



Agenda Item 3: Report of the activities carried out since the last meeting of the Coordination Committee

REPORT OF THE ACTIVITIES CARRIED OUT SINCE THE LAST MEETING OF THE COORDINATION COMMITTEE

(Presented by the Secretariat)

SUMMARY	
This working paper presents information on progress made in the performance of the activities agreed at the last meetings of the Coordination Committee, as part of 2022 work plan.	
REFERENCES	
<ul style="list-style-type: none">• Contract REDDIG 22502088 and Amendment II to Contract 22502088; and Amendment IX to Contract 22501200• Reports of the last meetings of the REDDIG Coordination Committee (RCC/24; RCC/25; RCC/26; RCC/27; and RCC/28).	
ICAO strategic objectives:	<i>A – Safety</i> <i>B - Air navigation capacity and efficiency</i>

1. Introduction

1.1 The main activities agreed upon at the last meetings of the Coordination Committee that were performed in 2022 in relation to the operation, support and maintenance of the network were as follows:

- a) REDDIG II performance monitoring;
- b) REDDIG II training programme;
- c) Operation of REDDIG II and analysis of the implementation of new services.

1.2 This working paper also presents REDDIG logistics during 2022.

2. Description

REDDIG II PERFORMANCE MONITORING

2.1 It is noted that availability and functionality levels of the operation are as expected, with 99.9895 % availability in 2022.

2.2 **Appendix A** to this working paper illustrates REDDIG availability up until 2022.

Logistics

2.3 Regarding the definitive replacement process, it should be recalled that part of the REDDIG stock of spare parts dates back to the RCC/08 meeting of April 2005. Taking into account that the REDDIG equipment is in the final stage of its life cycle, it is quite possible that there will be new occurrences that will require continued equipment shipment, repair and replacement logistics. Furthermore, since 2020, the manufacturers NDSatcom and Terrasat no longer manufacture the outdoor and indoor equipment installed at the nodes. The commitment was to have spare parts available up until 2022, and from then on, subject to availability from manufacturers.

2.4 In 2022, only one HP server source was delivered to the representatives of the Colombian Administration on occasion of RCC/28, which restored the functionality of the server at the Bogota node.

2.5 In 2022, the REDDIG Administration sent for factory repair the equipment listed in **Appendix B**.

2.6 At present, procedures are underway to deliver the equipment to its end users. Two (2) Skywan 1070 modems of the Paramaribo node, one (1) Skywan 1070 modem of the Curitiba node, and one (1) 1070 modem of the Asunción node are also in the process of being delivered.

2.7 Two defective 80W IBUCs, currently located in Maiquetia, Venezuela, are pending delivery to the SAM Office. Also, a 1070 modem is in the process of being shipped from Guayaquil for repair at the factory.

2.8 With the acquisition and reception of the Fortigate, Forti Switch, Forti Manager and Forti Analyzer units, and the completion of the training courses, it is expected that the equipment will be deployed and commissioned in 2023.

Satellite network spare parts

2.9 The REDDIG II Administration invites the focal points to consider that REDDIG equipment is already exceeding the halfway point of its useful life, so it is normal that new occurrences will require more frequent shipping, repair and replacement of equipment.

2.10 To repair an item, the following expenditures are incurred:

- a) Payment to the factory for maintenance performed;
- b) Payment to the transport company; and
- c) Payment to customs agents for their services.

2.11 Costs incurred in the maintenance of an item will be included in the annual fee to be paid by the State that has requested maintenance for the equipment of its node.

2.12 In case there is an item available in the SAM Office spare part storeroom with the same characteristics of the equipment sent for factory maintenance, the REDDIG Administration will (temporarily) send this equipment to the node in order to preserve the availability of the equipment. Once the original item is sent to the node, the spare part must be returned to the SAM Regional Office.

2.13 The Twenty-fourth meeting of the Coordination Committee of Regional Project RLA/03/901 approved Conclusion RCC/24-1 (see RCC/24 meeting report). This conclusion prevents the Project Administration from sending SAM Office spare parts to States that have not sent the original defective items for factory maintenance.

2.14 However, should a State in this situation request the purchase of an item, the Office can send a spare from its storeroom (which would become the property of the requesting State), charging it to the State's annual fee, and the Office would purchase another item to keep as a spare for the project.

2.15 As for costs and expenses, all costs and expenses shall be borne by the State requesting the definitive replacement of the part.

2.16 According to the guidelines contained in the RLA/03/901 project document, the State Administration will deposit in the Project account the value of the cost of the spare part as well as all expenses incurred for the replacement of the part. In case the project makes payments that could be agreed with the State Administration, these costs will be reimbursed by including them in the annual fee of the State.

2.17 It is noted that the cost of repairing damaged equipment, as well as the replacement of equipment or parts, is borne by the State, and, therefore, these costs are not shared with all REDDIG member States.

2.18 **Appendix C** to this working paper contains the inventory of spare parts in the storeroom of the Regional Office.

Status of the nodes

2.19 **Appendix D** to this working paper shows statistics obtained during the year 2022 on service provided and faults.

2.20 In 2022, the pandemic continued to disrupt normal activities, affecting nodes, due to the specific characteristics of each one, in terms of personnel availability, hindering the completion of the preventive maintenance plan established in previous years. These activities should be resumed based on the same timetable, adjusted to 2023. During 2022, priority was given to corrective maintenance.

2.21 The following nodes were added to the REDDIG MPLS network in 2022: Ilopango (28/03, El Salvador, COCESNA), ARSAT (13/12, Benavidez, Buenos Aires), and Madrid (5/12, Madrid, Spain).

2.22 It is noted that a monthly report is sent to Montreal on availability of MPLS nodes falling below the 99.7% service delivery value. Below this SLA parameter, the provider is penalised.

2.23 **Appendix E** contains an annual summary of the amounts paid for non-availability of the service.

2.24 Due to the stability and reliability of the ground network in most nodes, the ground network became the primary network and the satellite network became the back-up. See priorities in **Appendix F**.

2.25 Cirion and Intelsat provide access to the respective websites, showing the options available to generate or track a ticket, or to obtain important information on aspects related to the ground and satellite networks.

2.26 **Appendix G** shows information concerning the frequencies of the carriers in use, as well as other details.

2.27 In order to accommodate any changes in the MPLS network, the Contact Matrix is reviewed and updated on an annual basis, emphasising that everything continues to be centralised from the Manaus NCC.

2.28 At the request of the administrations of Argentina and Paraguay, an intern was assigned to the Asunción node (extension 5522), at the TWR FT of Encarnación (Paraguay), to facilitate coordination with the TWR FT of Posadas (Argentina). Although this requirement had not been envisaged from the beginning, efforts were made to meet this requirement.

2.29 During 2022, support was provided to the administrations of Argentina and Chile to test the exchange of radar data. Argentina sends radar data from the Malargüe sensor to Santiago, and Chile sends data from the Santiago sensor to Mendoza. It is still operating in test mode, with the expectation of increasing the exchange of surveillance data between the two States, according to pre-existing requirements and memorandum.

Network access to nodes

2.30 During 2022 and the first months of 2023, the nodes were distributed, by type of access, as follows:

- **Satellite and MPLS**: Ezeiza; Montevideo; Curitiba; Asunción; La Paz; Santiago; Lima; Brasília; Manaus; Recife; Guayaquil; Cayenne; Georgetown; Paramaribo; Piarcó; Maiquetía; Bogotá. **Subtotal: 17**
- **Only MPLS**: Rio de Janeiro; Ilopango; Cochabamba; Salt Lake City; Atlanta; ICAO SAM; Aireon; ARSAT (Buenos Aires); Madrid; Panama. **Subtotal: 10**
- **Only satellite**: Tegucigalpa (MEVA antenna). **Subtotal: 1**
- **MPLS in the process of being installed**: Johannesburg. **Subtotal: 1**
- **MPLS in project stage**: SITA. **Subtotal: 1**

Total: 30 Total operational: 28 In process: 1 In project stage: 1

2.31 It should be noted that, during 2022, the REDDIG Administration sent FXS cards to the Guayaquil node to re-establish at least some ATS speech circuits, which restored the capacity of the Guayaquil ACC with the adjacent centres.

2.32 At present, the minimum ATS speech services of Guayaquil are operating uneventfully. Issues related to hotline services between Ecuador and Peru are due to internal issues of each State, which need to be discussed and resolved.

2.33 Problems have continued to be reported in relation to changes in the prefixes of the public telephony network in Colombia, which, although reported by the Colombian administration in due course,

there are still cases where old or outdated dialling codes are being used.

Transfer of the REDDIG II Bogotá node

2.34 Regarding the transfer of the Bogotá node by virtue of amendment signed on 28 June 2019, it was still in progress at the time of drafting this working paper.

2.35 The performance of this activity is subject to the completion of the work being carried out by INEO ENGIE, hired for this purpose, at the request of the Colombian administration.

Node configuration back-up

2.36 In 2022, back-ups were made of network equipment configurations, for each station, which are stored and available at the Manaus NCC.

Security

2.37 The Technical Cooperation Bureau (TCB) carried out the procurement process for the firewall equipment, as per Conclusion RCC/22-4 of the Coordination Committee of Regional Project RLA/03/901. It should be noted that the purpose of the firewalls is to provide security, standardise the equipment and replace the edge routers in each node.

2.38 The foreseen distribution of firewalls can be found in **Appendix H**. In addition, the scheduled courses were delivered as shown in:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2022-RLA03901-FIREWALLS&t=1>

Solar flares

2.39 Solar flares affecting the satellite network are reported every year. This phenomenon occurs twice a year and is resolved by virtue of the geographical redundancy of the Manaus and Ezeiza NCCs, and the availability of the MPLS network.

Alternating operation of NCCs and the REDDIG Management Centre

2.40 In 2022, the operation of the NCCs and of the REDDIG management centre was not switched from Manaus to the Ezeiza NCC.

2.41 It is noted that, during the short periods of solar conjunction and occurrences, only the reference carrier was temporarily switched from the Manaus NCC to the Ezeiza NCC.

REDDIG II TRAINING PROGRAMME

2.42 In view of the pandemic and other factors, the following can be reported regarding training courses scheduled for 2022:

- a) **Recurrent training on REDDIG operation and maintenance:**
It is a regular task of the REDDIG Administrator to deliver this training during the annual visits to the nodes. It was only possible to carry out this activity during the mission to Cayenne (27 August to 3 September);

- b) **Course on security policies and firewall configuration and Advanced course on firewall management and monitoring:**
As previously explained in this working paper, training was provided according to the specifications of the equipment purchased.
- c) **Training for the Manaus NCC staff on IP packet analysis using *sniffer* (RADAR, AMHS, etc.):**
This activity could not be carried out due to Covid-19 restrictions.

2.43 With regard to RTO-09, it was held virtually on 13 and 14 October 2022, with more than 60 participants. For more information, visit:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2022-REDDIG-RTO>

REDDIG II OPERATION AND ANALYSIS OF THE IMPLEMENTATION OF NEW SERVICES

Activities and new services in the MEVA III – REDDIG II interconnection

2.44 The Second MEVA III - REDDIG II Interconnection Coordination Meeting (MIII-RII/INTERCON/02) was held in Lima-Peru, on 5-6 March 2022. Those who could not attend had the possibility of participating through the Zoom teleconferencing platform.

2.45 The meeting was attended by 54 participants from 9 member States of the NAM/CAR Regions (Aruba, Bahamas, Cuba, Curaçao, Dominican Republic, Haiti, Jamaica, Mexico, Trinidad & Tobago), 9 States of the SAM Region (Argentina, Brazil, Colombia, Chile, Ecuador, France, Guyana, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay and Venezuela), 2 observer States (United States and Panama) and COCESNA, including ICAO experts.

2.46 The meeting was presented with WP/2, containing a summary of the proposal made by the Coordination Committee of Regional Technical Cooperation Project RLA/03/901 for changing the interconnection scheme, which involved the implementation of REDDIG II nodes (MPLS) in Aruba, Curaçao, United States (Puerto Rico) and Jamaica, at no cost to these States, including the provision of interfaces as could eventually be required, to replace MEVA III satellite links with REDDIG II ground links (MPLS).

2.47 It was noted that this implementation of the four nodes by REDDIG would be for a fixed period of approximately two years, from March 2023 to February 2025, by which time it was estimated that the future CANSNET network would be in place.

2.48 On the other hand, it was noted that this proposal would only be feasible if the CAR States involved participated in it, given that it was not possible for REDDIG States to maintain two communication providers for the interconnection scheme. If one of the States involved did not agree to the installation of the node, then the proposal would not be feasible and communications would continue to be provided through MEVA III satellite links, as established in 2015.

2.49 See conclusion in **Appendix I** and further details at:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2022-REDDIG-MIII-RII-INTERCON02>

Antivirus software in NMS servers

2.50 As is done annually, the antivirus was renewed in 23 NMS servers, with a one-year licence. The renewal is due on 31 December of each year. The antivirus update was performed by the Manaus NCC staff in January 2022.

Support to coordination of extra-regional interconnections

2.51 In this regard, the support provided to COCESNA, Argentina, Venezuela, Peru, Brazil, Uruguay and Spain to establish P1/AMHS interconnections is noteworthy.

2.52 The Regional Office has an active participation in the interconnection of AMHS systems in the Region, as well as in different services that are exchanged between States, such as tests with the Brasilia OPMET bank, AIDC, ADS-B, etc. It was also noted that it provided support on different issues concerning services and systems in each State, that were external to REDDIG.

2.53 Usually, all available tools are used to provide the necessary support with actions aimed at achieving interconnections, exchanges, transport of different services and information, and actions aimed at information analysis, traffic capture, etc., in order to solve issues in the exchanged services, as well as with coordination and tasks performed in conjunction with the MEVA Administrator, etc.

2.54 Action was also taken in coordination with INTELSAT in relation to interference, measurements and antenna re-aiming at the time of transponder migration (in particular with the Brasilia node).

2.55 Regarding AMHS systems, Argentina upgraded the aeronautical messaging system, and for justified reasons, did not include a gateway for AFTN channels, which implied cancelling the circuit with Uruguay. In order to provide another way out for Uruguay (it had an AFTN circuit with SAEZ and another with SBBR), a temporary AFTN circuit was established with SPIM. This situation lasted until SUMU upgraded its AMHS system, which allowed the establishment of P1 connections pursuant to the plan and the foreseen extra-plan connections.

2.56 Regarding interconnections, **Appendix J** shows the interconnections established in 2022 and so far in 2023.

2.57 Likewise, discussions with APAC and EUR will continue for the interconnection of the CRV, New PENS and REDDIG II networks. Under this 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 Cirion (REDDIG II), and with the organisations and States involved (Conclusion RCC/24-3 Interconnection of regional IP networks).

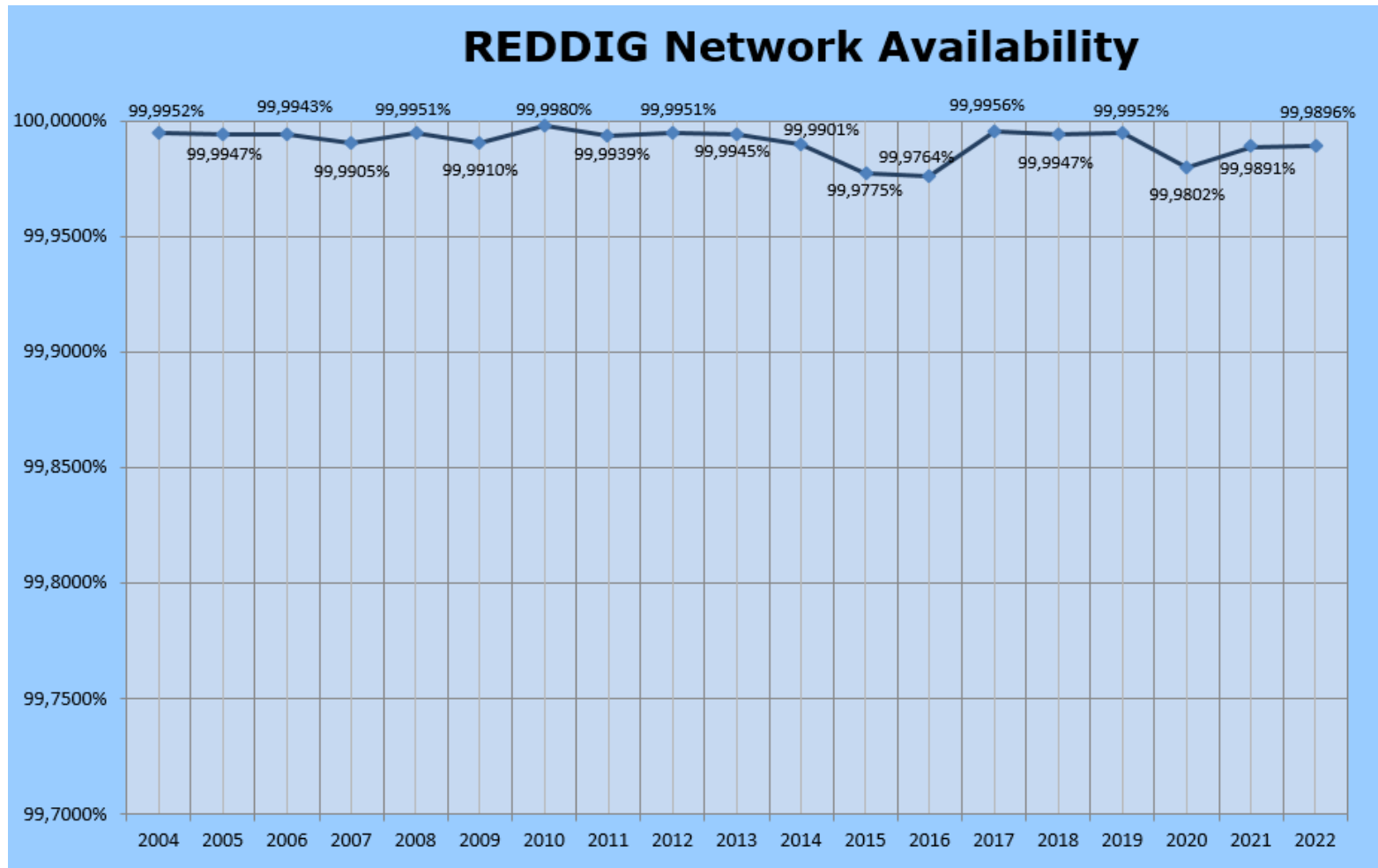
3 Suggested action

3.1 The Coordination Committee is invited to:

- a) take note of the information provided herein;
- b) review the activities carried out since RCC/28, and the relevant appendices of this working paper; and
- c) discuss the issues presented and others it may deemed appropriate.

APÉNDICE / APPENDIX A

Disponibilidad de la REDDIG / REDDIG Availability



APÉNDICE B / APPENDIX B**Movimientos Logísticos / Logistic Movements****EQUIPOS ENVIADOS PARA REPARAR EN FÁBRICA DURANTE 2022 /
EQUIPMENT SHIPPED FOR FACTORY REPAIR DURING 2022**

MODEM SKYWAN 1070		
EQUIP.	S.N.	NODO / NODE
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)
IDU 1070B	#00:40:71:F0:51:C2	spare (ICAO)
IDU 1070B	#00:40:71:F0:2C:3C	La Paz (Bolivia)
IDU 1070B	#00:40:71:F0:2C:3C	La Paz (Bolivia)

EQUIPOS RF TERRASAT / 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)

APÉNDICE C / APPENDIX C

Repuestos REDDIG II 2022 / REDDIG II Spare Parts

Description	Qty	Unit Price USD	Total Price USD
INDOOR Equipment			
— IDU 1070 19" NS + PS AC	1	20,664.00	20,664.00
— License Key Mesh Topology		included	
GORGY TIMING Equipment			
GPS Master Clock— RT9s including on outdoor GPS	1	3,289.00	3,289.00
Antenna and cable			
GPS standalone outdoor Antenna for RT9s (without cable)	1	937.00	937.00
LAN Port Server			
NPORT 5610-8	1	1,230.00	1,230.00
10 MHz Redundancy Equipment			
BIAS-T switch (10MHz redundancy system)	1	2,125.00	2,125.00
Passive DC-Block (Power injector 10MHz pass)	4	542.00	2,168.00
Passive DC-Block (RF Bandwidth)	4	130.00	520.00
Passive Splitter (2 Port RF Bandwidth)	2	265.00	530.00
Spare Parts for HPE PROLIANT DL160 Server			
Fans for HPE PROLIANT DL160 Server	5	124.00	1,240.00
Hot-Plug HP Midline HDD 500GB 7.2K SATA	2	405.00	810.00
OUTDOOR Equipment			
RF Equipment			
— IBUC 80W	1	18,653.00	18,653.00
— Tx 1+1 switching system	1	8707.00	8707.00
— Rx 1+1 switching system	1	9,523.00	9,523.00
Waveguide Switch (CPRG flange) + Control cable	1	3,528.00	3,528.00
LNB with external 10MHz reference	1	804.00	804.00
RF filter (for LNB path)	1	676.00	676.00
N-Female Type coaxial connector (for CNT/LMR-400 Type coaxial cable)	4	45.00	180.00

N-Male Type coaxial connector (for CNT/LMR-400 Type coaxial cable)	4	44.00	176.00
N-Male Type coaxial connector (for CNT/LMR-600 Type coaxial cable)	4	67.00	268.00
EQUIPOS Y PIEZAS DE REPUESTO EN GENERAL/EQUIPMENT AND SPARE PARTS IN GENERAL			
Modem Satelital	1		
Cable de energia	1		
Tarjeta MOD	1		
Tarjeta SIC/DEMODO	1		
Tarjeta FPG	1		
Tarjeta UIM	1		
Cable de consola	1		
Cable de RF N-SMA Macho	1		
ROUTER Cisco 2901	1		
Two port Async-Sync Serial WAN interface card	1		
Two port Async-Sync Serial WAN interface card	1		
two port voice interface card FXS	1		
ROUTER Cisco 2911	1		
24 PORT RJ45 PATCH PANEL	1		
01 TARJETA EVM-HD TELEFONICO	1		
Cable serial CISCO V.24 DTE DB25	1		
Cable serial CISCO V.24 DCE DB25	1		
Cable telefonico RJ11 cross over	1		
High density 8 port analog and digital extension module	1		
ROUTER Cisco 2901	1		
Two port Async-Sync Serial WAN interface card	1		
two port voice interface card FXS	1		
Cable serial CISCO V.24 DCE DB25	1		
Rx 1+1	1		
Handheld Terminal with 2 m cable	1		
Accesorios para RX 1+1	1		
Cables de energia	2		
Cable Coaxial de RF con conectores tipo N 6m.	1		
Cable de Gestion para LNB	1		
Cable Coaxial de RF con conectores tipo N 30 cm.	2		

Wave Guide Switch for LNB	1		
LNB Banda C	1		
LNB Banda C	1		
Switch Netgear de 26 Puertos	1		
Cable USB	1		
Switch Netgear de 26 Puertos	1		
IBUC 40W	1		
IBUC 40W	1		
1+1 Interface	1		
Switch de Guia de Onda	1		
Cable Coaxial con conectores tipo N 30cm	2		
Cables de gestión con conector tipo Militar	2		
Cable de gestión tipo ethernet	1		
Cable de Energía	2		
Manuales de Curso de Rio de Janeiro			
Documentos Oficiales REDDIG II			
Manuales REDIG II			
Documentos Oficiales REDDIG II			
IBUC Terrasat 80 W	1		
IBUC Terrasat 80 W	1		
Tarjeta Serial MOXA de 8 Puertos RS-232 PCI	1		
Disco Duro Externo IOMEGA NAS 2 Tb	1		
Fuente para Disco Duro	1		
Manuales	1		
UPS Eaton Eclipse ECO 1200 VA	1		
Cable Multipuerto Moxa 8 puertos	1		
Cable Cisco V.24 DTE	5		
Cable Cisco V.24 DCE	11		
Cable DB25 Male-Female	6		
Cable Patch Cord ethernet RJ45	6		
Cable Multiple Cisco 8 puertos ethernet con adaptadores a DB25	2		
Two port Async-Sync Serial WAN interface card	1		
Four port Async-Sync Serial HWIC	1		

Four port Async-Sync Serial HWIC	1		
Eight port Async interface card	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Two Port Voice Interface Card FXS.	1		
Four Port Voice Interface Card FXS	1		
Four Port Voice Interface Card FXS	1		
Four Port Voice Interface Card FXS	1		
Four Port Voice Interface Card FXO	1		
One Port 2nd Gen Multiflex trunks Voice Wan Interface Card E1/T1	1		
High Density voice/fax external Module	1		
Two Port 2nd Gen Multiflex trunks Voice Wan Interface Card E1/T1	1		
Eight port Async-Sync interface card	1		
Module Adapter for SM Slot on CI	1		
Module Adapter for SM Slot on CI	1		
Impresora Laser Jet Pro 400 M401dn	1		
Cables de Energía	1		
8 Port Device Server 10/100 eth	1		
RSS 16 SLOT 4U Chasis	1		
Power Module	1		
Network Control Card	1		
Dual 8 wire Module Jack A/B card	1		
Dual 8 wire Module Jack A/B card	1		
D25 A/B Card	1		
D25 A/B Card	1		
D25 A/B Card	1		

D25 A/B Card	1		
RSS 16 SLOT 4U Chasis	1		
Power Module	1		
Network Control Card	1		
Dual 8 wire Module Jack A/B card	1		
Dual 8 wire Module Jack A/B card	1		
D25 A/B Card	1		
D25 A/B Card	1		
High density 8 port analog and digital extension module	1		
High density 8 port analog and digital extension module	1		
Cable de consola de Cisco	2		
KVM Extender	1		
Convertidor USB – Serial	1		
Telefono IP DEPAEPE	1		
Mouse Optico USB Negro	1		
Regleta electrica con 05 tomas	2		
Teclado Estandar K120	1		
Filtro RF	1		
Filtro RF	1		
Barras de Anclaje de acero	3		
Bloques de anclaje de plastico negro	6		
Tornillos de sujecion de acero	20		
Blank panel para RSS	3		
Regleta electrica con 05 tomas	2		
Adaptadores Cambia genero DB25	15		
Pantalla LCD 27"	1		
HP ProLiant DL160 Gen8 Base – Server	1		
NTP Time Server Master Clock	1		
GPS Antenna + Cable	1		
Router Cisco 2901	1		
Router Cisco 2901	1		
Router Cisco 2901	1		
IBUC Terrasat 80 W	1		

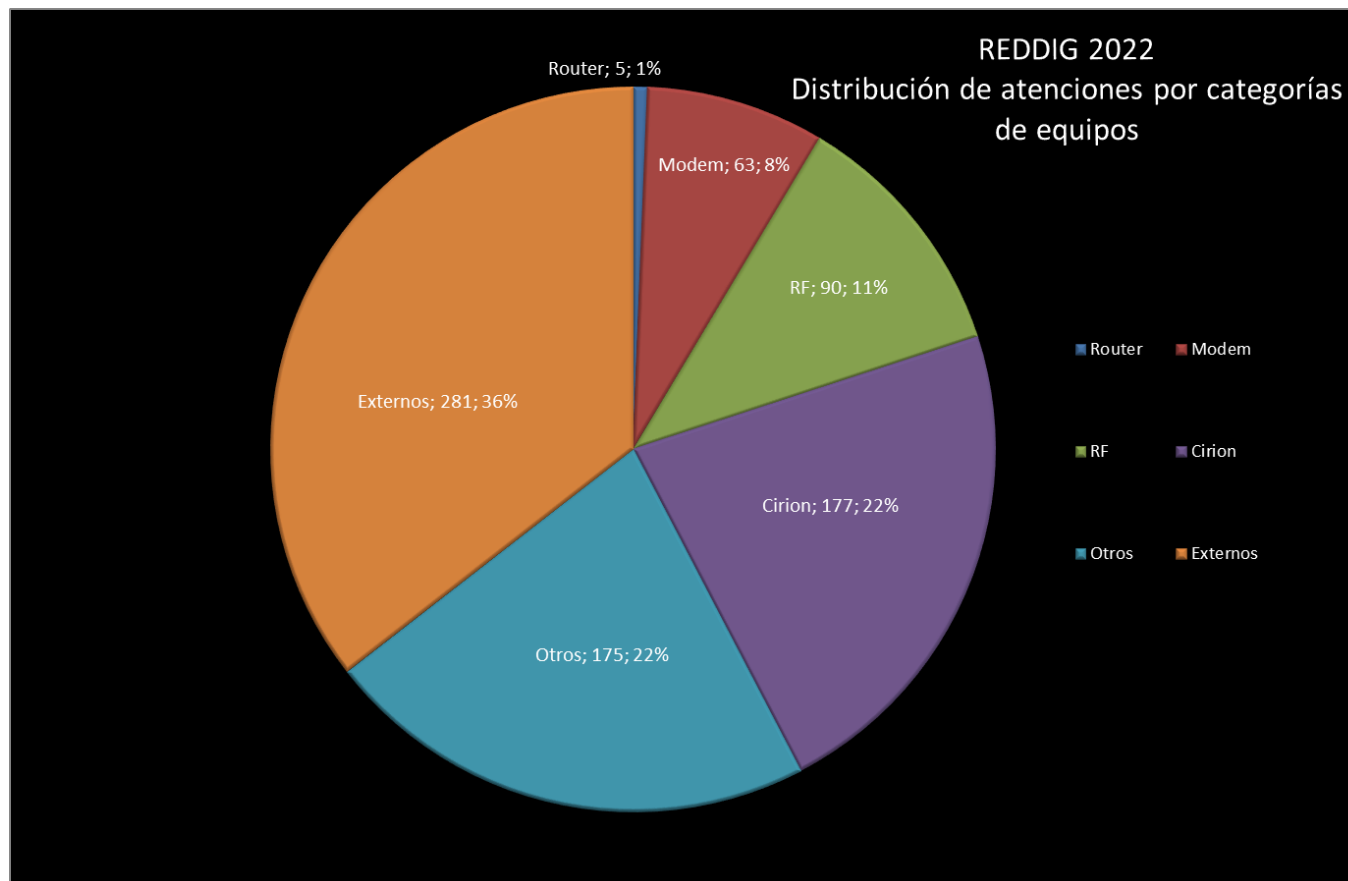
Digital Voice Processor	1		
E1 Expansion	1		
V.35 H	1		
Multi I/O V.24	1		
Multi I/O V.24	1		
Multi I/O V.24	1		
Multi I/O V.24	1		
Multi I/O V.24	1		
Multi I/O V.24	1		
Modulo Ram 32 MB	1		
Modulo Ram 32 MB	1		
Modulo Ram 64 MB	1		
Modulo Ram 64 MB	1		
Modulo Ram 64 MB	1		
Modulo Ram 64 MB	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Slim Card E&M	1		
Universal I/O	1		
Universal I/O	1		
Universal I/O	1		
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Universal I/O	1		
Universal I/O	1		
Ring Generator	1		
Ring Generator	1		
Ring Generator	1		

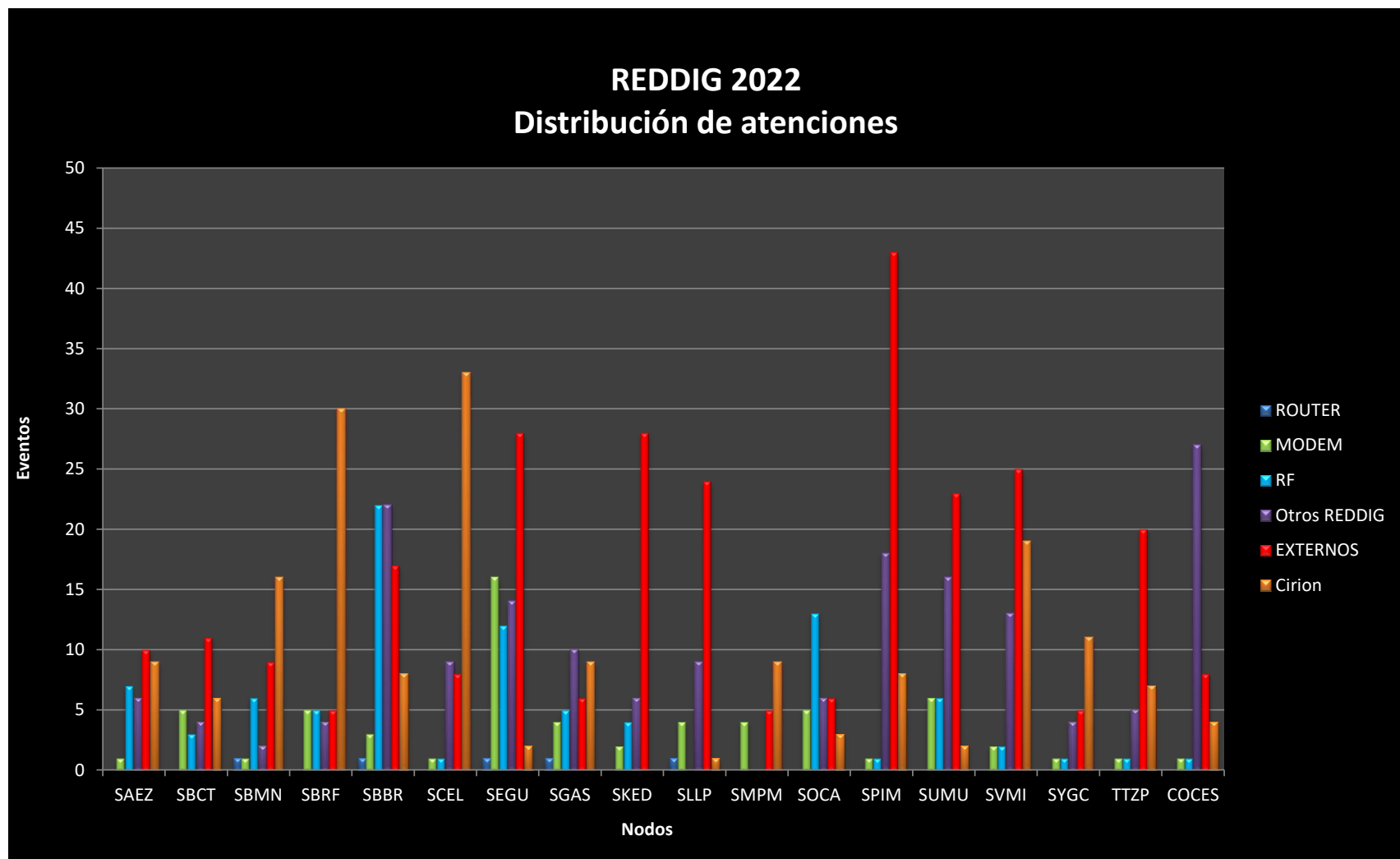
Ring Generator	1		
Ring Generator	1		
Ring Generator	1		
Chasis CX950	1		
Multiplexor CX950e Chasis+Placa Madre	1		
Multiplexor CX950e Chasis+Placa Madre	1		
Modem Linkway 2100	1		
Tarjeta MODEM	1		
Tarjeta Ethernet	1		
FR TIA	1		
Fax CANON H12130	1		
Telefono analogico CONAIRPHONE	1		
SSPA 40 W	1		
SSPA 40 W	1		
Fuente para Modem Linkway	1		
Fuente para Modem Linkway	1		
Fuente para Modem Linkway	1		
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Fuente para Modem Linkway	1		
Rollo de cable ASSy 3 x 2.5 50 m	1		
Rollo de cable Multipar 50 m	1		
Rollo de cable Multipar 50 m	1		
LNB Banda C	1		
Cables Patch Cord Ethernet 3m	1		
Cables DB9-DB25 3m	1		
Rollo de Cable Coaxial 50R 50m	1		
SSPA 40 W	9		

GPS Datum	2		
Cable de consola Cisco	1		
Cable de Gestion SSPA Paradise	1		
Conectores Tipo N 50R sin ensamblar	1		
Pulsera anti estatica	1		
Paquete de Placas vacias para equipos Memotec.	1		
Combinador-Divisor de RF	4		
Convertidos RS232-RS485	1		
Paquete de instalacion SUN SOLARIS	1		
Tarjeta Multipuerto Serial	1		
Cable multipuerto DB25 para Multi I/O Memotec	1		
Cable Patch Cord Ethernet RJ45 5m	2		
Cable de consola Memotec	1		
Adaptador DB9-DB25	2		
Adaptador DB25-M34	2		
Cable de energía	1		
Cable RF Coaxial N-SMA Male	2		

APÉNDICE D / APPENDIX D

Atenciones y Averías / Service provided and faults





APÉNDICE E / APPENDIX E

DISPONIBILIDAD DE LUMEN DURANTE EL AÑO 2021 / LUMEN AVAILABILITY IN 2021

	January 2022		February 2022		March 2022		April 2022		May 2022		June 2022		July 2022		August 2022		September 2022		October 2022		November 2022		December 2022		TOTAL	
	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	Availability	USD Credit	USD Credit	
SAEZ											98,89%	USD 6,42													USD 6,42	
SBBR													99,40%	USD 2,36	98,844	USD 6,76			99,50%	USD 1,58						USD 10,70
SBCT			99,56%	USD 1,08																						USD 1,08
SBMN	92,95%	USD 56,40	99,31%	USD 3,26											97,68%	USD 16,86	98,17%	USD 12,82								USD 89,34
SBRF	99,02%	USD 5,34	99,26%	USD 3,48	97,20%	USD 19,75							99,36%	USD 2,68					97,55%	USD 17,00	84,13 %	USD 123,03	94,34 %	USD 42,38	USD 213,66	
SCEL			66,31%	USD 273,84			98,48%	USD 10,00	97,72%	USD 16,28	98,77%	USD 7,59	98,94%	USD 6,27												USD 303,98
SEGU							98,63%	USD 8,77																		USD 8,77
SGAS	99,32%	USD 7,05					98,69%	USD 18,94					99,58%	USD 2,33										99,56 %	USD 2,72	USD 31,03
SKED																										
SLLP																										
SMPM													98,45%	USD 49,45							99,63%	USD 2,68				USD 52,13
SOCA					98,50%	USD 31,92																				USD 31,92
SPIM													99,04%	USD 4,56												USD 4,56
SUMU																	94,07%	USD 122,15								USD 122,15
SVMI														99,39%	USD 8,81											USD 8,81
SYGC			99,38%	USD 15,04															98,59%	USD 52,36	92,26%	USD 351,96				USD 419,36
TTZP													98,25%	USD 12,91												USD 12,91

USD 1.316,83

APÉNDICE F / APPENDIX F

Prioridad de utilización de los segmentos de red (2022) / Priority of use of network segments (2022)

Prioridad OCT 2022

	SAEZ	SAEZ	SLLP	SLCB	SBRF	SBMN	SBBR	SBRJ	SBCT	SCEL	SKED	SEGU	SOCA	SYGC	SGAS	SPIM	SMPM	TTZP	SUMU	SVMI	MHTG	MHIL	KATL	KSCL	LETO	FAJO	MPTO	AIREON	OACI	SITA	NZAA	Terrestre	Satelital
1 Argentina-Ezeiza	T	T	T	T	T	T	T	T	T	T	S	S	S	S	T	T	T	S	T	T	S	T	T	T	T	T	T	T	T	T	71,43%	28,57%	
2 Argentina-ARSAT	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	S	T	T	T	T	T	T	T	T	100,00%	0,00%	
3 Bolivia-La Paz	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	S	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
4 Bolivia-Cochamba	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
5 Brasil-Recife	T	T	T	T	T	T	T	T	S	S	S	S	T	S	S	S	T	S	T	S	S	T	T	T	T	T	T	T	T	56,52%	43,48%		
6 Brasil-Manaus	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	S	T	T	T	T	T	S	T	T	T	T	T	T	T	T	91,30%	8,70%	
7 Brasil-Brasilia	T	T	T	T	T	T	T	T	S	S	T	T	T	T	T	T	T	T	S	T	T	S	T	T	T	T	T	T	T	T	82,61%	17,39%	
8 Brasil-Río de Janeiro	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
9 Brasil-Curitiba	T	T	T	T	S	T	S	T	T	S	S	S	S	S	T	S	T	S	T	S	S	T	T	T	T	T	T	T	T	T	52,17%	47,83%	
10 Chile	T	T	T	T	S	T	S	T	S	T	S	S	S	S	S	S	T	S	S	T	S	T	T	T	T	T	T	T	T	T	47,83%	52,17%	
11 Colombia	S	T	T	T	S	T	T	T	S	S	T	S	S	S	T	T	S	S	T	S	S	T	T	T	T	T	T	T	T	T	56,52%	43,48%	
12 Ecuador	S	T	T	T	S	T	T	T	S	S	T	S	S	S	T	T	S	S	T	S	S	S	T	T	T	T	T	T	T	T	52,17%	47,83%	
13 Francia	S	T	T	T	T	T	T	T	S	S	S	S	T	S	S	T	S	T	S	S	T	S	T	T	T	T	T	T	T	T	56,52%	43,48%	
14 Guyana	S	T	T	T	S	T	T	T	S	S	S	S	T	T	S	S	T	S	S	S	S	T	T	T	T	T	T	T	T	T	47,83%	52,17%	
15 Paraguay	T	T	T	T	S	T	T	T	T	S	S	S	S	S	T	S	T	S	S	S	S	T	T	T	T	T	T	T	T	T	52,17%	47,83%	
16 Perú	T	T	T	T	S	S	T	T	S	S	T	T	S	S	S	T	S	T	S	S	T	S	T	T	T	T	T	T	T	T	56,52%	43,48%	
17 Suriname	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
18 Trinidad & Tobago	S	T	T	T	S	T	S	T	S	T	S	S	T	T	T	T	T	T	T	S	S	S	T	T	T	T	T	T	T	T	60,87%	39,13%	
19 Uruguay	T	T	T	T	T	T	T	T	T	S	S	S	S	S	S	S	T	S	T	S	T	S	T	T	T	T	T	T	T	T	60,87%	39,13%	
20 Venezuela	T	T	T	T	S	T	T	T	S	T	T	S	T	S	S	T	T	S	T	T	S	T	T	T	T	T	T	T	T	T	69,57%	30,43%	
21 COCESNA-Tegucigalpa	S	T	T	T	S	S	S	S	T	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	0,00%	100,00%	
22 COCESNA-Ilopango	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
23 EEUU-Atlanta	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
24 EEUU-Salt Lake City	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
25 España-Madrid	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
26 Sudáfrica-Johannesburgo	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
27 Panamá	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
28 AIREON	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
29 Oaci-Lima	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
30 SITA	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	
31 New Zeland-Auckland	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	100,00%	0,00%	

APÉNDICE G / APPENDIX G

FRECUENCIAS INTELSAT / INTELSAT FREQUENCIES

Carrier 1	Carrier 2	Carrier 3
MANAOS	LIMA	MAIQUETÍA
EZEIZA	GUAYAQUIL	CAYENA
SANTIAGO	LA PAZ	GEORGETOWN
MONTEVIDEO	BOGOTÁ	PARAMARIBO
CURITIBA	ASUNCIÓN	PIARCO
		BRASILIA
		RECIFE
		LIMA
		TEGUCIGALPA

En banda C:
Portadora 1: subida..6292.85000 Mhz, bajada.. 4067.85000 Mhz
Portadora 2: subida..6294.25000 Mhz, bajada.. 4069.25000 Mhz
Portadora 3: subida..6295.60000 Mhz, bajada.. 4070.60000 Mhz
En banda L:
Portadora 1: 1040.5310
Portadora 2: 1039.1065
Portadora 3: 1037.8130

Satellite	Intelsat 14/315
Transponder	A38CV/A38CV
Beam	AMCV/AMCV
Polarization	V/V
Lease Assignment	6292.0/4067.0 - 6296.4/4071.4
Lease Resource	4.4 MHz

6.292,85000	6.294,25000	6295,60000 C B \pm Uplink
4.067,85000	4.069,25000	4.070,60000 C B \pm Downlink
1.082,15000	1.080,75000	1.079,40000 L Ba LO Frequency-Carrier C band

OL - frq banda C = frq em banda L
Freq de test con Intelsat= 6296,40000 banda C 1078600000 banda L

APÉNDICE I / APPENDIX I

CONCLUSIÓN MIII-RII INTERCON/02-01 / CONCLUSION MIII-RII INTERCON/02-01

Conclusion MIII-RIII INTERCON/02-01 IMPLEMENTATION OF THE NEW MEVA-REDDIG INTERCONNECTION SCHEME	
That the Secretariat of Project RLA/03/901: Once the consent of the States involved (Aruba, Curaçao, United States and Jamaica) has been received for the installation of the MPLS terrestrial network nodes of REDDIG II, proceed to take the necessary actions for the acquisition and start-up of the nodes. These actions must ensure the continuity of the service, and will be subject to the acceptance of the States within a period of time that allows said transition to take place.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Technical/Operational
Why: To provide better communications at the interface of the CAR and SAM Regions, through a new interconnection scheme.	
When: As of June 1 st , 2022.	Status: Approved at the MIII-RII/INTERCON/02 Meeting
Who: Secretariat	

Connections implemented and in process during 2022/23

Argentina

- Ezeiza MTA – Montevideo MTA
- Ezeiza MTA – Johannesburg MTA (in process)
- Ezeiza MTA – Caracas MTA (extra-plan – implemented)
- Ezeiza MTA – Madrid MTA (extra-plan – in process)

Brazil

- Brasilia MTA – Montevideo MTA
- Brasilia MTA – Lisboa MTA (coordination has started)
- Brasilia MTA – Madrid MTA via REDDIG

Guyana

- Georgetown MTA – Piarco MTA (being coordinated)

Trinidad & Tobago

- Piarco MTA – Atlanta & Salt Lake City MTA via REDDIG (being coordinated)

Uruguay

- Montevideo MTA – Brasilia MTA
- Montevideo MTA – Ezeiza MTA
- Montevideo MTA – Lima MTA (extra-plan)

Venezuela

- Caracas MTA – Curaçao MTA (coordination has not started yet)
- Caracas MTA – Ezeiza MTA (extra-plan)
- Caracas MTA – Madrid MTA