



Cuestión 3 del Orden del Día: Revisión de los “Acuerdos de interconexión e integración MEVA – REDDIG”

NUEVO ACUERDO PARA LA INTERCONEXIÓN MEVA III – REDDIG II

(Presentada por la Secretaría)

RESUMEN	
<p>Esta nota de estudio presenta una propuesta de nuevo acuerdo entre los Estados/Organización de la interfaz de la Región SAM para implementar un nuevo esquema para la Interconexión de las redes MEVA III y REDDIG II, a través de circuitos de la red terrestre (MPLS) de la REDDIG, conforme propuesto por el Comité de Coordinación del Proyecto Regional de Cooperación Técnica RLA/03/901 (REDDIG RCC) en su Vigésima Séptima Reunión (Extraordinaria), en 31 de agosto de 2021.</p>	
REFERENCIAS	
<ul style="list-style-type: none">• Primera Reunión de Coordinación de la Interconexión MEVA III – REDDIG II (MIII-RII/INTERCON/01), Oranjestad, Aruba, 25 al 26 de mayo de 2015; y• Vigésima Séptima Reunión (Extraordinaria) del Comité de Coordinación del Proyecto Regional de Cooperación Técnica RLA/03/901 (REDDIG RCC/27).	
Objetivos estratégicos de la OACI:	<i>A – Seguridad Operacional B - Capacidad y eficiencia de la navegación aérea</i>

1. Introducción

1.1 En la interfaz de las Regiones CAR/SAM, los Estados/Organización que tienen requerimientos de comunicaciones son: Aruba, Curaçao, COCESNA, Estados Unidos (Atlanta), Estados Unidos/Puerto Rico (San Juan), Jamaica y Trinidad & Tobago en la Región CAR. Asimismo, Colombia, Panamá y Venezuela en la Región SAM.

1.2 De acuerdo con la propuesta formulada en la Conclusión RCC/27-1 *Implantación de Nodos de la Red Terrestre (MPLS) de REDDIG II en Estados de la Región CAR* del Comité de Coordinación de la REDDIG II, la instalación de los nodos REDDIG II (MPLS) en Aruba, Curaçao, Estados Unidos y Jamaica, **sin costos para estos Estados**, posibilitaría una significativa mejora en las comunicaciones entre los Estados de la interfaz de las Regiones CAR y SAM.

1.3 Este nuevo esquema reemplazaría los limitados circuitos sateliticos por una comunicación más moderna, proporcionando mayor ancho de banda, menor latencia y alta disponibilidad; garantizando

todas las comunicaciones soportadas por el anterior esquema de interconexión adoptado en la Primera Reunión de Coordinación de la Interconexión MEVA III – REDDIG II (MIII-RII/INTERCON/01), Oranjestad, Aruba, 25 al 26 de mayo de 2015 y posibilitando el establecimiento de nuevas comunicaciones necesarias a los Estados, aumentando la integración entre los Estados de la interfaz de la Región CAR y SAM.

2 Análisis

2.1 La implantación de un nodo REDDIG II MPLS consiste en instalar un Punto de Presencia (PoP) del proveedor de telecomunicaciones de la REDDIG II (Lumen), normalmente por medio de fibra óptica, y un *Customer Premises Equipment* (CPE) que se conectará a los sistemas de la Red de Área Local (LAN) del cliente. La Figura 1 ilustra una configuración básica de instalación.

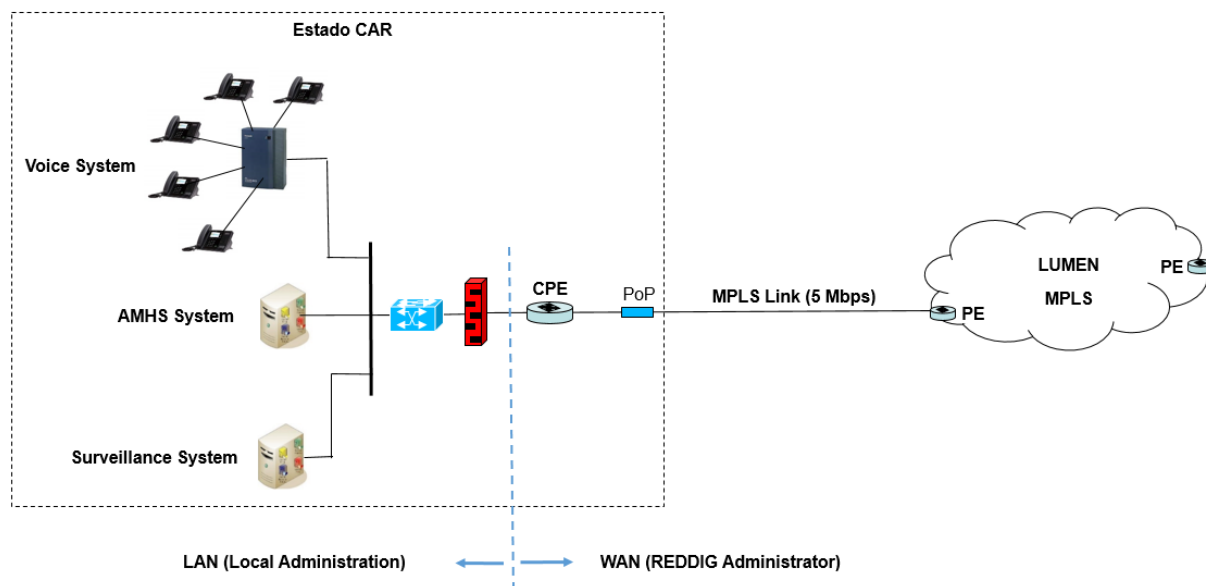


Figura 1 – Configuración básica de instalación de un nodo REDDIG II MPLS

2.2 El CPE es un enrutador (router) COTS que el proveedor de telecomunicaciones instala para proveer el servicio. Normalmente, es un equipo que tiene interfaces Gigabit Ethernet para conectar a los equipos de la LAN del cliente.

2.3 Para los nodos de los Estados CAR en Oranjestad, Willemstad, San Juan y Kingston, los costos de instalación y servicio mensual serán pagos por la OACI (TCB), en nombre de los Estados integrantes del Proyecto Regional de Cooperación Técnica RLA/03/901 (Administración de la REDDIG II).

2.4 Los Estados CAR deberán proporcionar un local (Sala Técnica) con climatización, energía estabilizada y adecuada toma a tierra. Los equipos del nodo REDDIG II (MPLS) podrán ser instalados en las actuales instalaciones de los nodos MEVA III de los Estados CAR.

2.5 Después de instalado, el Administrador REDDIG hará las pruebas de aceptación del nodo y, posteriormente, en coordinación con el personal técnico local iniciará el cargamento de los servicios de voz y datos necesarios.

2.6 El nodo REDDIG II es monitoreado 24 horas, 7 días de la semana, por el Centro de Control de la REDDIG II (NCC) en Manaus – Brasil. En caso de falla en la prestación del servicio, el NCC contactará al proveedor de servicio para abrir un “ticket” de servicio, comunicando el personal técnico local el estado del enlace y providencias tomadas.

2.7 A criterio de los Estados un Acuerdo o Carta Técnica podrá ser firmado para formalizar la implantación del nodo. El **Apéndice** a esta nota de estudio presenta un borrador de un documento de Carta Técnica.

3. Conclusión

3.1 Para la implementación del nuevo esquema de la Interconexión MEVA III – REDDIG II es necesaria la autorización de las administraciones de Aruba, Curaçao, Estados Unidos y Jamaica para que la OACI instale los nodos REDDIG II MPLS, utilizando recursos del Proyecto Regional de Cooperación Técnica RLA/03/901, autorizados por el Comité de Coordinación del Proyecto RLA/03/901.

4. Acciones requeridas

4.1 Se invita a la Reunión a:

- a) Tomar nota de la información expuesta en la presente nota de estudio;
- b) Deliberar sobre la implantación de los nodos REDDIG II MPLS en Aruba, Curaçao, Puerto Rico y Jamaica; y
- c) Tomar otras acciones que considere conveniente.

**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)
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Federal Aviation Administration, AJM-3122
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Tel:
E-mail:

REDDIG Administrator: Javier Vittor
REDDIG Administrator
Centro de Control de la Red (NCC) REDDIG BRASIL-MANAUS
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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 _____