage Failure intervention satisfactory	Monthly report performance for data and Voice	Any Pending Installation Node configuration	New Requirement Services	Increase of Network Bandwidth due to AMHS Implementation	Interconnection with E/CARS and REDDIG
Jamaica	Completed. Monthly payments made to Frequentis. <b>Action:</b> Letter needs to be signed by Director in Jamaica	None	See separate excel file	Yes	No trouble shooting issue at this time	Yes	Yes	Report Ok	None	Yes, Circuit Provision for radar data sharing COCESNA Panama	Relevant provision made	No
St. Maarten	Completed and payments to new FREQUENTIS account provided. <b>ACTION:</b> verify that pending payments already completed	None	Additional circuit: Yes, AMHS 6400 line was activated for testing. Shout line TJSJ operational, require agreement (LOA)	Yes	ECAR to MEVA dial tone issues solved (reported echoes and voice delay issues, mainly delays)	Yes	Not affected.	Good. Harris is in the process to assist PJIAE (internal Sint Maarten) to eliminate voice echoes	NONE only replacement of wave guide and feed horn (discovered during annual maintenance)	After determination of radar data sharing bandwidth required.		Completed and operational. Voice delay issue being looked at.
Dominican Republic	Signed the frequentis agreement	None	Yes	Yes	The main troubleshooting issue was during the sun outage period.	Yes	Yes	No issues	The Wednesday 25 going to be change the BUC, but this issue it no a pending installation	No requirements	Not	No
Cuba	Ok	The Codan BUC not yet replaced.	Yes	Ok	Not relevant issues.	The procedures about the close and open time of the tickets have been discussed and some changes made, but still need to be clarified and documented.	Ok	No comments	Codan BUC pending to replace.	No	No	No
Haiti	Signed the frequentis agreement. Waiting for the changes on the framework agreement document. Started paying the past dues, and should be on schedule by next month.	No	Yes	Yes so far	The main troubleshooting issue was during the sun outage period.	Yes	The system took too long to recover.	No. Can you please remind me where to find the monthly reports and what is the last one sent? <b>Comments:</b> Report is in the Website which was restored this month	No	In a near future Radar data sharing and AMHS.	Not until we ready for implementation	No
Miami	Signed. Payments are to be complete with the contract updates made.	UPS has not been delivered	Ann-Marie Toomer Gayle: Prices can not be maintained (2014)- FREQ sent new quote. FAA to decided	Yes	Yes	So far yes	No major disruption	Website was out for several months	None	Two additional lines to Cuba	Not until we ready for implementation	None
San Juan	Signed. Payments are to be complete with the contract updates made.	UPS has not been delivered		Yes	Yes	So far yes	Yes	Website was out for several months	None	Complete shout line to Venezuela	Not until we ready for implementation	Completed
Atlanta	Signed. Payments are to be complete with the contract updates made.	None	Yes	Yes	Yes	So far yes	Yes	Website was out for several months	None	None	Not until we ready for implementation	Pending AFTN with Brasil
Panama	Signed letter and contract. Payment done	None	Yes	Yes	Yes	Yes	Yes	No issues	None	AMHS with Colombia and Atlanta	Yes	none

State Responses	Status of MEVA III Contract	Pending Additional Contract Issues	Circuits completed in MEVA III SDD	Was Performance Availability achieved as per SLA	Trouble shooting Issue and was credit received.	Are NOCC Procedure and Maintenance Satisfactory.	Was Sun Outage Failure intervention satisfactory	Monthly report performance for data and Voice	Any Pending Installation Node configuration	New Requirement Services	Increase of Network Bandwidth due to AMHS Implementation	Interconnection with E/CARS and REDDIG
Curacao	Completed, Contract transferred from comsoft successfully since 16-2-2016. Payments are OK.	None	Yes, all lines are tested but not operational yet, pending agreement on usage.	Yes	The BUC of Curacao broke down and we used our own BUC, instead of the BUC to be provided as a spare BUC, until our BUC was repaired. We also had to Reprogram and Replace the FAD modem because we had a card failure: the Modem was replaced with the spare one.	Yes	Yes	No	No	Two additional voice Switch lines are needed as request of ATC, beginning 2017	Yes, 2017	Data Interconnection is working perfectly. We still have an issue with Maiqueitia on Direct speech.
Aruba	Still awaiting the name change on the contract with Frequentis. Payments up to date	None	Yes	Yes	No relevant troubleshooting issue to report. Credit received for the unavailability of the BUC at start-up of the MEVA III.	Satisfactory	Has not been affected	ok	NO issues. Open items left after installation has been remedied at the annual maintenance visit.	AMHS circuit (64Kbps) with Atlanta	Yes	Interconnection Aruba- Punto Fijo (via Caracas) working good.
COCESNA	Signed letter and contract. Payment done	None	Yes	Yes	Yes	Yes	Yes	No issues	none	Radar with Jamaica	Yes	None
Bahamas	Letter to be signed and followup in payment: pending	None	Yes	Yes	Yes	Yes	Yes	No issues	none	No	Yes	
Cayman Islands	Letter to be signed but payment: done	-										

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
Aruba	Miami	2900		SWV	16000	FXS	-	OK	
Aruba	Curacao	2901		SWV	16000	FXS	-	OK	
Aruba	CCS→PRG	2902		SWV	16000	FXS	-	OK	
Aruba	Teleport		2400	SWV	16000	FXS	-	OK	
Aruba	Curacao	ATS Hotline		VSD	16000	E&M	ARUCUR_VSD	NOK	
Aruba	Caracas --> Josefa Camejo	end-to-end direct		VSD	16000	E&M	-	OK	
Atlanta	Teleport	dial-out	2400	SWV		FXS	-		
Bogota	Multiple	4545		SWV	16000	E1	-		
Bogota	Multiple	4540		SWV	16000	E1	-		
Bogota	Multiple	4531		SWV	16000	E1	-		
Bogota	Multiple	4560		SWV	16000	E1	-		
Bogota	Multiple	4541		SWV	16000	E1	-		
Bogota	Multiple	4542		SWV	16000	E1	-		
Bogota	Multiple	4547		SWV	16000	E1	-		
Bogota	Teleport	dial-out	2400	SWV	16000	E1	-		
Bogota	Curacao	ATS Hotline		VSD	16000	E1	-		
Bogota	Jamaica	ATS Hotline		VSD	16000	E1	BOGJAM_VSD		
Bogota	Panama	ATS Hotline		VSD	16000	E1	BOGPAN_VSD		
Caracas	Multiple	8001		SWV	16000	FXS	-		
Caracas	Multiple	8002		SWV	16000	FXS	-		
Caracas	Multiple	8003		SWV	16000	FXS	-		

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
Caracas	Teleport	dial-out	2400	SWV	16000	FXS	-		
Caracas	Aruba	ATS Hotline		VSD	16000	FXS	-		
Caracas	Curacao	ATS Hotline		VSD	16000	FXS	CARCUR_VSD		
Caracas	San Juan	ATS Hotline		VSD	16000	FXS	CARSAN_VSD	NOK	
COCESNA	Multiple	2100		SWV	16000	FXS	-	OK	
COCESNA	Multiple	2102		SWV	16000	FXS	-	OK	
COCESNA	Teleport	2101	2400	SWV	16000	FXS	-	OK	
COCESNA	Jamaica	VHF-PTT end-to-end direct		RRS	16000	E&M (PTT)	COCJAM_RRS		
Cuba	Multiple	2300		SWV	16000	E&M	-	OK	
Cuba	Multiple	2301		SWV	16000	E&M	-	OK	
Cuba	Multiple	2302		SWV	16000	E&M	-	OK	
Cuba	Multiple	2303		SWV	16000	E&M	-	OK	
Cuba	Multiple	2304		SWV	16000	E&M	-	OK	
Cuba	Multiple	2305		SWV	16000	E&M	-	OK	
Cuba	Teleport	dial-out	2300	SWV	16000	E&M	-	OK	
Cuba	Jamaica	2352	3051	VSD	16000	E&M	CUBJAM_VSD	OK	
Cuba	Jamaica	2353	3052	VSD	16000	E&M	CUBJAM_VSD1	OK	
Cuba	Merida	2355	1601	VSD	16000	E&M	CUBMER_VSD	NOK	Mexico pending
Cuba	Miami	2350	1951	VSD	16000	E&M	CUBMIA_VSD	OK	
Cuba	Miami	2351	1952	VSD	16000	E&M	CUBMIA_VSD1	OK	
Cuba	Miami	2356	1958	VSD	16000	E&M	CUBMIA_VSD2	OK	
Cuba	Miami	2354	1957	VSD	16000	E&M	CUBMIA_VSD3	OK	
Curacao	Multiple	2200		SWV	16000	FXS	-	OK	

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
Curacao	Multiple	2201		SWV	16000	FXS	-	OK	
Curacao	Multiple	2202		SWV	16000	FXS	-	OK	
Curacao	Teleport	dial-out	2400	SWV	16000	FXS	-	OK	
Curacao	Aruba	ATS Hotline		VSD	16000	E&M	ARUCUR_VSD	NOK	LOA for use
Curacao	Caracas	ATS Hotline		VSD	16000	E&M	CARCUR_VSD	NOK	LOA for use
Curacao	Dom Rep.	ATS Hotline		VSD	16000	E&M	DOMCUR_VSD	NOK	LOA for use
Curacao	Jamaica	ATS Hotline		VSD	16000	E&M	JAMCUR_VSD	NOK	LOA for use
Dom Rep.	Multiple	2600		SWV	16000	FXS	-	OK	
Dom Rep.	Multiple	2601		SWV	16000	FXS	-	OK	
Dom Rep.	Multiple	2602		SWV	16000	FXS	-	OK	
Dom Rep.	Multiple	2603		SWV	16000	FXS	-	OK	
Dom Rep.	Multiple	2604		SWV	16000	FXS	-	OK	
Dom Rep.	Multiple	2605		SWV	16000	FXS	-	OK	
Dom Rep.	Teleport	dial-out	2400	SWV	16000	FXS	-	OK	
Dom Rep.	Curacao	ATS Hotline		VSD	16000	E&M	DOMCUR_VSD	NOK	Same LOA from Curacao
Dom Rep.	Haiti	ATS Hotline		VSD	16000	E&M	DOMHAI_VSD	OK	tested: ope 30 May
Dom Rep.	Miami	2650	1656	VSD	16000	E&M	DOMMIA_VSD	ok	LOA to be completed
Dom Rep.	San Juan	ATS Hotline		VSD	16000	E&M	DOMSAN_VSD	OK:	LOA to be completed
Dom Rep.	San Juan	ATS Hotline		VSD	16000	E&M	DOMSAN_VSD1	OK:	LOA to be completed
Freeport	Multiple	1010		SWV	16000	FXS	-	OK	

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
Freeport	Multiple	1001		SWV	16000	FXS	-	OK	
Freeport	Multiple	1002		SWV	16000	FXS	-	OK	
Freeport	Multiple	1003		SWV	16000	FXS	-	OK	
Freeport	Teleport	dial-out	2400	SWV	16000	FXS	-	OK	
Grand Cayman	Multiple	2500		SWV	16000	FXS	-		
Grand Cayman	Multiple	2501		SWV	16000	FXS	-		
Grand Cayman	Multiple	2502		SWV	16000	FXS	-		
Grand Cayman	Multiple	2503		SWV	16000	FXS	-		
Grand Cayman	Multiple	2504		SWV	16000	FXS	-		
Grand Cayman	Multiple	2505		SWV	16000	FXS	-		
Grand Cayman	Teleport	dial-out	2400	SWV	16000	FXS	-		
Grand Cayman	Jamaica	2550	3050	VSD	16000	E&M	GRAJAM_VSD		
Haiti	Multiple	2800		SWV	16000	FXS	-	OK	
Haiti	Multiple	2801		SWV	16000	FXS	-	OK	
Haiti	Multiple	2802		SWV	16000	FXS	-	OK	
Haiti	Multiple	2803		SWV	16000	FXS	-	OK	
Haiti	Multiple	dial-out	2400	SWV	16000	FXS	-	OK	
Haiti	Dom Rep.	ATS Hotline		VSD	16000	E&M	DOMHAI_VSD		
Haiti	Jamaica	ATS Hotline		VSD	16000	E&M	HAIJAM_VSD		
Haiti	Miami	2850	1950	VSD	16000	E&M	HAIMIA_VSD	OK	
Jamaica	Multiple	3000		SWV	16000	FXS	-	OK	

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
Jamaica	Multiple	3001		SWV	16000	FXS	-	OK	
Jamaica	Multiple	3002		SWV	16000	FXS	-	OK	
Jamaica	Multiple	3003		SWV	16000	FXS	-	OK	
Jamaica	Teleport	dial-out	2400	SWV	16000	FXS	-	OK	
Jamaica	Bogota	ATS Hotline		VSD	16000	E&M	BOGJAM_VSD	OK	
Jamaica	Curacao	ATS Hotline		VSD	16000	E&M	JAMCUR_VSD	NOK	Curacao/Jamaica to see operation agreement: 30 June
Jamaica	Grand Cayman	3050	2550	VSD	16000	E&M	GRAJAM_VSD	OK	
Jamaica	Haiti	ATS Hotline		VSD	16000	E&M	HAIJAM_VSD	NOK	Jamaica to seek SW capability: 30 June
Jamaica	Panama	ATS Hotline		VSD	16000	E&M	JAMPAN_VSD	NOK	Jamaica to seek SW capability: 30 June
Jamaica	Cuba	3051	2352	VSD	16000	E&M	CUBJAM_VSD	OK	
Jamaica	Cuba	3052	2353	VSD	16000	E&M	CUBJAM_VSD1	OK	
Jamaica	COCESNA	VHF-PTT end-to-end direct		RRS	16000	E&M (PTT)	COCJAM_RRS	NOK	COCESNA/Jamaica to seek agreement: 30 June
Miami	Multiple	1900		SWV	16000	FXS	-	OK	
Miami	Multiple	1901		SWV	16000	FXS	-	OK	
Miami	Multiple	1902		SWV	16000	FXS	-	OK	
Miami	Multiple	1903		SWV	16000	FXS	-	OK	
Miami	Multiple	1904		SWV	16000	FXS	-	OK	
Miami	Multiple	1905		SWV	16000	FXS	-	OK	
Miami	Multiple	1906		SWV	16000	FXS	-	OK	
Miami	Multiple	1907		SWV	16000	FXS	-	OK	
Miami	Multiple	1908		SWV	16000	FXS	-	OK	
Miami	Multiple	1909		SWV	16000	FXS	-	OK	
Miami	Multiple	1910		SWV	16000	FXS	-	OK	
Miami	Multiple	1911		SWV	16000	FXS	-	OK	

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
Miami	Multiple	1912		SWV	16000	FXS	-	OK	
Miami	Multiple	1913		SWV	16000	FXS	-	OK	
Miami	Multiple	1700		SWV	16000	FXS	-	OK	
Miami	Multiple	1701		SWV	16000	FXS	-	OK	
Miami	Multiple	1702		SWV	16000	FXS	-	OK	
Miami	Teleport	dial-out	2400	SWV	16000	FXS	-	OK	
Miami	Cuba	1951	2350	VSD	16000	E&M	CUBMIA_VSD	OK	
Miami	Cuba	1952	2351	VSD	16000	E&M	CUBMIA_VSD1	OK	
Miami	Cuba	1958	2356	VSD	16000	E&M	CUBMIA_VSD2	OK	
Miami	Cuba	1957	2354	VSD	16000	E&M	CUBMIA_VSD3	OK	
Miami	Dom. Rep.	1956	2560	VSD	16000	E&M	DOMMIA_VSD	OK	
Miami	Haiti	1950	2850	VSD	16000	E&M	HAIMIA_VSD	OK	
Miami	Nassau	1954	2750	VSD	16000	E&M	MIANAS_VSD	OK	
Miami	St. Maarten	1953	3550	VSD	16000	E&M	-	ok	
Nassau	Multiple	2700		SWV	16000	FXS	-	OK	
Nassau	Multiple	2701		SWV	16000	FXS	-	OK	
Nassau	Multiple	2702		SWV	16000	FXS	-	OK	
Nassau	Multiple	2703		SWV	16000	FXS	-	OK	
Nassau	Multiple	2704		SWV	16000	FXS	-	OK	
Nassau	Multiple	2705		SWV	16000	FXS	-	OK	
Nassau	Multiple	2706		SWV	16000	FXS	-	OK	
Nassau	Multiple	2707		SWV	16000	FXS	-	OK	
Nassau	Teleport	dial-out	2400	SWV	16000	FXS	-	OK	
Nassau	Miami	2750	1954	VSD	16000	E&M	MIANAS_VSD	OK	
Panama	Multiple	3901		SWV	16000	FXS	-	OK	
Panama	Multiple	3902		SWV	16000	FXS	-	OK	
Panama	Multiple	3903		SWV	16000	FXS	-	OK	
Panama	Multiple	3904		SWV	16000	FXS	-	OK	

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
Panama	Multiple	3900		SWV	16000	FXS	-	OK	
Panama	Teleport	dial-out	2400	SWV	16000	FXS	-	OK	
Panama	Bogotá	ATS Hotline		VSD	16000	E&M	BOGPAN_VSD	NOK	Colombia to seek capability for its use
Panama	Jamaica	ATS Hotline		VSD	16000	E&M	JAMPAN_VSD		
San Juan	Multiple	1800		SWV	16000	FXS	-		
San Juan	Multiple	1801		SWV	16000	FXS	-		
San Juan	Multiple	1802		SWV	16000	FXS	-		
San Juan	Multiple	1803		SWV	16000	FXS	-		
San Juan	Multiple	1804		SWV	16000	FXS	-		
San Juan	Multiple	1805		SWV	16000	FXS	-		
San Juan	Multiple	1806		SWV	16000	FXS	-		
San Juan	Multiple	1807		SWV	16000	FXS	-		
San Juan	St. Maarten	ATS Hotline		SWV	16000	FXS	-		
San Juan	St. Maarten	ATS Hotline		SWV	16000	FXS	-		
San Juan	St. Maarten	ATS Hotline		SWV	16000	FXS	-		
San Juan	St. Maarten	ATS Hotline		SWV	16000	FXS	-		
San Juan	Teleport	dial-out	2400	SWV	16000	FXS	-		
San Juan	Dom. Rep.	ATS Hotline		VSD	16000	E&M	DOMSAN_VSD		
San Juan	Dom. Rep.	ATS Hotline		VSD	16000	E&M	DOMSAN_VSD1		
San Juan	St. Maarten	ATS Hotline		VSD	16000	E&M	SANST._VSD		
San Juan	Caracas	ATS Hotline		VSD	16000	E&M	CARSAN_VSD	NOK	Frequentis to work with FAA on solving problem
St. Maarten	San Juan (29.05.)	3501		SWV	16000	FXS	-	OK	
St. Maarten	E/CAR			SWV	16000	FXS	ST.E/C_SWV1	OK	

Node Origin	Node Dest.	Ext.	Dest Ext.	Service	Data Rate	Interface	Circuit ID	Operational?	Action
St. Maarten	E/CAR			SWV	16000	FXS	ST.E/C_SWV2	OK	
St. Maarten	E/CAR			SWV	16000	FXS	ST.E/C_SWV3	OK	
St. Maarten	E/CAR			SWV	16000	FXS	ST.E/C_SWV4	OK	
St. Maarten	Teleport	3500	2400	SWV	16000	FXS	-	OK	
St. Maarten	Teleport	spare	spare	VSD	16000	E&M	-	HW available, no bandwidth use	
St. Maarten	San Juan	ATS Hotline		VSD	16000	E&M	SANST._VSD	NOK	LOA to be completed
Merida	Multiple	1600		SWV	16000	FXS	-		
Merida	Multiple	1602		SWV	16000	FXS	-		
Merida	Teleport	dial-out	2400	SWV	16000	FXS	-		
Merida	Cuba	1601	2355	VSD	16000	E&M	CUBMER_VSD		

**Notes:**

The 16000 bps for voice circuits in the table above is for indication. MEVA III voice circuits rate is left to the Tenderer to select provided it complies with Attachment II Section C 12.4