



**Agenda Item 4: 2022 Work Plan**

**ACTIVITIES FORESEEN FOR 2022**

(Presented by the Secretariat)

<b>SUMMARY</b>	
This working paper presents information on the activities foreseen to be carried out in 2022 under Project RLA/03/901 - <i>REDDIG management system and satellite segment administration</i> .	
<b>References</b>	
<ul style="list-style-type: none"><li>• REDDIG Contract 22502088 - Ground Network (MPLS based - 5/1 Mbps);</li><li>• Twenty-sixth meeting of the REDDIG Coordination Committee (RCC/26) (Teleconference, 2-5 March 2021); and</li><li>• Twenty-seventh (extraordinary) meeting of the REDDIG Coordination Committee (RCC/27) (Teleconference, 31 August 2021).</li></ul>	
<b>ICAO strategic objectives:</b>	A – <i>Safety</i> B – <i>Air navigation capacity and efficiency</i>

1. **Introduction**

1.1 The main activities scheduled for 2022 are:

- a) Operation of REDDIG II and analysis of the implementation of new services;
- b) Activities and new services on the MEVA III/ REDDIG II interconnection;
- c) 2022 training programme.

2. **Description**

**OPERATION OF REDDIG II AND ANALYSIS OF THE IMPLEMENTATION OF NEW SERVICES**

*NEW CONTRACT WITH THE GROUND NETWORK PROVIDER*

2.1 Following the signing of a new contract with the ground network provider (LUMEN) for a period of two years, renewable for an additional two years, work has been carried out with the provider during the past months of this year to improve the service. As a result, continuous monitoring is being carried out with the provider in order to improve availability beyond the committed level.

2.2 This is in addition to the inclusion of several additional nodes, and the planned installation of a firewall network to continue with the security policies that have been in place since 2012. This firewall network should be operational this year, with proper training provided to the personnel involved.

## *REQUIREMENTS TO DELEGATES*

- 2.3 Like every year, delegates are requested to do the following:
- a) verify that stations are registered in the frequency spectrum regulatory bodies and report on the status. Remember that carrier frequencies were changed;
  - b) update information on the focal points of the project through an official written communication addressed to the Regional Office; and
  - c) check the status of electrical facilities and the UPS of each node, and of the grounding system.
- 2.4 States that are in a position of procuring spare parts and/or spare equipment for their REDDIG nodes are urged to do so, with the necessary advice from the ICAO Regional Office, in order to maintain homogeneity and availability of the systems in each of the nodes and act accordingly.
- 2.5 States are urged to make the necessary efforts to improve logistics, in order to avoid the problems that have been emerging. These problems threaten the availability of the network, disrupt other nodes, and may affect the safety of air operations.
- 2.6 It should be noted that, in order to carry out preventive maintenance more efficiently in the RF stages of the nodes, appropriate L-band RF measuring tools are needed.
- 2.7 The Regional Office reaffirms its concern about the state of corrosion of antenna parts and accessories, and the need for States to take action in this regard.
- 2.8 States are urged to ensure that system outages or infrastructure modifications are timely communicated through operational and other available means to enable the adoption of the most appropriate measures and to assist in such situations. They are also urged to review contingency plans, advise stakeholders on alternatives, and verify them.
- 2.9 The REDDIG Administration is making every effort to complete the repair of the items sent for factory maintenance and expects to return the equipment to the respective nodes in the course of 2022. The Appendix to this working paper lists the equipment in the process of factory repair.

## *REDDIG III*

- 2.10 As stated at the RCC-26 meeting, the expected useful life of the satellite network is ten (10) years, and taking into account the recurrent failures of some units in particular (Skywan 1070 modem and 80w IBUC), the design of a REDDIG III has started to be considered.
- 2.11 The *ad hoc* group that is to discuss a project for the next three years, as previously stated, is doing the analysis, focusing on attending various presentations by suppliers of different alternatives. New solutions, new technologies, and in particular the future needs will continue to be considered this year in order to define a network that is more geared to service management and free of the logistical problems that have emerged in the two previous versions of this network (Conclusion RCC/24-2 – Establishment of the REDDIG III *ad hoc* Group)
- 2.12 Taking into account the new contract with Lumen, whereby almost all nodes were upgraded from 1 Mbps to 5 Mbps, that the Venezuela node had an important modification in its topology, which notably increased performance and availability (from 99.7 to 99.99), in addition to what happened with the Chile node (cases of vandalism that forced the provider to have a VSAT station at its own

expense), and the inclusion of new nodes (Cochabamba, Rio de Janeiro, ICAO SAM, Atlanta, Salt Lake City, Ilopango, ARSAT), consideration must be given to whether the network will continue operating with satellite as primary means and the ground system as alternative, or whether the priority will change this year. It should be noted that the priority is already changing in many nodes, particularly for services exchanged between adjacent States. It is also worth mentioning that by mid-2022, additional nodes are expected to be added in Johannesburg (South Africa) and Madrid (Spain). Likewise, an interconnection with a node in Christchurch (New Zealand) is being coordinated.

2.13 Due to their specificities, the pandemic has also had an impact on nodes in terms of the availability of personnel, which has prevented the execution of the preventive maintenance plan defined for 2020 and 2021. These activities must be resumed, applying the same schedule and accommodating it in the remainder of this year. So far, corrective maintenance is being carried out.

2.14 In order to safeguard the useful life of satellite station equipment, action must also be taken to have only one chain in operation (depending on the decision of each State). The Administrator and the focal points of each State shall coordinate the timing of equipment shutdown, maintenance phases and alternation of operation (alternating operation every 3 or 4 months). This decision is specific to each State. It should be seen as a recommendation, which, if accepted, will always be applied with the approval of the focal point of each node.

#### *NINTH TECHNICAL-OPERATIONAL MEETING OF REDDIG II (RTO/9)*

2.15 The RTO/9 could not be held in 2020 and 2021 due to the pandemic. In this regard, the meeting has been scheduled to be held virtually, on 13-14 October 2022. The expectation is that, during the RCC/28 meeting, a State will express interest in hosting the meeting, preferably in a REDDIG II node location.

#### *PREVENTIVE MAINTENANCE SCHEDULING*

2.16 The REDDIG Administration wants to resume the preventive maintenance programme for all equipment in all REDDIG nodes in 2022. The preventive maintenance schedule is the same as the one that has been presented since the RCC/22 in 2019.

#### *VISIT TO THE REDDIG II NODES*

2.17 The Piarco and Guayaquil nodes have been scheduled for 2022, conditions permitting, in addition to assistance to be provided during the transfer of the Bogotá node, and a visit to Cayenne for personnel training and on-site maintenance.

2.18 In the first two cases, the visit will last one week. In the case of the transfer of the Bogotá node and the training planned for Cayenne, the Colombian and French Administrations will bear the costs of the Administrator's presence during this process, which will be charged to the annual fees.

#### *TRANSFER OF THE REDDIG II BOGOTA NODE*

2.19 The material is in Colombia, and some progress has already been made on the activity related to the installation of the antenna base. Civil works are pending before proceeding with the final tasks.

2.20 The completion of this activity is subject to the acceptance of a civil works budget submitted by INEO ENGIE, at the request of the Colombian administration.

*ALTERNATING OPERATION OF NCCs AND THE REDDIG MANAGEMENT CENTRE*

2.21 Alternation of the operation of NCCs and the Manaus REDDIG management centre shall take place during 2022, conditions permitting, noting that it would be desirable for the Administrator to move to the Ezeiza NCC during the alternation (planned for one week).

2.22 During the short periods of solar conjunction and contingencies, only the reference carrier shall be temporarily switched from Manaus to Ezeiza.

**ACTIVITIES AND NEW SERVICES ON THE MEVA III/ REDDIG II INTERCONNECTION**

*PROPOSED COMMUNICATIONS IN THE CAR AND SAM INTERFACE*

2.23 The proposal is to deploy REDDIG II (MPLS) nodes in Curaçao, Aruba, Jamaica and Puerto Rico, where there is Lumen infrastructure, at a potentially lower cost, providing better communications to these States. In this regard, refer to WP/02 and Conclusion RCC/27-1 of the Twenty-seventh (extraordinary) Meeting of the Coordination Committee (RCC/27) (Teleconference, 31 August 2021). Figure 1 illustrates the proposed scheme to replace the current MEVA III - REDDIG II interconnection.

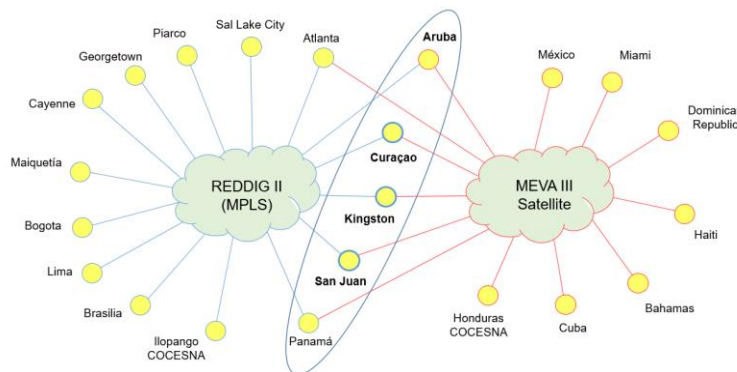


Figure 1 – New MEVA III – REDDIG II interconnection scheme

2.24 The Second MEVA III - REDDIG II Interconnection meeting (MIII-RII/ INTERCON/2), to be held in Lima on 5-6 May 2022, shall discuss the implementation of the new scheme with the CAR States involved.

*SUPPORT FOR INTERCONNECTIONS BETWEEN AMHS SYSTEMS OF THE REGION AND WITH OTHER REGIONS*

2.25 With regard to activities in support of interconnections between AMHS systems in the Region and with other Regions, the following interconnections are expected to be established in 2022:

Argentina

- Ezeiza MTA – Montevideo MTA (awaiting the update of the system in Uruguay)
- Ezeiza MTA – Johannesburg MTA (awaiting the installation of the MPLS node in Johannesburg)
- Ezeiza MTA – Caracas MTA (extra-plan - coordination underway)
- Ezeiza MTA – Madrid MTA (extra-plan - coordination underway)

Brazil

- Brasilia MTA – Montevideo MTA (awaiting the update of the system in Uruguay)
- Brasilia MTA – Madrid MTA (awaiting installation of the MPLS node in Madrid)

Chile

- Santiago MTA –Christchurch MTA (coordination underway)

Guyana

- Georgetown MTA – Piarco MTA (coordination not started yet)

Trinidad & Tobago

- Piarco MTA – Atlanta & Salt Lake City MTA (coordination underway)
- Piarco MTA – Georgetown MTA (coordination not started yet)

Uruguay

- Montevideo MTA – Brasilia MTA (awaiting the update of the system in Uruguay)
- Montevideo MTA – Ezeiza MTA (awaiting the update of the system in Uruguay)
- Montevideo MTA – Lima MTA (extra-plan – coordination underway)

Venezuela

- Caracas MTA – Curaçao MTA (coordination not started yet)
- Caracas MTA – Ezeiza MTA (extra plan – coordination underway)
- Caracas MTA – Madrid MTA (awaiting installation of the MPLS node in Madrid)

2.26 Discussions will continue with APAC and EUR for the interconnection of the CRV, New PENS and REDDIG II networks. In the context of this task, which is an initiative of the SAM Regional Office, meetings are being held with the representatives of the three telecommunication companies: PCCW Global (APAC), British Telecom (PENS) and Lumen (REDDIG II), and with the organisations and States involved (Conclusion RCC/24-3 Interconnection of regional IP networks).

## **REDDIG II TRAINING PROGRAMME**

2.27 The following training activities are foreseen for 2022:

- a) Recurrent training on REDDIG II operation and maintenance (virtual)
- b) Course on security and firewall configuration\*
- c) Advanced course on firewall management and monitoring\*
- d) Training for the Manaus NCC personnel on analysis of IP packets using sniffer (radar, AMHS, etc.) (virtual, had been postponed due to COVID-19)
- e) Course on security policies and firewall configuration\*
- f) Training course on operation and maintenance for personnel in Cayenne, French Guiana (face-to-face)

*\*These training activities depend on the contracting process in force*

### ***Recurrent training on REDDIG II operation and maintenance***

2.28 This is an activity that was being carried out every year during the Administrator's

scheduled visits to the nodes. Because of the pandemic, the proposal is to carry out this training virtually, and, if there is any possibility of face-to-face visits by the Administrator, it should be carried out as usual.

***Course on security policies and firewall configuration***

2.29 This activity is currently underway, and should be completed in the coming months in accordance with the contractual obligations of the awardee.

2.30 It is underlined that the objective of the training course will be, first, to introduce staff to the security policies, and then, to allow participants to configure the equipment that will be installed in each node.

2.31 Taking into account that the purchased equipment is expected to be delivered to the Regional Office, in principle, if sanitary conditions go back to normal, training would be provided in Lima, for which a fellowship per State would be granted.

2.32 The participants will be required to have networking knowledge. In this sense, it should be noted that the staff has received, through the project, various courses on this subject.

2.33 Costs incurred in the provision of the course will be included in the purchase of the equipment, while fellowships will be covered by the Project.

***Advanced course on firewall management and monitoring***

2.34 For the Advanced course on firewall management and monitoring, one vacancy is foreseen for the CNS SAM officer, one vacancy for the REDDIG II Administrator, two vacancies for the Manaus NCC and one vacancy for the Ezeiza NCC.

2.35 Costs involved in the delivery of the course will be included in the purchase of the equipment, while fellowships will be covered by the Project.

***Training on operation and management for the Cayenne personnel (face-to-face)***

2.36 At the request of the French administration, training will be provided to the staff of the REDDIG II node in Cayenne by the network administrator during the second half of 2022.

2.37 Training costs will be included in the annual fees of France.

**3. Suggested action**

3.1 The Coordination Committee is invited to:

- a) take note of the information provided herein;
- b) review the activities foreseen for 2022; and
- c) discuss any other issue related to the activities of Project REDDIG RLA/03/901 in 2022 that it may deem appropriate.

**APPENDIX**  
**EQUIPMENT BEING REPAIRED IN FACTORY**

SKYWAN 1070 MODEM		
EQUIPMENT	S.N.	STATION
IDU 1070B	#00:40:71:F0:51:02	Cayenne (France)
IDU 1070B	#00:40:71:F0:52:22	Maiquetia (Venezuela)
IDU 1070B	#00:40:71:F0:51:C2	Recife (Brazil)
<b>IDU 1070B</b>	<b>#00:40:71:F0:51:C2</b>	<b>spare (ICAO)</b>
IDU 1070B	#00:40:71:F0:2C:3C	La Paz (Bolivia)
IDU 1070B	#00:40:71:F0:2C:3C	La Paz (Bolivia)

TERRASAT RF EQUIPMENT		
IBUC 80W	TE 5022353	Bogotá (Colombia)
IBUC 80W	TE 5022357	Cayenne (France)
IBUC 80W	TE 5022342	Recife (Brazil)
RX 1+1	TE 6010447	Cayenne (France)
RX 1+1	TE 6010441	La Paz (Bolivia)

- There is a Skywan IDU 1070B modem SN# 00:40:71:F0:50:AE of the Curitiba node at the Regional Office ready to be sent for repair