



**Nineteenth Meeting of the CAR/SAM Planning and Implementation Group
(GREPECAS/19)
Online, 27 - 29 October 2021**

Agenda Item 3: GREPECAS work programmes, objectives and results

**NEW SCHEME TO IMPROVE COMMUNICATIONS FOR
STATES AT THE INTERFACE OF THE CAR AND SAM REGIONS**

(Presented by the Secretariat)

EXECUTIVE SUMMARY	
This information paper presents the initiative to introduce communication improvements for States at the interface of the CAR and SAM Regions, formulated by the Coordination Committee of Regional Technical Cooperation Project RLA/03/901 (REDDIG RCC) at its twenty-seventh (extraordinary) meeting, on 31 August 2021.	
<i>Strategic objectives:</i>	<ul style="list-style-type: none"> • Air Navigation Capacity and Efficiency • Safety
<i>References:</i>	<ul style="list-style-type: none"> • First MEVA III/REDDIG II Interconnection Coordination Meeting (MIII-RII/INTERCON/01); and • Twenty-seventh (extraordinary) meeting of the Coordination Committee of Regional Technical Cooperation Project RLA/03/901 (REDDIG RCC/27)

1. Introduction

1.1 In 2015, during the MEVA III - REDDIG II Interconnection Coordination Meeting (Oranjestad, 25-26 May 2015), a memorandum of understanding (MoU) was adopted between the States/Territories/Organisations participating in the MEVA III network and the International Civil Aviation Organization (ICAO), representing the States/Organisations participating in Regional Technical Cooperation Project RLA/03/901, which supports the SAM digital network (REDDIG II).

1.2 Table 1 presents the communications established through this interconnection scheme.

Table 1 – Communications established in 2015

No.	Sites	Requirement
<i>Connectivity through the Caracas, Venezuela MEVA III site</i>		
1	Curaçao/Caracas (Venezuela)	1 ATS voice A 1 AFTN data, 2400 bps, X.25, IA5
2	Aruba/Josefa Camejo (Venezuela)	1 ATS voice A
3	Atlanta (United States)/Caracas (Venezuela)	1 AFTN data, 9600 bps, X.25, IA5
4	San Juan (Puerto Rico)/Caracas (Venezuela)	1 ATS voice A
5	San Juan (Puerto Rico)/Caracas (Venezuela) Curaçao/Caracas (Venezuela) Aruba/Josefa Camejo (Venezuela)	ATS voice D
<i>Connectivity through the Bogota, Colombia MEVA III site</i>		
6	Barranquilla (Colombia)/Curaçao Barranquilla (Colombia)/Jamaica Barranquilla (Colombia)/Panama	ATS voice A ATS voice A ATS voice A
7	Bogota (Colombia)/Panama	1 AFTN data, 2400 bps, X.25, IA5
8	Bogota (Colombia)/Panama Cali (Colombia)/Panama Medellín (Colombia)/Panama San Andrés (Colombia)/Panama Jamaica/Barranquilla (Colombia) Curaçao/Bogota (Colombia) Panama/Bogota (Colombia)	ATS voice A ATS voice A ATS voice A ATS voice A ATS voice D ATS voice D ATS voice D
9	Lima (Peru)/Atlanta (United States)	1 AFTN data, 9600 bps, X.25, IA5
10	Atlanta (United States)/Manaus (Brazil)	1 AFTN data, 9600 bps, X.25, IA5
<i>Connectivity through the Tegucigalpa, Honduras MEVA III site</i>		
11	COCESNA/Guayaquil COCESNA/Bogota	ATS voice

1.3 The implementation of MEVA III nodes in two SAM States (Colombia and Venezuela) allowed the establishment of the connections shown in Table 1, from 1 to 10. Figure 1 shows the scheme adopted in 2015.

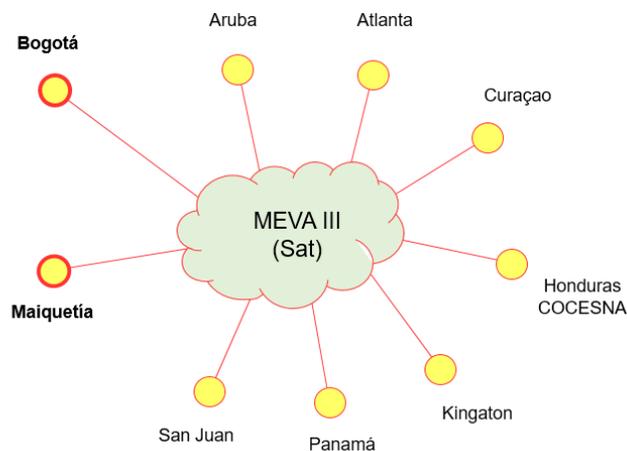


Figure 1 – Scheme adopted in 2015

1.4 The satellite links for the Bogotá and Maiquetía sites are contracted by ICAO from the telecommunications provider of the MEVA III network (Frequentis), with resources from Regional Technical Cooperation Project RLA/03/901.

1.5 Communication requirements between States have increased due to the implementation of new systems (AMHS, ADS-B, AIDC, data link, etc.) and will continue to increase with the implementation of the SWIM (system-wide information management) concept.

2 Discussion

2.1 At the interface between the CAR and SAM Regions, the States/Organisations that have communication requirements are various States of the CAR Region:

- Aruba;
- Curacao;
- **COCESNA;**
- **Colombia;**
- Jamaica;
- **Panama;**
- **Trinidad and 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 are in the process of implementation (Panama and COCESNA). Figure 3 shows the flight information regions (FIRs) at the interface between the CAR and SAM Regions.

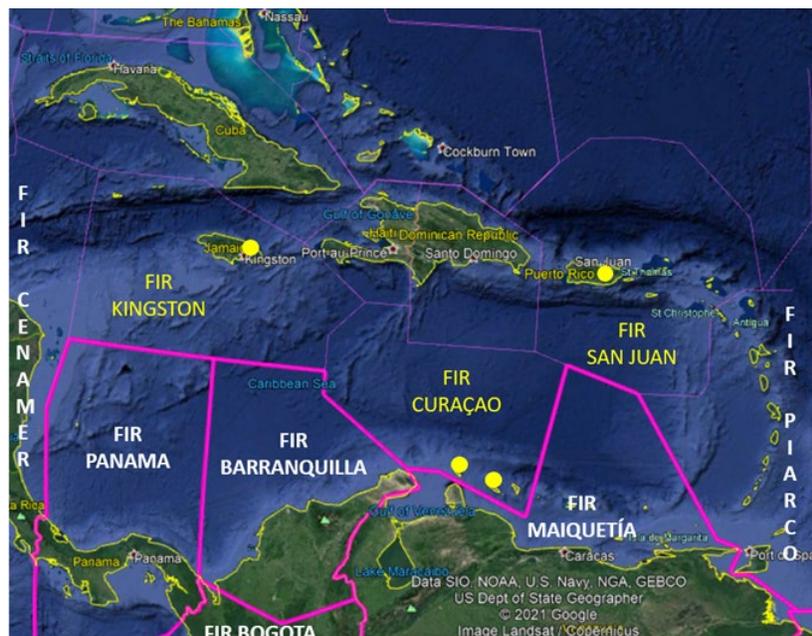


Figure 2 – Interface between the CAR and SAM Regions

2.3 During the Twenty-seventh (extraordinary) meeting of the Coordination Committee of Project RLA/03/901 (RCC/27 - online, 31 August 2021), participants discussed the possibility and convenience of installing REDDIG II (MPLS) nodes in 4 Caribbean States in order to meet current and future communication requirements between the States/Organisations at the interface between the CAR and SAM Regions.

2.4 In this regard, the Committee adopted Conclusion RCC/27-1 *Implementation of REDDIG II ground network nodes (MPLS) in CAR States*, and requested ICAO to take the necessary steps to contact the civil aviation authorities of the Caribbean States to obtain authorisation for the installation of the REDDIG II (MPLS) nodes, **at no cost to these States**, allowing for a significant improvement in communications between the States at the interface between the CAR and SAM Regions.

2.5 Therefore, considering the REDDIG approach in its conclusion RCC / 27-1A, the NACC Regional Office will communicate and advise some States regarding the opportunity for the facilities of these nodes and their consideration of this initiative, and taking into account that it requires coordination and technical evaluation as a network by the MEVA Group, the members of the MEVA network, through their MEVA Technical Group, will carry out an analysis of the technical implications and the implicit changes of this proposal. For this, the MEVA TMG Group in coordination with REDDIG will hold technical meetings in November 2021 for this exchange of information and definition of future actions.

2.6 Figure 3 shows the new proposed scheme.

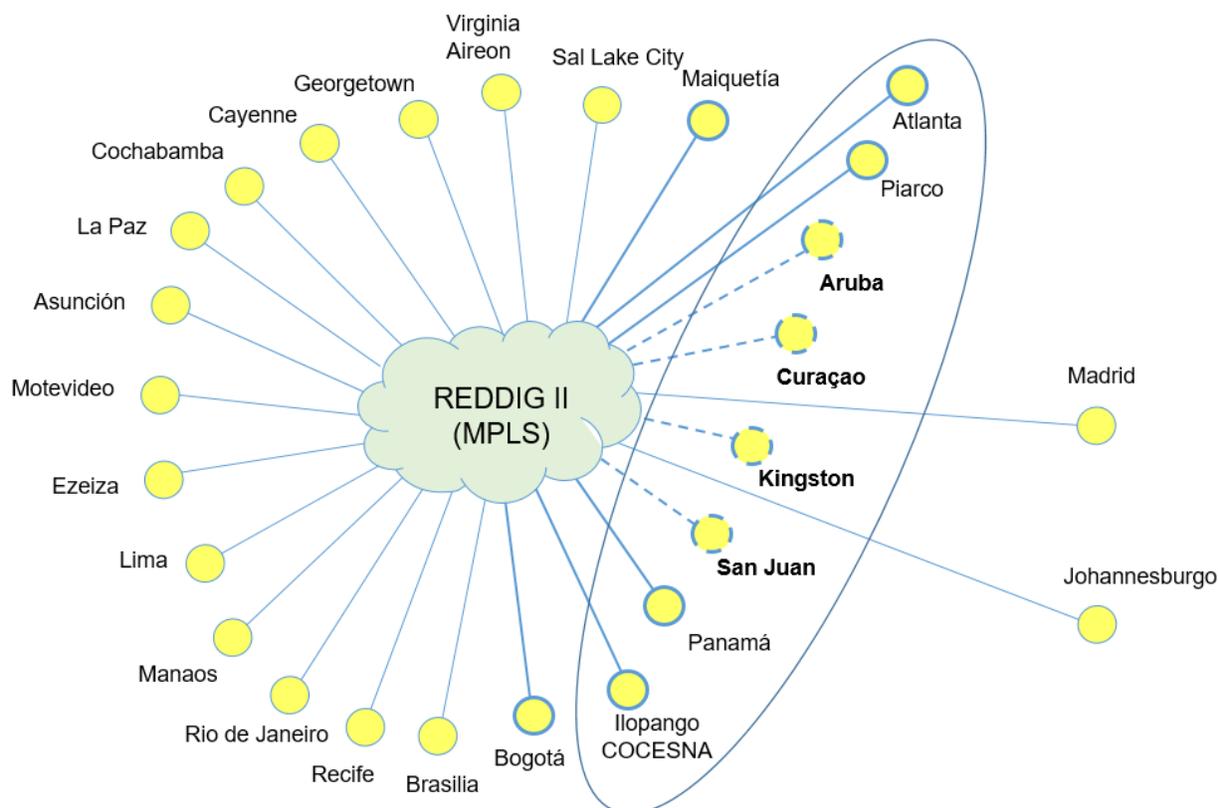


Figure 3 – Scheme proposed by the REDDIG II Coordination Committee

- 2.7 The MPLS links for CAR States have the following characteristics:
- 5 Mbps bandwidth;
 - 99.7 % monthly availability;
 - BER less than 10^{-7} , 99.5% of the time; and
 - The RTT of 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.

3 Conclusion

- 3.1 The Meeting is invited to take note of the information provided.