



Agenda

Item 2: Temporary REDDIG proposal to improve and increase communication services between adjacent CAR-SAM FIRs

NEW SCHEME FOR THE MEVA III – REDDIG II INTERCONNECTION

(Presented by the Secretariat)

SUMMARY	
<p>This working paper presents the initiative to make improvements in communications for the States of the interface of the CAR and SAM Regions, formulated by the Coordination Committee of the Regional Technical Cooperation Project RLA/03/901 (REDDIG RCC) at its Twenty-Seventh (Extraordinary) Meeting, on 31 August, 2021.</p>	
REFERENCES	
<ul style="list-style-type: none"> • First Coordination Meeting of the MEVA III – REDDIG II Interconnection (MIII-RII/INTERCON/01), Oranjestad, Aruba, 25 to 26 May 2015; and • Twenty-Seventh (Extraordinary) Meeting of the Coordination Committee of the Regional Technical Cooperation Project RLA/03/901 (REDDIG RCC/27 - Virtual, 31 August, 2021). 	
ICAO Strategic Objectives:	<p><i>A – Safety</i> <i>B – Air Navigation Capacity and Efficiency</i></p>

1. Introduction

1.1 During the Twenty-Seventh (Extraordinary) Meeting of the Coordination Committee of Project RLA/03/901 (RCC/27 – Virtual, 31 August, 2021), participants analysed the possibility and desirability of installing REDDIG II nodes (MPLS) in 4 Caribbean States, in order to meet current and future communication requirements between the States/Organisation in the CAR/SAM interface.

1.2 In this regard, the Committee approved Conclusion RCC/27-1 REDDIG II Ground Network Node (MPLS) Deployment in States of the CAR Region, and requested ICAO to take the necessary steps to contact the civil aviation authorities of Aruba, Curaçao, Jamaica and United States to obtain authorisation for the installation of REDDIG II nodes (MPLS) at no cost for these States, significantly improving communications between States in the CAR/SAM interface.

1.3 This new scheme would replace the limited satellite circuits with more modern communications, providing broader bandwidth, lower latency and high availability, guaranteeing all communications supported by the previous interconnection scheme adopted at the First Coordination Meeting of the MEVA III – REDDIG II Interconnection (MIII-RII/INTERCON/01), Oranjestad, Aruba, 25-26 May, 2015 and making possible the establishment of new communications required by States, at no additional cost.

2 Analysis

2.1 At the CAR/SAM interface, the States/Organisation that have communication requirements are:

- Aruba;
- Curaçao;
- **COCESNA;**
- **Colombia;**
- Jamaica;
- **Panama;**
- **Trinidad & Tobago;**
- **United States (Atlanta);**
- United States (San Juan); and
- **Venezuela.**

2.2 It is important to note that the States/Organisation highlighted (in bold) already have REDDIG II ground network nodes (MPLS) in place or in the process of implementation (Panama). Figure 1 presents the Flight Information Regions (FIRs) in the CAR/SAM interface.

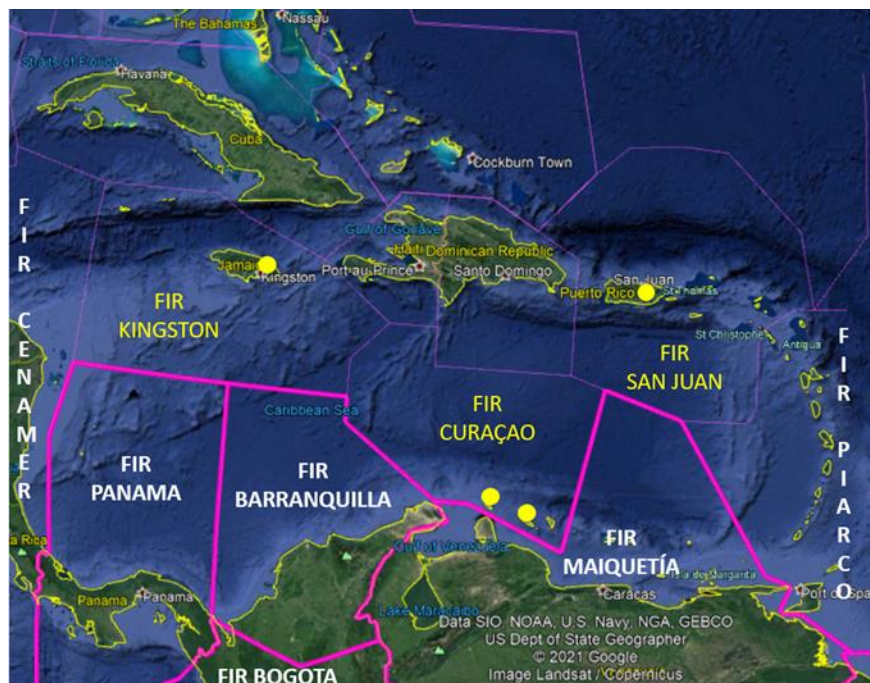


Figure 1 – CAR/SAM Interface

2.3 Currently, the MEVA III nodes of Bogota and Caracas are hired using resources of Regional Technical Cooperation Project RLA/03/901, as per Contract No 22501528 between ICAO (on behalf of REDDIG II members) and the telecommunication provider of the MEVA III network (Frequentis).

2.4 An analysis conducted by the REDDIG II Coordination Committee concluded that communications at the CAR/SAM interface could be improved by switching from MEVA III satellite circuits to REDDIG II ground network circuits (MPLS), without significant increase in procurement costs.

2.5 In this regard, the following conclusion was formulated:

CONCLUSION RCC/27-1	DEPLOYMENT OF REDDIG II GROUND NETWORK NODES (MPLS) IN STATES OF THE CAR REGION
<p>That the Secretariat: Take the steps described below, with the objective of implementing REDDIG II nodes (MPLS) in the States of the CAR Region:</p> <ul style="list-style-type: none"> a) Confirm with Panama the intention to be part of Regional Project RLA/03/901 or the contracting of the service directly with the telecommunication provider (Lumen); b) Confirmed item a), make the corresponding arrangements for the implementation of REDDIG II nodes (MPLS) in the following CAR States: Aruba, Curaçao, Jamaica and Puerto Rico; considering that the cost should not exceed USD 5,100.00 per month for the hiring of all nodes, without AOSC. c) Prioritise the contracting of the nodes of Curaçao, Jamaica and Puerto Rico, in case the value of item b) is higher than that established and provide a technical solution for communications with Aruba. d) Costs will be shared by the States participating in Regional Project RLA/03/901. e) Coordinate, with the support of the NACC Office, to obtain the authorisation by the CAR States involved for the implementation of the nodes. f) Contract 22501528 for the MEVA III nodes of Bogota and Caracas must be cancelled as soon as the REDDIG II nodes are established in the CAR States. 	<p>Expected impact:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Interregional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
<p>Why: To provide better communications with CAR States located in the CAR/SAM interface, which have communication requirements planned with States participating in Regional Project RLA/03/901 (REDDIG II).</p>	
<p>When: Immediately</p>	<p>Status: Approved at the RCC/27 meeting</p>
<p>Who: <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO SAM Secretariat <input type="checkbox"/> Others: ICAO NACC and CAR States</p>	

2.6 In the proposed scheme, REDDIG II nodes (MPLS) would be installed in Aruba (Oranjestad), Curaçao (Willemstad), United States/Puerto Rico (San Juan) and Jamaica (Kingston) for a short period (two years), until the implementation of the CANSNET network that will replace the existing MEVA III network. It is estimated that the CANSNET network would be operational by the end of 2024.

2.7 Figure 2 illustrates the new proposed scheme.

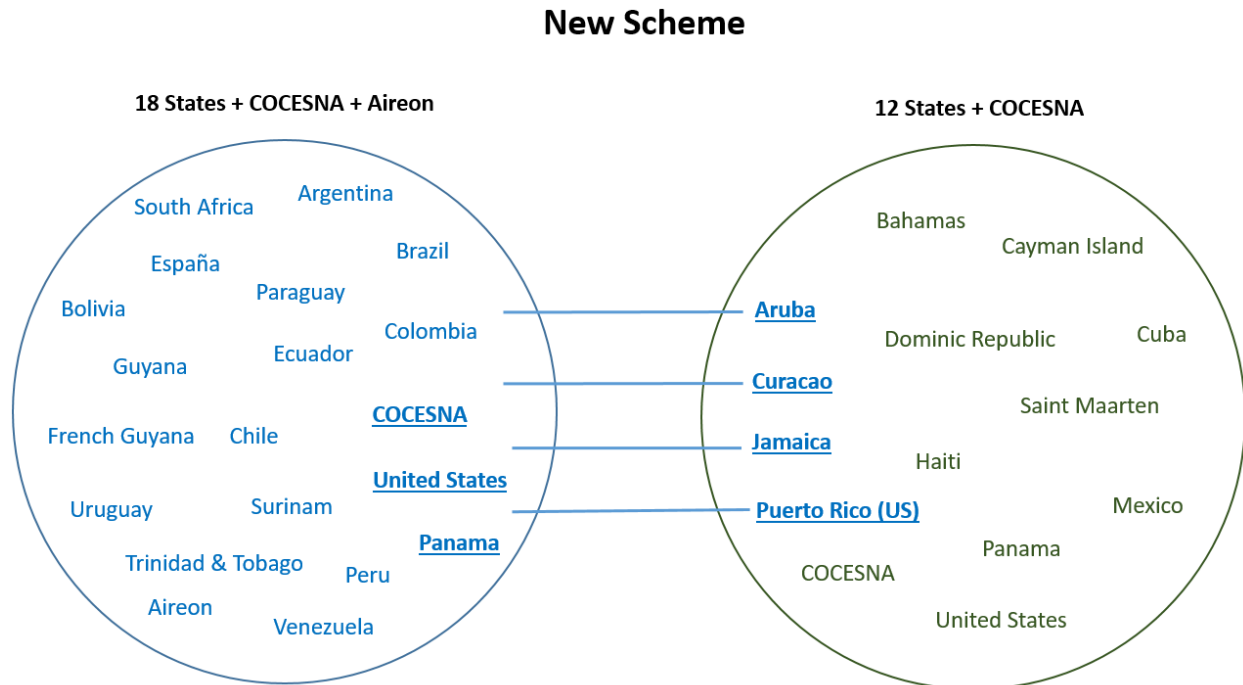


Figure 2 – New MEVA III – REDDIG II interconnection scheme

2.8 The characteristics of MPLS links for CAR States are:

- 5 Mbps bandwidth;
- 99.7% monthly availability;
- BER less than 10^{-7} , 99.5% of the time; and
- The RTT for transmission of a 64-byte packet between two nodes cannot exceed 150 ms in 95% of the measurements made, in a minimum time window of 10 seconds.

2.9 As REDDIG II is a full-meshed network, it is possible to establish IP circuits with any of the nodes, sufficing coordination between the States/Organisation involved and the network administrator.

2.10 As stated above, this configuration would be temporary, awaiting the future implementation of the CANSNET and REDDIG III networks, which are under study, and it is expected that the technical specifications will contain requirements for communication service providers (CSP) to ensure the interconnection between the networks, in a transparent manner to users, through network-to-network interface (NNI) agreements between telecommunication providers. Figure 3 illustrates this situation.

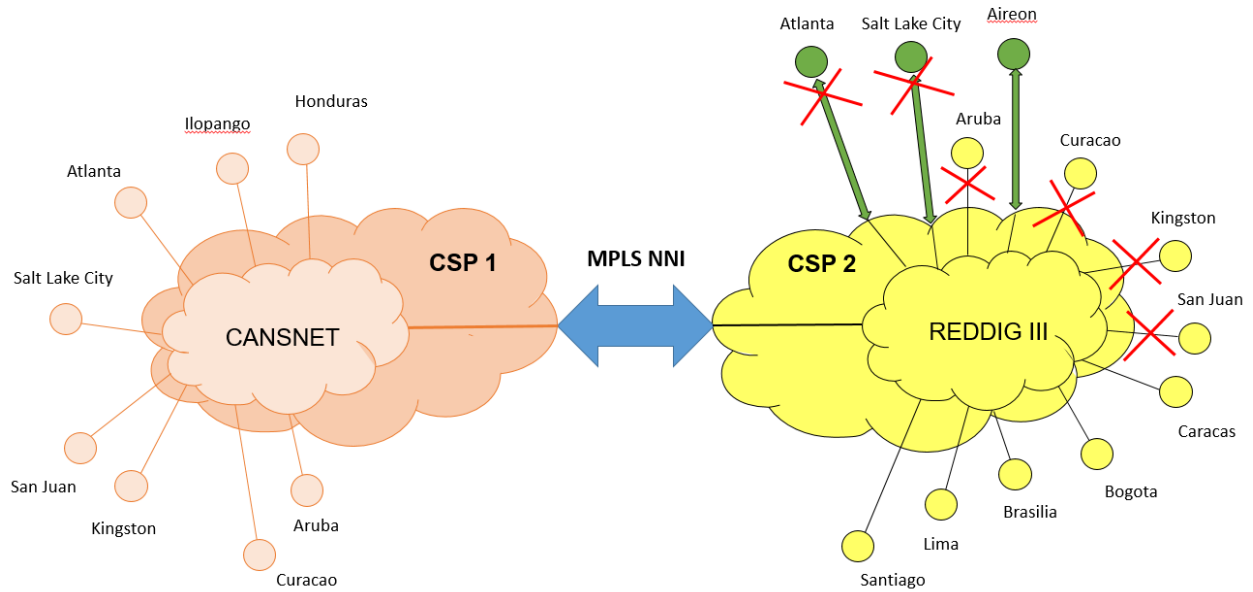


Figure 3 – Interconnection between the future CANSNET and REDDIG III networks

3. Conclusion

3.1 The proposal to temporarily change the MEVA III – REDDIG II interconnection scheme is an extraordinary demonstration of cooperation of REDDIG II member States for the CAR/SAM interface, enabling better communications until the future regional networks are implemented.

4. Suggested action

The Meeting is invited to:

- a) take note of the information presented in this working paper;
- b) discuss the adoption of the proposed new MEVA III – REDDIG II interconnection scheme; and
- c) take any other action it may deem appropriate.