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

WORKING PAPER

MEVA/TMG/32 — WP/06
24/04/17

Thirty second MEVA Technical Management Group Meeting (MEVA/TMG/32)
Havana, Cuba, 10 to 12 May 2017

Agenda Item 4: **Network interconnection Activities and new circuits**
4.2 MEVA III – Eastern Caribbean (E/CAR) Aeronautical Fixed Service (AFS) Network Interconnection

MEVA III INTERCONNECTION MATTERS

(Presented by United States)

EXECUTIVE SUMMARY

This working paper presents an update on the interconnection between MEVA III Network, the REDDIG II, and E/CAR AFS Networks, requesting the follow-up and latest updates from the involved parties.

Action:	The suggested actions are detailed under Section 3.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency
References:	• Thirty first MEVA Technical Management Group Meeting (MEVA/TMG/31), Kingston, Jamaica, 24 to 26 May 2016 • CAR Region – Venezuela Coordination Teleconference – 17 December 2015

1. Introduction

1.1 The MEVA III and REDDIG II Networks have been operational since 2015. From the MEVA III and the REDDIG II Network implementation, it was agreed under Conclusion MEVA/TMG/31/6 - *Follow up to Implementation of MEVA III/REDDIG II Interconnection Circuit Requirement,* that in order to conduct a follow-up interconnection circuits requirements, States involved report updates to this implementation to the MEVA/TMG/32 Meeting.

1.2 The interconnection requirements are shown in the following table:

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 • Caracas - Atlanta • Brasilia - Atlanta • Lima - Atlanta • Bogotá – Panama	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

2. **Discussion**

2.1. Since the last Technical Management Group (TMG) Meeting, United States (Federal Aviation Administration (FAA)) initiated and/or continued coordination with Brasilia, Brazil, Lima, Peru, Trinidad and Tobago and Caracas, Venezuela for testing and implementing Aeronautical Message Handling System (AMHS). Ratification of bilateral Technical Letter between States identifying agreement and necessary steps that must be finalized prior to implementation has been completed by most States. Other States have already transitioned to AMHS.

2.2 A teleconference was held between the CAR Region and Venezuela on December 2015 to reactive the coordination and agreements made on several topics. Following is the outcome of the teleconference:

- **Trinidad and Tobago and Atlanta**

  - This circuit will be interconnected through the MEVA III/REDDIG II Node in COCESNA (Tegucigalpa, Honduras) and neither through Venezuela nor Colombia.

    - A technical and commercial proposal was received from COCESNA for Trinidad and Tobago to have an alternate route as a contingency: COCESNA will combine PIARCO's traffic and switch the PIARCO traffic to Atlanta (no dedicated circuit path for Trinidad and Tobago between COCESNA and Atlanta). The COCESNA solution is being reviewed. An AMHS contingency was also requested and received from IDS-NA which is being reviewed

  - ICAO and the MEVA TMG in conjunction with COCESNA, FAA and the MEVA III Service Provider will review the technical/cost requirements for the implementation of the AMHS circuit Trinidad and Tobago- Atlanta (through the MEVA III/REDDIG II Node in COCESNA) and inform REDDIG and Trinidad and Tobago of the results during TMG/32 Meeting.

2.3 Identification of needs and performance – interregional

- **Trinidad and Tobago and Georgetown**

  - Trinidad and Tobago indicated that the Aeronautical Fixed Telecommunication Network (AFTN) circuit to Georgetown, which is now through Maiquetia but originally a direct connection PIARCO-Georgetown, is requested. Trinidad and Tobago specified that Guyana will interconnect with them as a User Agent (UA) in the PIARCO AMHS System. This matter was included by the SAM Office in the discussion on the REDDIG Network Meeting of March 2016. The connection PIARCO-Georgetown over AFTN was restored on October 26, 2016. Transition to AMHS is planned for later this year.

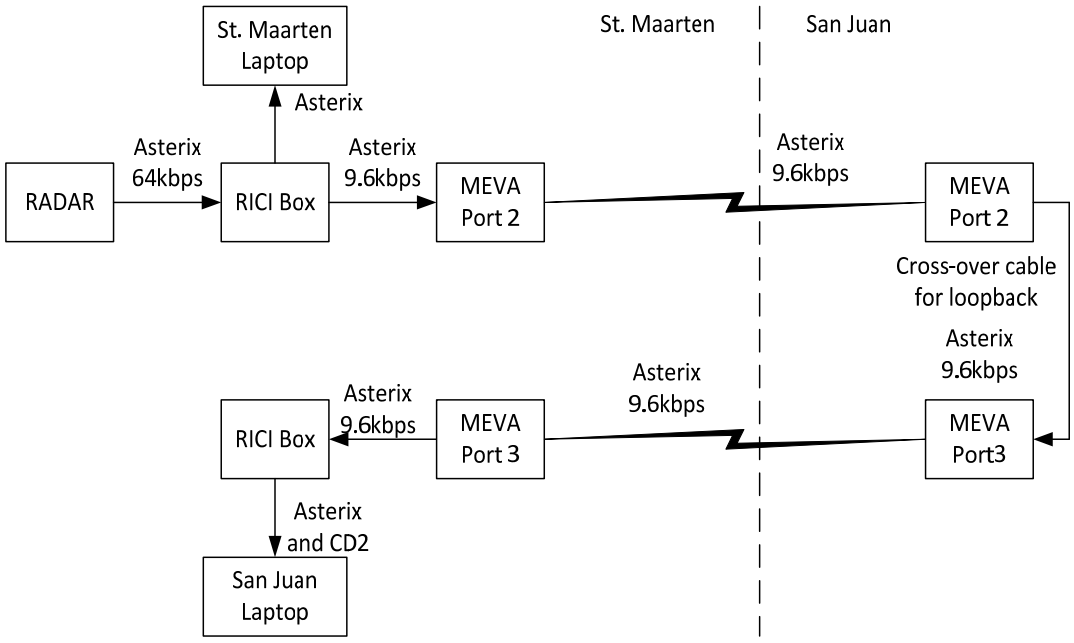
2.4 Radar Data Exchange

2.4.1 The FAA is supporting the exchange of RADAR between Sint Maarten and Trinidad and Tobago through an interconnection of the E/CAR Network to the MEVA III Network at the San Juan (ZSU) CERAP.

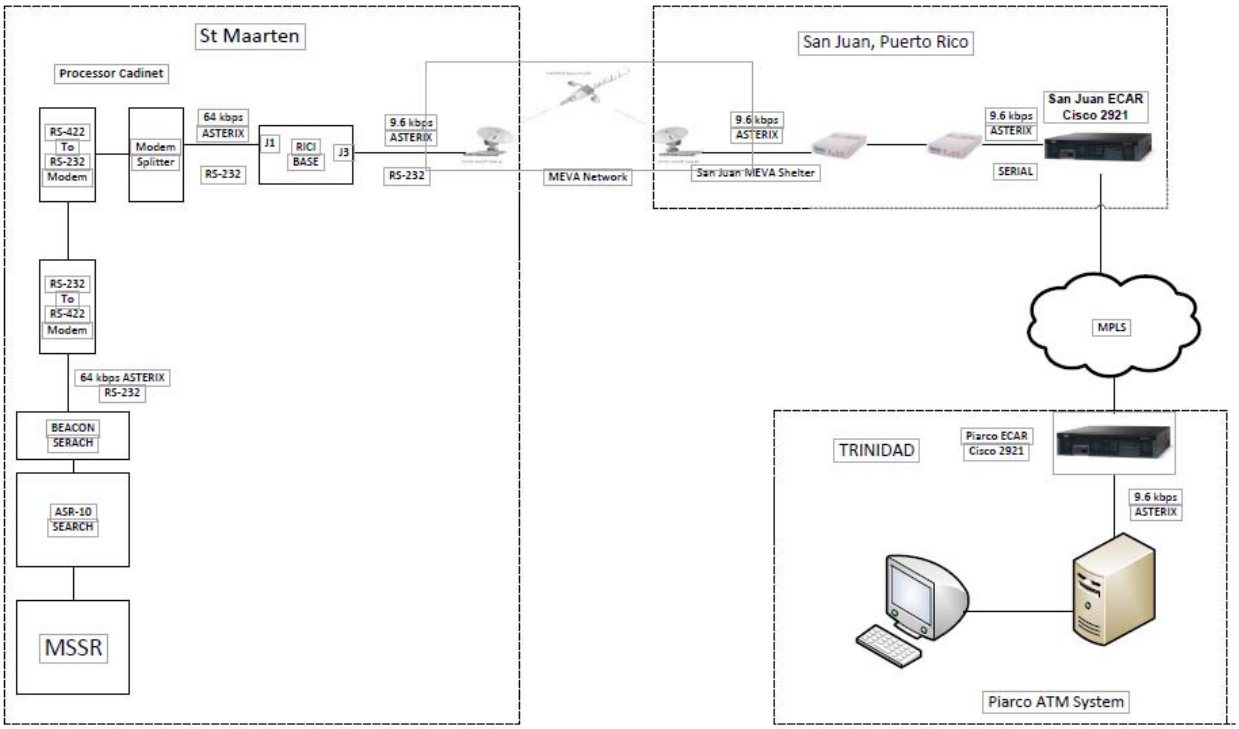
- A proof of concept testing was done earlier in 2016 between San Juan and Sint Maarten through the MEVA III Network. The Sint Maarten RADAR output is in Asterix formatted datagrams clocked at 64kbps and the MEVA III service is a 9.6kbps.

- The proof of concept testing showed that the 64kbps output of the RADAR could be sent using the 9.6kbps MEVA III service for transport between MEVA III sites in San Juan and Sint Maarten. The Asterix format could be converted to CD2 format for possible future use at ZSU using Sunhillo Real Time Interface and Conversation Item (RICI) boxes for compression and conversion.

2.5 The following diagram depicts the process:



2.6 Further to the proof of concept tests, the following diagram depicts a possible solution to transmit RADAR data from Sint Maarten to Trinidad and Tobago over the MEVA/ECAR AFS Networks using one (1) RICI box in Sint Maarten over a serial connection:



2.6.1 Please note that only one (1) channel of the MEVA satellite duplex circuit was used to transmit RADAR information from Sint Maarten to San Juan. The other channel of the duplex circuit will be used for a RADAR stream from Trinidad and Tobago to Sint Maarten. This duplex operation exchanging separate RADAR streams was not tested and should be confirmed through futher proof of concept testing before attempting to exchange RADAR data operationally.

2.7 PIARCO-San Juan Hotline

2.7.1 The FAA and Trinidad and Tobago Civil Aviation Authority (TTCAA) have agreed to the implementation of the hot line as indicated in the Caribbean Initiative. The FAA has ordered an E&M card for the San Juan operational voice switch and identified the extension to be used to support the new shout service. A ring-down hotline was implemented in November 2016. After clarification it was confirmed that the requirement is for a shout-line where either party can pick up and talk without waiting for a ring. Trinidad and Tobago is working with the E/CAR AFS Network service provider to formulate and implement a solution.

3. **Suggested Actions**

3.1 The Meeting is invited to

a) review the information presented in this working paper;

b) that United States and CAR States identified in paragraph 2.1 continue their coordination for AMHS implementation and inform on any progress made on the MEVA III-REDIG II interconnection;

c) Trinidad and Tobago and Sint Maarten inform on their radar data exchange progress;

d) United States and Trinidad and Tobago report on the progress of completing implementation of PIARCO-San Juan Shout line and;

e) take any other action as deemed necessary

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