



Agenda item 4: Work plan for 2024 and Implementation of REDDIG III – Phase 1

ACTIVITIES FORESEEN FOR 2024

(Presented by the Secretariat)

SUMMARY	
This working paper presents information on the activities scheduled to be carried out in 2024 by Project RLA/03/901 - <i>REDDIG Management System and Administration of the Satellite Segment</i> .	
References	
<ul style="list-style-type: none">• Twenty-ninth meeting of the REDDIG Coordination Committee (RCC/29) (Lima, 13 - 17 March 2023)• Tenth technical/operational meeting for the operation of the REDDIG II digital network (RTO/10) (Virtual, 24-27 October 2023)• Contract REDDIG 22502088 and Amendment I• Contract 22501200 and Amendment IX	
ICAO strategic objectives:	<i>A – Safety</i> <i>B - Air navigation capacity and efficiency</i>

1. Introduction

1.1 The main activities scheduled to be carried out in 2024 are:

- a) Network planning and management activities; and
- b) 2024 training programme;

2. Description

NETWORK PLANNING AND MANAGEMENT ACTIVITIES

REDDIG III

2.1 During the last Meeting of the Coordination Committee (RCC/29 – Lima, March 13-17, 2023), a study note (NE/07) was presented proposing the concept for version 3 of the regional network (REDDIG III) and the improvement of the management and administration of the Regional Technical Cooperation Project RLA/03/901.

2.2 RCC/29-NE/07 can be accessed through the following link:
https://www.icao.int/SAM/Documents/2023-RLA03901-RCC29/REDDIG_RCC29%20WP07%20REDDIG%20III%20conceptrev.pdf

2.3 The deployment of a highly redundant MPLS network is expected to start operating no later than January 1, 2025. In this regard, work is being done with two well-defined objectives. One is to maximize the operation of the current satellite network, which is intended to remain operational until December 2025. This will require more effort related to preventive and corrective maintenance tasks. The second is to start the bidding process for the new MPLS network during 2024.

2.4 During RCC/29, the Secretariat reported that the contract with the REDDIG II space segment provider (Intelsat) had been renewed until 31 December 2025.

2.5 In relation to the new REDDIG III, it is defined as a network oriented to the management of services, and detached from logistical problems. Logistics, during the two previous versions of REDDIG, has been characterized by a high degree of complexity that has demanded greater efforts from all parties involved.

2.6 It has been defined that, by January 2025, a terrestrial network with two MPLS accesses will begin to operate, by different physical last-mile means. By 2026, the network equipment of each node will be in the process of being replaced, and based on the work of the Ad-hoc Group formed for this purpose during RCC-29.

2.7 In addition, work must be done on the migration to VoIP voice circuits that connect the States, having REDDIG as a means of transport. It should be noted that REDDIG II supports SIP V.2 and the future network is also premised on supporting migrations to new technologies.

Phases of implementation of REDDIG III

2.8 During RCC/29, after deliberating on the information contained in NE/07, the Meeting agreed to implement REDDIG III in two phases. The first phase consists of working on the WAN part of the network, contracting services to a telecommunications provider (MPLS), with last-mile link redundancy. The second phase consists of working on the LAN part of the network, modernizing the connectivity equipment, the interfaces necessary to connect the existing aeronautical services at each node and adapting the cybersecurity equipment acquired to the new architecture of the LAN part of the network.

2.9 The Meeting also agreed that the REDDIG Ad-hoc Group should carry out the necessary analyses and develop the technical specifications to implement Phase 2 of the network.

Adding firewalls to the network

2.10 Work is underway to install a network of firewalls. This firewall network should be up and running by the second half of 2024. It was planned to be completed by the end of 2023, but, due to logistical and political issues specific to each Organization and the States, in relation to the internment of the equipment, registration in the patrimony, registration with competition entities and other factors, it has been delayed. It should be noted that the issue of renewing equipment licenses should be analyzed. It should also be remembered that the purchase was approved during RCC/22 (Lima, Peru, March 5 to 7, 2019), that the equipment finally arrived in the first months of 2022 (delayed by the pandemic), then the training was carried out, and finally the equipment was sent to each node, according to their distribution.

2.11 Items 2.26 to 2.31 of this working paper provide more information on this topic.

Project RLA/03/901 Management and Administration

2.12 During RCC/29, after the presentation of NE/07 and discussed that Project RLA/03/901 had the initial existence forecast of 5 years and after the formation of a regional multilateral organization (RMO) it should be terminated; as well as the strong impact that the management and administration of the regional network has on the SAM Office, due to the limited number of staff available; likewise, due to the significant increase in importance and scope of the network, it is essential to have a staff dedicated exclusively to the management and administration of the Project. In this regard, Conclusion RCC/29-2 Management and Administration of the Regional Project RLA/03/901 with the Implementation of REDDIG III was approved.

2.13 It was decided that the Ad-hoc Group REDDIG III would evaluate the proposal to improve the structure of the management and administration of the Regional Project RLA/03/901, with personnel dedicated exclusively to the project, forming the following Management and Administration Nucleus:

- Project Manager: responsible for the management and administration of the Regional Project RLA/03/901;
- Administrative Assistant: responsible for administrative support to the Project Manager; and
- Network Administrator: responsible for the technical-operational management of the regional network.

2.14 It should be noted that the figure of the Network Administrator already exists, acting from the Manaus node, where the Network Control Center (NCC) is located. The person who performs the function of Network Administrator is hired with resources from the Regional Project RLA/03/901, and this contract is renewed annually. The main attribution of the Network Administrator is to maintain operability and availability, configuring the resources of the regional network in accordance with the needs of the participants, in addition to supporting the technicians of the States in the event of failures of the circuits and connections provided by the regional network.

2.15 The two new people who would make up the Management and Administration Nucleus of Project RLA/03/901 are the Project Manager and an Assistant, who would also be hired with resources from the Regional Technical Cooperation Project RLA/03/901, with annual renewal of the contract.

2.16 The Project Manager would be responsible for all management of network planning, risk analysis, integration with other regional networks, communication with participating States, coordination for specification and establishment of new services, participation in bidding processes related to the Project, compliance with signed contracts, meetings with suppliers, management of project resources and accountability to Project participants, during the meetings of the Coordination Committee.

2.17 The Assistant would support the Project Manager in all administrative activities of preparation of documents, templates, schedules, presentations and other means available to manage the resources of Project RLA/03/901, including the material of the Spare Parts Room and annual or extraordinary contributions of participants to the Project, also collaborating for the provision of accounts, during the meetings of the Coordination Committee.

2.18 During this SAM/IG/30 meeting, the REDDIG III Ad-hoc Group composed of representatives from Argentina, Brazil, Chile, France (French Guiana), Paraguay and Venezuela, under the coordination of the representative of Chile, will present an evaluation of the proposal to improve the management and administration structure of the network, for deliberation by the Coordination Committee.

Eleventh Technical-Operational Meeting of REDDIG (RTO/11)

2.19 It is proposed, based on what was stated by the delegate of Paraguay during RTO-10, that the Eleventh Technical-Operational Meeting (RTO-11) of REDDIG be held in Asunción, Paraguay. In principle, to be held in the week of September 2 to 6, 2024.

2.20 In reference to RTO-11, there is still a need to associate training with it. During the week there will be workshops to specify the RTO and training sessions.

Preventive Maintenance Scheduling

2.21 By 2024, the REDDIG Administration will apply the preventive maintenance program to all equipment on all REDDIG nodes. **Appendix A** to this study note details the preventive maintenance schedule for 2024.

Visit to the REDDIG nodes

2.22 States approve, as part of maintenance and training activities, that the REDDIG Administrator visit two nodes per year.

2.23 The objective is to perform a complete evaluation of the node and develop a training/recurrent, intended for the personnel in charge of maintaining the node.

2.24 For the year 2024, visits to the nodes of Montevideo (Uruguay) and Paramaribo (Suriname) are proposed. In both cases, the visit will last one week.

Alternation of the operation of the NCCs and the REDDIG management centre

2.25 In 2024, the alternation of the operation of the NCCs should be carried out, as long as the conditions allow it, and with the consideration that it would be desirable for the Administrator to move, during the alternation, to the NCC Ezeiza (expected, one week).

2.26 Durante los períodos cortos de conjunción solar y eventualidades, sólo la portadora de referencia será conmutada temporalmente de Manaus a Ezeiza, y viceversa.

REDDIG Telephone Directory

2.27 States are required to update or ratify the REDDIG telephone directory (ATS and Administrative) on an annual basis. This task is reviewed during the RTO.

2.28 In this regard, it is recalled that this information is subject to operational documents/letters of agreement between States and that any modification, in addition to being informed and coordinated with the REDDIG administration, must be incorporated into the official documentation of the States and communicated through official channels.

REDDIG II TRAINING PROGRAMME

2.29 The following training activities are foreseen for 2024:

- a) Recurrent training on REDDIG II operation and maintenance
- b) Course on security policies and firewall configuration*
- c) Training for the Manaus NCC staff on IP packet analysis with sniffer (radar, AMHS,

etc.)

** This training activity depends on the process agreed by States at the RCC/30 meeting.*

Recurrent training on REDDIG II operation and maintenance

2.30 This is an activity that has been carried out every year and is completed during the scheduled visits to the nodes by the Administrator. Also, meetings are held, every month or two months, that include training/briefing for the staff of the NCC Manaus. In addition, it is proposed to hold virtual meetings with the staff of the NCC Ezeiza.

2.31 In this regard, States that deem it necessary may request the visit of the Administrator, as in the case of French Guiana. Bear in mind that the costs for the latter alternative will be borne by the requesting State.

Course on security policies and firewall configuration

2.32 All the equipment was delivered to the SAM Office and, in November 2022, the Firewall Equipment Training was carried out at the SAM Office facilities. The Secretariat indicated that, unfortunately, several States members of Regional Project RLA/03/901 had been absent.

2.33 The Secretariat also reported that, during the training, a basic initial configuration of the firebreak equipment was chosen. One firewall computer dedicated to the protection of the LAN part of the node and the second computer dedicated to the protection of the WAN part (MPLS) of the node. The adoption of this basic configuration aims to facilitate the installation and activation, in a homogeneous way, even in the nodes of the States that did not participate in the training.

2.34 During RCC/29, Brazil suggested forming a group of experts to study and propose a more optimized configuration, taking better advantage of the functionalities of the acquired equipment, and providing greater resilience to potential attacks. Other participating States supported the proposal, with the following conclusion formulated: Conclusion RCC/29-1 – *Ad-hoc Group to Study and Propose an Advanced Standard Configuration for Procured Firewall Equipment.*

2.35 The Ad-hoc Group was made up of the following States: Argentina, Brazil, Chile, Colombia, Paraguay and Venezuela. A representative of Brazil will be the coordinator of the Ad-hoc Group.

2.36 To date, a series of activities have been agreed with Brazil, aimed at specifying the installation and improvement in the configuration/topology of the firewall network. The Brazilian Administration has even had a specialist to work and give continuity to this issue.

2.37 During the present Meeting (RCC/30), the presentation by the Ad Hoc Group of the progress made on this subject is awaited. The topic of further training should be discussed by the participants of the Coordination Committee.

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 2023; and
- c) discuss any other issue related to the activities of the Project.

APÉNDICE A / APPENDIX A**Schedule Preventive Maintenance REDDIG 2024****Diagramación tareas
REDDIG para 2024**

Jan 15, 2024

**Administración REDDIG -
CNS - ICAO SAM**<http://icao.int>**Project manager****Project dates**

Apr 3, 2024 - Dec 4, 2024

Tasks

76

Resources

0

Tareas programadas para ser desarrolladas durante el año 2024 en NCCs y estaciones de la REDDIG.

Diagramación tareas REDDIG para 2024

Jan 15, 2024

Tasks

2

Name	Begin date	End date
NCC	4/3/24	12/3/24
Routers	4/3/24	6/4/24
Backup configuraciones // Backup configurations	4/3/24	4/23/24
Verificar configuraciones // Verify configurations	4/24/24	5/14/24
Verificar diagramas y cableado // Verify diagrams and cabling	5/15/24	6/4/24
Verificar identificaciones // Verify identifications	5/15/24	6/4/24
Capacitación // Training	4/3/24	12/3/24
VERIFICAR NROS DE SERIE DE EQUIPOS Y ESTADO DE INVENTARIO // Verify serial numbers of equipment and inventory status	4/3/24	6/3/24
Switches	6/5/24	6/25/24
Backup configuraciones // Backup configurations	6/5/24	6/11/24
Verificar configuraciones // Verify configurations	6/12/24	6/18/24
Verificar diagramas y cableado // Verify diagrams and cabling	6/19/24	6/25/24
Verificar identificaciones // Verify identifications	6/19/24	6/25/24
AMHS -AFTN - AIDC Check	6/26/24	7/2/24
ATS - ADMIN - MANT Check	7/3/24	7/9/24
Verificar WUG // Verify WUG	7/10/24	7/16/24
Externos (ADS-C, otros) // External (ADS-C, others)	7/17/24	7/23/24
VERIFICACIÓN EQUIPOS INDOOR // Indoor equipment verification	7/24/24	8/6/24
Registro fotográfico // Photographic record	7/24/24	8/6/24
Cotejo de diagramas // Compare diagrams	7/24/24	8/6/24
Backup	8/1/24	8/6/24
Servers Local y Global	8/7/24	8/13/24
GPS	8/14/24	8/20/24
MODEM SKWAN A	8/21/24	8/27/24
MODEM SKYWAN B	8/28/24	9/3/24
LINE-UP-MANAGER	9/4/24	9/10/24
ANTENA	9/11/24	11/5/24
Registro fotográfico // Photographic record	9/11/24	9/17/24
Cotejo de diagramas // Compare Diagrams	9/18/24	9/24/24
Backup	9/18/24	9/24/24
LNB A	9/25/24	10/1/24

Diagramación tareas REDDIG para 2024

Jan 15, 2024

Tasks

3

Name	Begin date	End date
LNB B	10/2/24	10/8/24
RX 1+1	10/9/24	10/15/24
IBUC A	10/16/24	10/22/24
IBUC B	10/23/24	10/29/24
TX 1+1	10/30/24	11/5/24
CIRION	11/6/24	11/12/24
Identificar equipos // Equipment identification	11/6/24	11/12/24
Verificar cableado // Verify cabling	11/6/24	11/12/24
Nodos // Nodes	4/3/24	11/5/24
Routers	4/3/24	4/30/24
Verificar Configuraciones físicas y lógicas // Verify physical and logical configurations	4/3/24	4/9/24
Verificar Diagramas y cableado // Verify diagrams an cabling	4/3/24	4/16/24
Verificar Identificaciones // Verify identifications	4/17/24	4/30/24
VERIFICACIÓN EQUIPOS INDOOR // Indoor equipment verification	4/3/24	4/30/24
Registro Fotográfico // Photographic record	4/3/24	4/9/24
Cotejo de diagramas // Compare diagrams	4/3/24	4/16/24
BackUp	4/17/24	4/30/24
MODEM B	4/17/24	4/23/24
SWITCHES	5/1/24	5/28/24
Verificar Configuraciones físicas y lógicas // Verify physical and logical configurations	5/1/24	5/7/24
Verificar Diagramas y Cableado // Verify diagram and cabling	5/3/24	5/21/24
Verificar Identificaciones // Verify identifications	5/22/24	5/28/24
ATS -ADMIN - MANT	5/29/24	6/4/24
AMHS - AFTN - AIDC Check	6/5/24	6/11/24
Verificar WUG // Verify WUG	6/12/24	6/18/24
Externos // External	6/19/24	6/25/24
Server NMS Local	6/26/24	7/2/24
GPS	7/3/24	7/9/24
MODEM A	7/10/24	7/16/24
LINE-UP-MANAGER	7/24/24	7/30/24
CIRION	7/31/24	8/13/24
Identificar equipos // Equipment identification	7/31/24	8/6/24
Verificar cableado // Verify cabling	8/7/24	8/13/24

Diagramación tareas REDDIG para 2024

Jan 15, 2024

Tasks

4

Name	Begin date	End date
ANTENA	9/11/24	10/22/24
Registro Fotográfico // Photographic record	9/11/24	9/17/24
Cotejo de Diagramas // Compare diagrams	9/11/24	9/24/24
Limpieza de antena // Antenna cleaning	9/18/24	9/24/24
Backup	9/25/24	10/1/24
LNB A	10/2/24	10/4/24
LNB B	10/4/24	10/8/24
RX 1+1	10/9/24	10/11/24
IBUC A	10/11/24	10/15/24
IBUC B	10/16/24	10/18/24
TX 1+1	10/18/24	10/22/24
VERIFICACIÓN NROS DE SERIE DEEQUIPOS Y ESTADO DE INVENTARIO // Verify serial numbers of equipment and inventory status	10/23/24	11/5/24





