



Agenda Item 2: Proposal for the addition of nodes to the REDDIG II MPLS network

Agenda Item 3: Administrative provisions

ADDITIONAL NODES IN THE REDDIG II (MPLS) BACKUP NETWORK

(Presented by the Secretariat)

SUMMARY

This working paper presents the background and the administrative provisions for the establishment of additional nodes in the REDDIG II (MPLS) backup network by States/organisations of other Regions not participating in Regional Project RLA/03/90.

REFERENCES

- Report of the Twenty-third meeting of the SAM Implementation Group (SAM/IG/23) – Lima, 20-24 May 2019.
- Report of the Thirty-fourth meeting of the MEVA technical management group (MEVA/TMG/34) – Miami, 11-13 June 2019.

ICAO strategic objectives:

A – Safety

C – Environmental protection and sustainable development of air transport

1. Background

1.1 At the SAM Implementation Group meeting (SAM/IG/23 – Lima, 20-24 May 2019), the Secretariat presented working paper SAM/IG/23-WP/10 on a proposal to use the backup network (MPLS) of REDDIG II to provide an alternate link for communications, which are currently routed through the MEVA III – REDDIG II interconnection, mainly AMHS connections between the Atlanta COM centre and the COM centres of Brasilia, Caracas, and Lima. **Appendix A** to this working paper presents SAM/IG/23-WP/10.

1.2 The SAM/IG/23 meeting considered that the proposal was appropriate, since it would provide higher-quality communications with no additional costs for the participants of the RLA/03/901 Regional Project, reason why it was requested to the Secretariat to refer this matter to the Coordination Committee of Regional Project RLA/03/901 (REDDIG) for consideration regarding the administrative and technical aspects for the implementation of the additional nodes.

1.3 The FAA has expressed interest in the proposal, since, in case of failure of the MEVA III – REDDIG II interconnection, communications would be lost with three main COM centres of the SAM Region. In this regard, it has sent a letter expressing its intention to obtain access to the REDDIG ground network (MPLS), directly contracting with the telecommunication provider, CenturyLink.

1.4 The proposal was also discussed at the MEVA/TMG/34 meeting (Miami, 11-13 June 2019), where the NAM/CAR States/organisations that had communications with SAM States expressed their interest. In this regard, the following conclusion was formulated (English only):

| | |
|---|--|
| CONCLUSION | |
| MEVA/TMG/34/02 | COMMUNICATION REDUNDANCY CHANNEL FOR MEVA III – REDDIG II INTERCONNECTION |
| <p>What:</p> <p>That, in order to support the terrestrial backup of the SAM REDDIG Network offered to MEVA members having direct connections to REDDIG members, Panama, the United States and COCESNA,</p> <p>a) will move forward in performing the technical, administrative and legal analysis for this terrestrial backup, carried out individually agreement with the REDDIG management, and</p> <p>b) to inform the progress to the MEVA TMG/35 Meeting and ICAO NACC Regional Office.</p> | <p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input checked="" type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p> |
| Why: Provide a back-up communication between ICAO Regional Networks | |
| When: MEVA/TMG/35 Meeting. | Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |
| Who: <input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other: | Panama. United States and COCESNA |

2. Discussion

2.1 The proposal of establishing additional nodes in the REDDIG II backup network has the following advantages:

- more direct communications;
- reduced latency and increased bandwidth;
- no additional cost for the participants of Regional Project RLA/03/901.

Administrative provisions

2.2 The States/organisations of other Regions interested in accessing the network shall take the following administrative provisions:

- formalise their intention to implement the additional node;
- upon approval, hire a link of at least 1 Mbps with the provider CenturyLink;
- coordinate the technical details of the connection with the REDDIG Administrator and the South American Regional Office.

3. **Suggested action**

3.1 The Coordination Committee is invited to:

- a) take note of the information contained in this working paper and its appendix; and
- b) approve the adoption of the administrative provisions stated in this working paper.

APPENDIX A



International Civil Aviation Organization
South American Regional Office
**Twenty-Third Workshop/Meeting of the SAM Implementation
Group (SAM/IG/23) - Regional Project RLA/06/901**
(Lima, Peru, 20 to 24 May 2019)

SAM/IG/23-WP/10
Revised
17/05/2019

Agenda Item 4: Assessment of operational requirements to determine the implementation of improvements in communication, navigation and surveillance (CNS) capabilities for operations in route and terminal area

TECHNICAL PROPOSAL OF REDUNDANCY FOR THE MEVA III – REDDIG II INTERCONNECTION

(Presented by the Secretariat)

| SUMMARY | |
|---|--|
| This working paper presents a technical proposal to implement nodes of the REDDIG backup network (MPLS) in some States/Organizations of MEVA III network, that have communication with REDDIG States through a sole existing via, the MEVA III – REDDIG II interconnection. | |
| References: | |
| - Contract REDDIG 22501200. - REDDIG II Technical Specifications – Terrestrial network (MPLS) | |
| ICAO strategic objectives: | <i>A – Safety</i> <i>B – Air navigation capacity and efficiency</i> |

1 Background

1.1 The two networks deployed in NAM/CAR (MEVA III) and SAM (REDDIG II) have as common characteristic the usage of the same satellite (Intelsat IS 14). This allowed the implementation of an interconnection between the two networks, by just adding equipment of MEVA III network (FRAD Memotec 9230 and MODEM Skywan 2570) to the REDDIG's nodes of Bogota and Caracas. By the other hand, REDDIG II equipment (Router Cisco 2901 y MODEM Skywan 1070) were also added to the MEVA node of Tegucigalpa (COCESNA). Figure 1 depicts a conceptual scheme to adequate Bogota and Caracas nodes for the MEVA III – REDDIG II interconnection.

2 Discussion

2.1 The adopted scheme has a common point of failure for all communications if the interconnection nodes present a severe failure, for instance a problem with the space segment (satellite).

2.2 Assuming the importance of these communications established by the MEVA III – REDDIG II connection, to have an alternative via, as redundancy, must be considered.

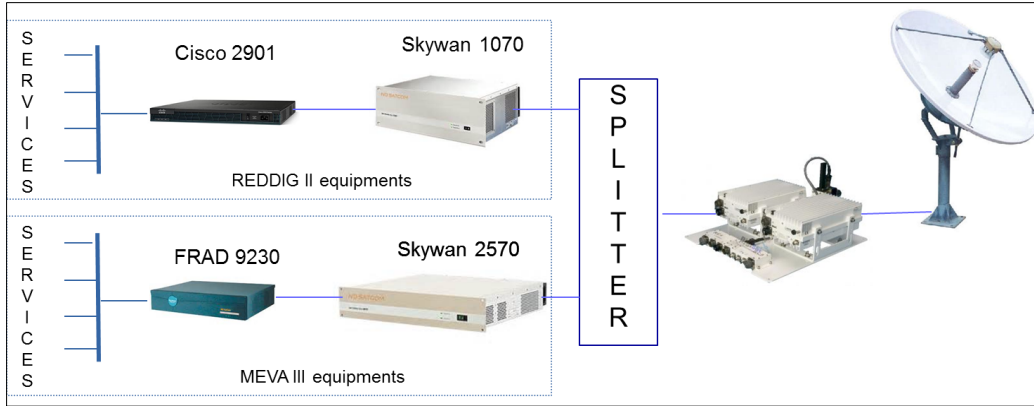


Figure 1 – REDDIG II nodes of Bogota and Caracas

3. Technical proposal

3.1 In 2015, the SAM Region Digital Network was modernized, having a satellite network as main network, and a backup network, by means of a MPLS service provider (CenturyLink) for all REDDIG II nodes. Figure 2 depicts the present configuration of REDDIG II.

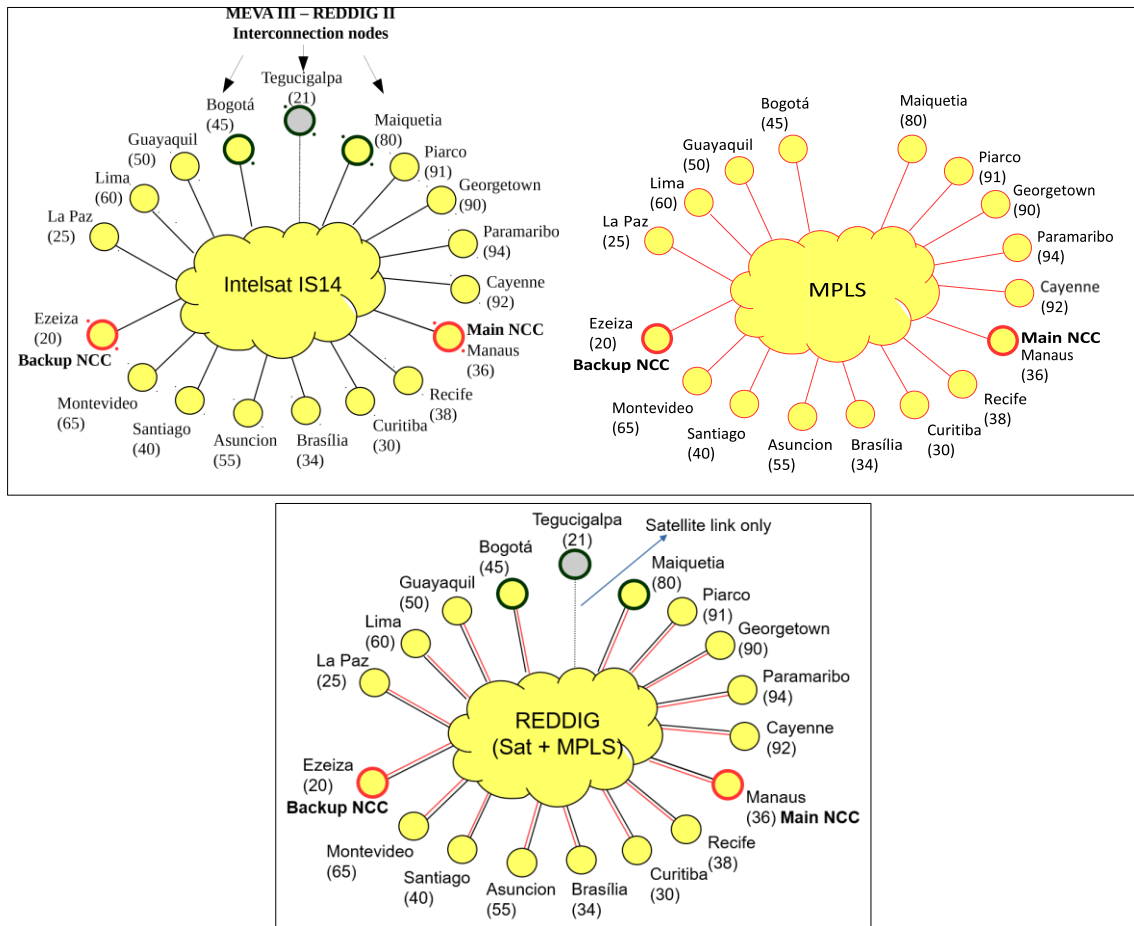


Figure 2 – Main and backup REDDIG II networks

3.2 A feasible technical proposal would be to deploy nodes of the REDDIG II backup network in some MEVA III States/Organizations, whose maintain critical communications with REDDIG II participants, for instance: United States (Atlanta), Panama (Panama City) and COCESNA (Tegucigalpa). Figure 3 depicts this proposal.

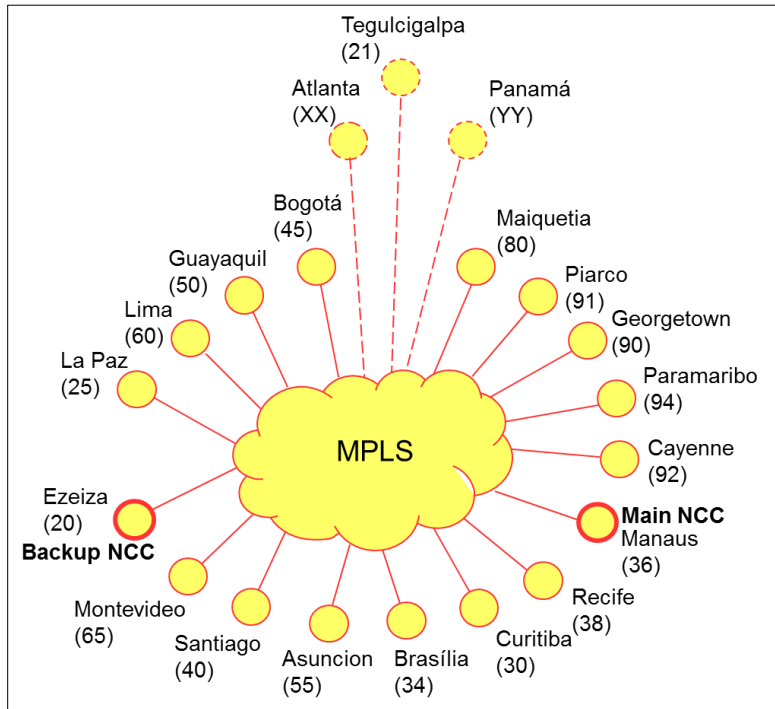


Figure 3 – REDDIG II backup network expanded to MEVA III States/Organizations

4. Suggested action

4.1 The Meeting is invited to:

- a) take note of the information presented herein;
- b) discuss the proposal presented on item 3; and
- c) discuss the administrative and financial aspects to deploy the proposal, if approved.
- d) consider any other issues it may deem appropriate.