Agenda
Item 3: Review of the "MEVA – REDDIG Interconnection and Integration Agreements"

NEW AGREEMENT FOR THE MEVA III – REDDIG II INTERCONNECTION

(Presented by the Secretariat)

SUMMARY

This work paper presents a proposal for a new agreement between the States/Organisation of the CAR/SAM interface for the implementation of a new MEVA III-REDDIG II interconnection scheme, using REDDIG II ground network (MPLS) circuits, as proposed 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.

REFERENCES

- First Coordination Meeting of the MEVA III – REDDIG II Interconnection (MIII-RII/INTERCON/01), Oranjestad, Aruba, 25-26 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:	*A – Safety* *B – Air Navigation Capacity and Efficiency*

1. Introduction

1.1 In the interface of the CAR/SAM Regions, the States/Organisation that have communication requirements are: Aruba, Curaçao, COCESNA, United States (Atlanta), United States/Puerto Rico (San Juan), Jamaica and Trinidad & Tobago in the CAR Region. Also, Colombia, Panama and Venezuela in the SAM Region.

1.2 In accordance with the proposal contained in Conclusion RCC/27-1 Implementation of REDDIG II Ground Network Nodes (MPLS) in States of the CAR Region, of the REDDIG II Coordination Committee, the installation of REDDIG II nodes (MPLS) in Aruba, Curaçao, United States and Jamaica, at no cost to these States, would significantly improve communications between the States in the interface of the CAR and SAM Regions.

1.3 This new scheme would replace the limited satellite circuits with a modern communication, 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 enabling the establishment of new communications required by the States, improving integration between the States in the CAR/SAM interface.

2 Analysis

2.1 The implementation of a REDDIG II MPLS node consists of installing a point of presence (PoP) of the REDDIG II telecommunications provider (Lumen), usually by means of fiber optics, and customer premise equipment (CPE), connected to the client´s local area network (LAN) systems. Figure 1 illustrates a basic installation configuration.

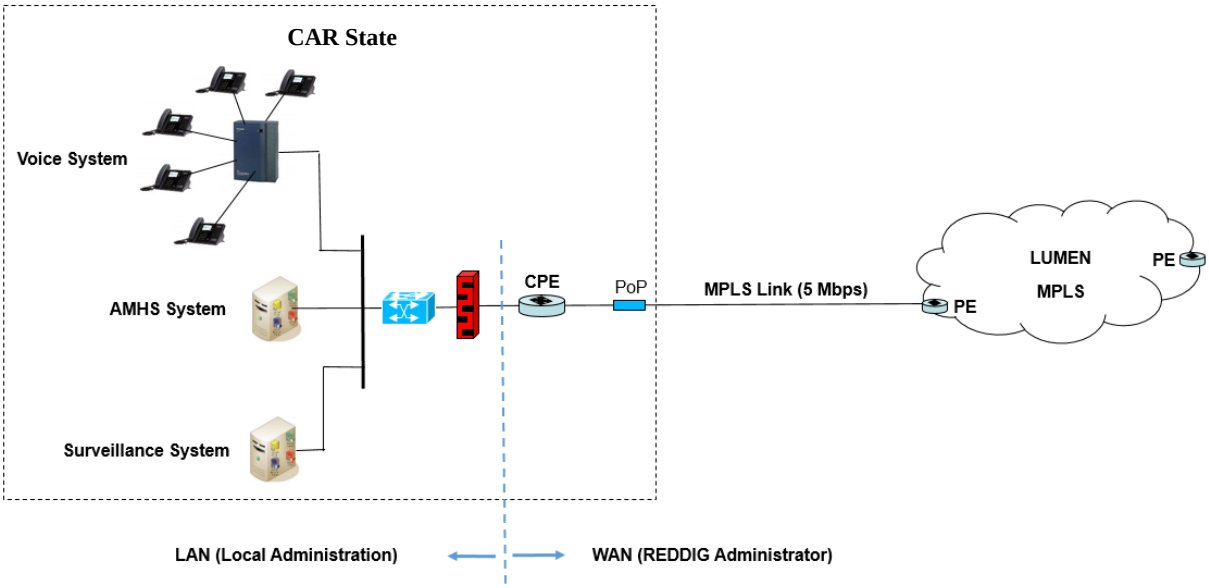

Figure 1 – Basic installation configuration of a REDDIG II MPLS node

2.2 The CPE is a COTS router that the telecommunications provider installs to provide the service. Typically, it is a computer that has Gigabit Ethernet interfaces to connect to computers/devices on the LAN of the client.

2.3 For the nodes of CAR States in Oranjestad, Willemstad, San Juan and Kingston, the monthly installation and service costs will be paid by ICAO (TCB), on behalf of the member States of Regional Technical Cooperation Project RLA/03/901 (REDDIG II Administration).

2.4 CAR States shall provide a room (technical room) with air conditioning, stabilised power and proper grounding. The equipment of the REDDIG II node (MPLS) may be installed in the current facilities of the MEVA III nodes of the CAR States.

2.5 After installation, the REDDIG Administrator will conduct node acceptance tests and, subsequently, in coordination with the local technical personnel, will start loading the necessary voice and data services.

2.6 The REDDIG II node is monitored 24 hours a day, 7 days a week, by the REDDIG II control centre (NCC) in Manaus, Brazil. In case of failure in the provision of the service, the NCC will contact the service provider to open a service "ticket", communicating the local technical staff the status of the link and measures taken.

2.7 At the discretion of the States, an agreement or technical letter may be signed to formalise the implementation of the node. The **Appendix** to this working paper presents a draft of the technical letter.

3. Conclusion

3.1 For the implementation of the new MEVA III – REDDIG II interconnection scheme, an authorisation of the administrations of Aruba, Curaçao, United States and Jamaica is required for ICAO to install the REDDIG II MPLS nodes, using resources of Regional Technical Cooperation Project RLA/03/901, authorised by the Coordination Committee of Project RLA/03/901.

4. Suggested action

4.1 The Meeting is invited to:

a) take note of the information contained in this working paper;

b) discuss the implementation of REDDIG II MPLS nodes in Aruba, Curaçao, Puerto Rico and Jamaica; and

c) take any other action it may deem appropriate.

- END -

TECHNICAL LETTER
BETWEEN THE
FEDERAL AVIATION ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA

AND

INTERNATIONAL CIVIL AVIATION ORGANIZATION
SOUTH AMERICA REGIONAL OFFICE

PROCEDURES FOR COORDINATING IMPLEMENTATION OF A REDDIG II MPLS NODE IN SAN JUAN – PUERTO RICO

EFFECTIVE IN MAY 2022

The Federal Aviation Administration of the United States Department of Transportation and International Civil Aviation Organization South America Regional Office, as Regional Coordinator of the Regional Project RLA/03/901, wish to cooperate with each other on technical and procedural arrangements associated with the implementation of a terrestrial SAM Digital Network (REDDIG) node, through a Multi-Protocol Label Switching (MPLS) provider. The objective is to establish better communications with the States/Organization in the interface of CAR and SAM Regions, using a technically improved infrastructure, which provides superior service. The node will be implemented with resources of the Regional Project RLA/03/901, according to the Conclusion RCC/27-1 of the Twenty Seventh Meeting of the REDDIG Coordination Committee (RCC/27).

I - PURPOSE

This Technical Letter ("TL") identifies and defines the procedures by which each party intends to provide and maintain the connection between the FAA networks/services in San Juan and the SAM Digital Network (REDDIG), coordinated by the International Civil Aviation Organization (ICAO) South America (SAM) Regional Office. The Federal Aviation Administration of the Department of Transportation of the United States of America ("FAA"), and ICAO SAM Regional Office agree to implement this connection to improve aeronautical communications between the States in the interface of the CAR and SAM Regions.

This service will have connections with permanent address schemes between the FAA network and REDDIG network as agreed and managed by both parties.

The FAA and ICAO SAM Regional Office firmly believe that the implementation of this service between the FAA network and REDDIG network will better support the ICAO SAM, Caribbean (CAR) and NAM

Regional networks by improving the distribution of aeronautical messages, traffic clearance requests and network diversity between participating States.

II- SERVICE LOCATIONS

The following are designated as service locations:

FAA: (TBD)

REDDIG: Centro de Control de la Red (NCC) REDDIG BRASIL-MANAUS
CINDACTA IV Av. do Turismo 1350,
Tarumã - CEP 69045-630
Manaus, AM
Tel: +55-92-3652 5713
Tel: +55-92-3652 5712
E-mail: jvittor@icao.int

III – PROCESS AND PROCEDURAL RESPONSIBILITIES

A. SERVICES

1. The messages exchanged between the FAA network and the REDDIG network shall be through the Internet Protocol Suite (IPS). The FAA and REDDIG administrator intend to mutually agree in separate writings upon the technical details of the service.

2. The following communications will be implemented:
   - ATS Voice A San Juan/Maiquetia;
   - ATS Voice D San Juan/Maiquetia;
   - (list other communications).

B. IMPLEMENTATION OF THE CIRCUITS AND SCHEDULING

1. The FAA and REDDIG administration intend to make their best efforts to coordinate, test and implement services toward an operational cutover.
2. The SAM Regional Office with support of the Technical Cooperation Bureau (TCB) will take the necessary measures to amend the Contract 22502088 with Lumen (former CenturyLink), in order to install a REDDIG II MPLS node in San Juan, with the following characteristic:

   a) 5 Mbps bandwidth link;
   b) 99.7 % for monthly availability;

c) The RTT for communications between the two stations, for a 64-byte packet, may not exceed 150 ms in 95 % of the measurements made in a minimum time window of 10 seconds; and
d) The bit error rate (BER) shall be less than 10-7, 99.5% of the time.The FAA will acquire dedicated telco services from Atlanta and Salt Lake City for connections to the REDDIG network.

3. The telecommunication service provider (Lumen) will install the Point of Presence (PoP) in a FAA facility, providing the necessary equipment, including a Customer Premises Equipment (CPE) with at least two standard Gigabit Ethernet interfaces.

4. With anticipation of at least 15 days, the telecom provider representative must contact the ATNS Technical Focal Point to schedule the node installation.

5. FAA shall:
   a) Provide the physical space for the installation of cabinets and equipment.
   b) Deliver to the premises the electric power required and grounding system.
   c) Maintain adequate environmental conditions (temperature, humidity, etc.) in the local where the PoP will be installed.
   d) Obtain all necessary authorization and assist the telecom provider representatives in the installation process of the node.

6. The REDDIG II Administrator will coordinate the configuration of the San Juan node (CPE) and the establishment of all communications agreed.

7. The router to be installed as CPE is the limit point dividing the Wide Area Network service, under responsibility of the REDDIG II Administrator, and the Local Area Network service, under responsibility of ATNS Technical Personnel.

8. FAA must provide the cabling infrastructure to connect the local systems to the REDDIG II node in Johannesburg. The connection of the local systems of San Juan to the REDDIG II node will be through standard Gigabit Ethernet ports.

9. Following the successful implementation of the node, loading of services will be scheduled in coordination with the REDDIG II Administrator.

C. MAINTENANCE AND RESTORATION OF SERVICE

1. The FAA and ICAO SAM Regional Office are obligated to notify each other at least thirty (30) days prior to making any changes to their portion of the service which will impact the operations and service between the two parties.

2. The FAA and ICAO SAM Regional Office will coordinate with each other to minimize anticipated interruptions of service and unnecessary engineering modifications to the service.

3. The FAA and ICAO SAM Regional Office intend to coordinate with each other for their respective maintenance and operational activities affecting the network and associated system service in advance.

4. When the REDDIG II Administration determines a networking problem is associated with a disruption, the ICAO SAM Regional Office shall notify the San Juan as soon as possible.

5. Outages affecting the network will be reported to both parties as soon as practical to do so. The restoration time for service shall be in accordance with the service provider maintenance manual and contract obligation. The FAA and ICAO SAM Regional Office anticipate that they will periodically exchange service performance and operation references, points of contact of service providers and other details regarding leased services.

6. The 24-hour single point of contact for all coordination regarding the service is:

FAA: (TBD)

REDDIG: Centro de Control de la Red (NCC) REDDIG BRASIL-MANAUS
CINDACTA IV Av. do Turismo 1350,
Tarumã - CEP 69045-630
Manaus, AM
Tel: +55-92-3652 5713 / +55-92-3652 5712
E-mail: jvittor@icao.int

IV – FINANCIAL PROVISIONING

A. Expenditures

1. The Administration of the Regional Technical Cooperation Project RLA/03/901 will make the necessary arrangements to amend the current contract with the REDDIG II telecommunication provider (Lumen), in order to install and provide service for the San Juan node.

2. FAA shall not incur any additional expenses associated with the establishment of the service for the duration of the agreement.

3. The period considered in this agreement is from the node installation until 31 December 2024, with potential extension being discussed with minimum anticipation of six month.

V – AMENDMENTS

This TL may be amended by mutual written agreement.

The FAA Enterprise Product Support Team and ICAO SAM Regional Office should execute amendments to this TL.

FAA:

(Name)
Manager, Enterprise Product Support Team
Federal Aviation Administration, AJM-3122
William J. Hughes Technical Center
Atlantic City International Airport, NJ 08405, USA
Tel: +1 609 485 4296
Email:

ICAO SAM Office:

Fabio Faizi Rahnemay Rabbani
Regional Director
ICAO South American Office
Av. Victor Andres Belaunde No. 147
Centro Empresarial Real, Edificio Real 4, Piso 4
San Isidro, Lima, Perú
Tel: +51 1 6118686
E-mail: frabbani@icao.int

The coordination points between the FAA Program Office and ICAO SAM Regional Office for any required amendments to this TL are designated as follows:

FAA:

(Name)
International Telecommunications Deputy
Federal Aviation Administration, AJM-3122
William J. Hughes Technical Center
Atlantic City International Airport, NJ 08405, USA
Tel:
E-mail:

REDDIG Administrator: Javier Vittor
REDDIG Administrator
Centro de Control de la Red (NCC) REDDIG BRASIL-MANAUS
CINDACTA IV Av. do Turismo 1350,
Tarumã - CEP 69045-630
Manaus, AM
Tel: +55-92-3652 5714 / +55-92-3652 5712
E-mail: jvittor@icao.int

VI – CONFIDENTIALITY & PROPRIETARY INFORMATION

Both parties undertake not to use or reveal to any third party any proprietary or confidential information about the other party unless required to by law or unless it is necessary to do so to provide the services.

The FAA and ICAO SAM Regional Office agree to the provisions of this agreement as indicated by the signatures of the duly authorized representatives below.

Federal Aviation Administration, USA	ICAO South America Regional Office
_____	_____
Andy Isaksen Manager, Enterprise Product Support Team FAA/AJM-3122	Fabio Faizi Rahnemay Rabbani ICAO SAM Regional Director
Date _____	Date _____