Agenda Item 3: **Report on the activities carried out to date since the last meeting of the Coordination Committee**

REPORT ON ACTIVITIES CARRIED OUT TO DATE SINCE THE LAST MEETING OF THE COORDINATION COMMITTEE

(Presented by the Secretariat)

SUMMARY

This working paper presents information on the progress made in the conduction of activities agreed upon at the last REDDIG Coordination Committee meetings (RCC/24 and RCC/25 Extraordinary), as part of the 2020 work plan.

REFERENCES

- REDDIG Contract 22501200 and Amendment VIII to Contract 22501200;
- Twenty-fourth Meeting of the REDDIG Coordination Committee (RCC/24) (Lima, Peru, March 03 to 06, 2020);
- Twenty-fifth Workshop/Meeting of the SAM Implementation Group (SAM/IG/25) –Regional Project RLA/06/901 (Lima, Peru, November 02 to 04, 2020); and
- Twenty-fifth Extraordinary Meeting of the REDDIG Coordination Committee (RCC/25) (Teleconference, October 16, 2020).

ICAO Strategic Objectives:	*A – Safety* *B – Air navigation capacity and efficiency*

1. Background

1.1 The main activities that the last meetings of the REDDIG Coordination Committee (RCC/24 and RCC/25 Extraordinary) agreed to include in the 2020 work plan, in addition to operation, support and maintenance of the network, were as follows:

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

1.2 This working paper also presents REDDIG logistics aspects during 2020.

2. Description

MONITORING THE PERFORMANCE OF REDDIG II

2.1 It is stated that the expected parameters are being worked on, and the availability for 2020 was 99.98% (the expected availability by design is better than 99.97% as stated in contract 22501200, page 5). **Appendix A** of this working paper presents the REDDIG II availability graph until 2020.

2.2 It should be mentioned, that on January 30, 2020, INEO/ENGIE ended the guarantee for the provision of the REDDIG II.

LOGISTICS ASPECTS

2.3 In **Appendix B** to this working paper, you can see the logistics movements that were made from the Regional Office during 2020.

2.4 During 2020, two 80W IBUCs were delivered for repair, which returned and were sent to their origin (nodes in Brazil).

Spare parts of the satellite network

2.5 It is important to take into account that REDDIG equipment is exceeding half its useful life cycle, and failures usually increase, therefore, it is necessary to carry out logistics processes for shipping, repair and replacement of equipment more frequently.

2.6 To repair an item, the following expenses occur:

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

2.7 The expenses incurred in the maintenance of an item will be included in the annual quota of the State that has requested the intervention of maintenance.

2.8 In the event that there is an item available in the SAM Office Spare Parts Room with the same characteristics of the equipment sent for factory maintenance, the REDDIG Administration will deliver said equipment (temporarily) to the node to maintain its availability. Once the original equipment from the node has been returned, the item used as spare must be sent back to the SAM Regional Office.

2.9 During the Twenty-fourth Meeting of the Coordination Committee of the Regional Project RLA/03/901, Conclusion RCC/24-1 was approved (see Review of the Report of the Twenty-fourth Meeting of the Coordination Committee (RCC/24) and of the Report of the Twenty-fifth Extraordinary Meeting of the Coordination Committee (RCC/25). This conclusion prevents the project administration from sending spare parts from the Office to the States that did not send the original items with failure for factory maintenance.

2.10 However, in the event that a State, in this situation, requests the acquisition of an item, the Office may send a spare part that is in the warehouse (which would become part of the requesting State), and the Office would purchase another item to remain as a spare part for the project, that will be charged in the annual quota of this State.

2.11 It is recalled that the nodes that are pending to send equipment for factory repair are La Paz (two Skywan 1070 modems and an Rx 1+1 Switching System), Maiquetía (two Terrasat 80W

IBUCs and one Skywan 1070 modem), and Recife (a Skywan 1070 modem – already in the process of being shipped).

2.12 In **Appendix C** to this working paper, the stock of spare parts in the regional office warehouse is presented.

Current situation of nodes

2.13 **Appendix D** to this working papers shows the statistics obtained during 2020 on Support, Breakdowns, and Availability of REDDIG.

2.14 It is important to mention that on January 20, 2020, the Guayaquil node caused a total failure. The cause was a major energy problem involving not only the REDDIG node, but also all Guayaquil services and systems, the auxiliary power equipment (UPS) and ATS telephone station were affected, to name two cases. The REDDIG node ran again with commercial power, but with no UPS.

2.15 After a while, the Ecuadorian Administration installed a new UPS, returning everything related to the REDDIG components to normal. However, since 20 January 2020, ATS oral services are still not functioning. The reason is that Guayaquil's PABX ATS is out of service to date.

2.16 It should be noted that throughout 2020, the REDDIG Administration has received complaints about this situation, in particular from Peru and Colombia. All these claims have been answered that the cause of the lack of ATS oral communications is exclusively due to the situation of the telephone exchange, in Ecuador, that is out of service. Complaints for inconveniences in oral communications using DDI have also been received.

2.17 Accordingly, the Administrations have been requested to consult with the Ecuadorian Administration regarding ATS oral communications, status of problem resolution, and any other information.

2.18 It is important to note that this particular situation has led to the use of AIDC, becoming the main tool for coordination with the ACCs of Lima and Bogota, reminding that the transport platform for such application is REDDIG.

2.19 In this regard, and from the beginning of the telephone exchange failure, REDDIG administration repeatedly offered the Ecuadorian administration FXS boards to be installed on one of the REDDIG routers, with the aim of recovering 4 ATS oral circuits and being able to provide these services until Ecuador can repair or eventually acquire a new telephone exchange. In this last case, colleagues in Ecuador have been suggested to purchase an IP/hybrid PABX that will best meet future requirements.

2.20 Regarding repairs in factory, a 1070 modem of the Lima node is now available for installation, and two 80W IBUCs of the Manaus and Recife nodes are already installed on site.

2.21 Observation is made on the extended period that the equipment remain in the respective customs, and the importance for focal points to collaborate with logistical tasks, in order to avoid these situations. **Appendix E** to this working paper presents the list of focal points of participating States of the network for update during the RCC/26 Meeting.

TRANSFER OF THE BOGOTA REDDIG NODE

2.22 Regarding the process of moving the Bogota node (in an amendment signed on June 28, 2019) to date, it is delayed due to Customs and Nationalization matters, process currently carried out by the Colombian Administration.

ADDITIONAL GROUND NETWORK NODES (MPLS)

2.23 As agreed by project members, the SAM Regional Office conducted all administrative and technical coordinations to integrate the additional Atlanta and Salt Lake City nodes into REDDIG.

2.24 In this regard, and after exceeding all the established requirements and tests in which Brazil (DECEA), the United States (FAA), Peru (CORPAC) and the administration of the network were involved, from the first days of December the interconnections P1/AMHS (between Brazil - the United States and the United States – Peru and Brazil) were established using the MPLS nodes of Atlanta and Salt Lake City.

2.25 This event established a real milestone in the Region for all that this has meant in the future, and undoubtedly contributing not only to those directly involved, but to the entire Region. It is a major breakthrough that undoubtedly contributes to all the objectives set for the high standards of civil aviation services.

GROUND NETWORK UPGRADE

2.26 Lumen, with supervision and the corresponding testing by the network administration, has performed the bandwidth upgrades of all nodes from 256 Kbps to 1 Mbps. This serves to improve the performance and availability that is committed, attending to the useful life of the satellite network equipment and the logistical difficulties mentioned. In addition to having prepared a more suitable scenario for the implementation of new services.

2.27 Regarding the aforementioned, and depending on the requirements towards the supplier (quarterly meetings are held with the supplier to discuss news, improvements, and the intended future vision) to improve the quality of services, Lumen continued with the last mile supplier change process. These tasks were completed at the Manaus and Recife nodes, and is in process at the Cayena node.

2.28 A monthly report is sent to Montreal with the availability of the States that are below the value of 99.5% (SBMN and TTZP) and 99.7% (other nodes) of the provision, as the case may be, in order to penalize the Lumen company for the observed breaches. The availability of Lumen/Centurylink for the year 2020 is attached in **Appendix F.**

2.29 An annual review and update of the Contact Matrix is made, clarifying that everything continues to be centralized from the NCC Manaus. Likewise, work continues to change the topology and generate the necessary redundancies. Another item mentioned is about the reordering that allows a neater distribution of the spread networks.

2.30 Finally, it should be mentioned that contract 22501220 ended on January 15, 2021, and that currently, the ground network is under a new contract, as a result of a bidding process that was informed during the RCC/24.

REDDIG PHONE DIRECTORY

2.31 The REDDIG Administration requires the focal points, as it does annually, to update the telephone directory (ATS and Administrative), or when there are modifications. In this regard, it is reminded that this information is subject to the 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 be informed through official channels.

2.32 It is reminded and reiterated, to inform the different CNS sectors about the options they have for coordination with their counterparts, considering the administrative telephone services, messaging service, and Oral ATS of the REDDIG.

IMPROVEMENT IN COORDINATIONS

2.33 During 2020, it was reiterated and requested to inform the REDDIG Administration and the nodes involved, about technological changes, failure situations or configurations carried out in the States systems, affecting the services provided by REDDIG (PABX, Voice Switching, MTA, automated systems, data networks, exchange of surveillance data , etc.).

2.34 Mostly there were drawbacks with the MTAs of Bolivia and Ecuador.

BACK UP OF THE NODE CONFIGURATION

2.35 During 2020, the backup of the configurations of the network equipment were made, for each station, which are guarded and available in the NCC of Manaus.

SECURITY

2.36 Password changes to station routers and switches are made annually to keep active security measures, processes integrity and configuration of equipment. In some cases where state LAN-level situations were detected, access list was implemented. These measures will be strengthened and new measures will be implemented when firewalls and switches in the process purchase is finalized. In case of any intervention by the local technical staff, it must be communicated to the NCC, to inform the activities to be performed and request access.

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

PURCHASE OF SPARE PARTS

2.38 Regarding the service life of equipment and particularities in the logistical and administrative processes of each State; that cause a lack of sufficient spare parts, it is recommended that the Administrations of each State foresee the purchase of spare parts for their nodes in order to attend to any novelty immediately and ensure the operation of the services. So far, it is recorded that the only State that has purchased spare parts for its nodes is Brazil, and that Venezuela has some spare parts from a similar national network

2.39 The different logistical disadvantages, equipment registrations with local agencies, local infrastructure inconveniences, the service life of satellite stations, the fact that the equipment is no longer manufactured and that spare parts will be available by manufacturers only until 2022, has required greater effort in relation to preventive and corrective maintenance , which have been affected by the pandemic situation.

2.40 In addition, during 2020 the purchase of a Skywan 1070 modem was made, which was delivered to the Maiquetía node in Venezuela. During installation, an inconvenience was detected regarding the type of software license that was then fixed.

SOLAR EXPLOSIONS

2.41 Every year the process for the notification of solar explosions affecting the satellite network is carried out. A phenomenon that occurs twice a year and is saved thanks to the geographical redundancy of the NCCs of Manaus and Ezeiza.

REDDIG TRAINING PROGRAMME

2.42 During 2020, as a product of the pandemic, the following planned training could not be completed.

a) **Recurrent on REDDIG Operation and Maintenance:**
It is a common task for the REDDIG Administrator to provide this training during his annual visits to the nodes, which was not feasible because of the COVID-19 restrictions;

b) **Course on firewall security and configuration policies and Advanced course on firewall management and monitoring:**
In both cases, the trainings were not possible because of the COVID-19, which affected particularly the bidding process.

c) **Training for NCC Manaus staff on analysis of IP packets with sniffer (RADAR, AMHS, etc):**
This activity was not possible because of the restrictions in relation to COVID-19.

2.43 Regarding the RTO-09, it was supposed to be held in Cochabamba (Bolivia), but was put on hold until the situation allowed it.

REDDIG II OPERATION AND ANALYSIS OF THE IMPLEMENTATION OF NEW SERVICES

DEVELOPMENT OF A SPACE FOR NETWORK CONSULTATIONS

2.44 It is reported that different applications are being used to facilitate coordination in the attention to work or needs that arise.

2.45 In this regard, the Brazilian administration has been required to get access to a Wifi or similar network so that staff working at the NCC can have access to electronic messaging (WhatsApp, Signal, Telegram, etc.); tool that has greatly facilitated coordination throughout this pandemic period. Currently, all NCC staff, including the Administrator, use their own cell phone services to address this need.

RCC/25 EXTRAORDINARY

2.46 Via teleconference on 16 October 2020, the Twenty-fifth Extraordinary Meeting of the REDDIG Coordination Committee (RCC/25) was held. During the meeting, the actions to be taken with regard to outstanding cost-sharing contributions were discussed.

2.47 The Committee reviewed the information related to the situation on outstanding contributions, the impact on the services contracted by REDDIG and, in the event of cessation of services, the possible impact on the States of Project RLA/03/901, in order to identify the steps to be taken to ensure the service for all Member States.

2.48 The following working papers were also discussed: WP/03 – Relocation of Transporder and Frequencies (Intelsalt Satellite 14/315); and, IP/01 – Additional node of AIREON REDDIG II.

2.49 Regarding the relocation of transponder and frequencies of REDDIG II VSAT stations, was highlighted the importance of notifying national authorities managing and administering the spectrum on frequency change.

2.50 Finally, regarding IP/01, it was reported that two States expressed their interest in the additional node of AIREON REDDIG II, so the implementation of conclusion RCC23-01 IMPLEMENTATION OF ADDITIONAL NODES OF THE GROUND NETWORK (MPLS) OF REDDIG II was being implemented. The implementation of these nodes will not incur any additional costs for REDDIG or its Member States and will allow States wishing to implement ADS-B satellite a reduction in network usage costs.

ANTIVIRUS SOFTWARE ON NMS SERVERS

2.51 As is being done annually, the process for antivirus renewal was carried out for 23 NMS servers licensed for 1 year. Please note that the renewal must be made from 31 December each year. The NCC Manaus personnel performed the antivirus update during January 2021.

CORRECTIVE MAINTENANCE

2.52 At Uruguay's request, work was carried out in coordination with the staff of Argentina to recover oral communication between Colonia (Uruguay) and Aeroparque Jorge Newbery (Argentina); the circuit was then re-operational.

2.53 Oral communication between Puerto Suarez (Bolivia) and Corumbá (Brazil) operated from ACC Curitiba was also recovered.

2.54 Product of volcanic ash affecting the Guayaquil node (Ecuador), the satellite station was shut down in order to safeguard the integrity of the equipment. When the conditions were met, prior to the restart of the Guayaquil station, maintenance was carried out on the RF components of the same. It should be noted that at all times the services continued to operate by the ground network.

2.55 Failures in the coolers of the Piarco and Georgetown servers were registered. In both cases, node personnel resolved the inconvenience when replacing damaged parts with new spare parts. It should be noted that the nodes themselves purchased these spare parts.

2.56 Due to climatic factors, during the month of November, Lumen's last mile of access to the Maiquetía node was affected. A storm toppled the tower that provides the last radio link to reach the INAC facility. In this sense, a link was changed, locating this radio in the INAC´s IAIM building. These tasks took time and affected the node services.

2.57 During 2020, the MEVA station in Atlanta was affected by weather events such as hurricanes, which had an impact on services between the SAM States and the United States (FAA).

PREVENTIVE MAINTENANCE

2.58 Due to the pandemic, the preventive maintenance programme planned for 2020 could not be met. However, it is the intention to accomplish this task during the year 2021, with special attention in the RF part of each station. Only software and remote access actions were performed.

VISIT TO THE NODES

2.59 Although the intention was to carry out two missions by the ADMINISTRATOR of REDDIG, they were cancelled because of the severity of the pandemic affecting the Region.

2.60 In this regard, Conclusion RTO/8-2 regarding the need for technical visits by the REDDIG Administrator, which was also approved by the Coordination Committee of Project RLA/03/901, is remained.

ANALYSIS OF THE REQUIREMENTS FOR IMPROVING THE PERFORMANCE OF THE REDDIG II

2.61 During 2020, issues related to security, the inclusion of additional nodes within and outside the Region, the inclusion of new services, the up-to-date of ground network bandwidths, interconnections between Regions, etc., were discussed; as well as aspects related to a future network, the useful life of the equipment that makes up the current REDDIG and possible actions.

2.62 In this regard, work has been on a platform based on the ground network, taking into account known factors (cost/benefit, delay, jitter, throughput, latency, error rate, factor interaction, etc.). This has led to a reconsider of whether the satellite network should continue to be considered as the main means. This is why it has been tested in some cases, that all services are transported by the ground network as the main means, obtaining very positive results.

2.63 It is important to mention that it is pending to implement a work schedule involving leaving a single satellite station chain running in order to preserve outdoor and indoor equipment and to lengthen the operation of the stations. During 2020 it could not be carried out because there were pending upgrades of the terrestrial network, migration of transponder from the satellite supplier, uncertainty and different situations raised from the pandemic. These actions must be performed during 2021.

2.64 States have been reiterated on the concerned about the antenna corrosion. Issue that will be recurring as this affects and will affect the performance of the stations.

SUPPORT FOR EXTRA-REGIONAL INTERCONNECTION COORDINATIONS

2.65 The support provided to Trinidad & Tobago, Venezuela, Peru, Brazil, and the United States (FAA) to be able to carry out P1/AMHS interconnections is highlighted.

2.66 The Regional Office has an active participation in the processes of interconnection of AMHS systems in the Region, as well as in different services that are exchanged between States. It was also reported that it collaborates in different situations that arise in each State in relation to services and systems external to REDDIG.

2.67 Collaboration is usually provided with all available tools with the objective to provide the necessary support and action to achieve interconnections, exchanges, transport of different services and information. Also, with actions that generate information analysis, traffic capture, etc., that allow to find solutions to difficulties between the services exchanged, as well as coordination and tasks in conjunction with the MEVA Administrator, etc.

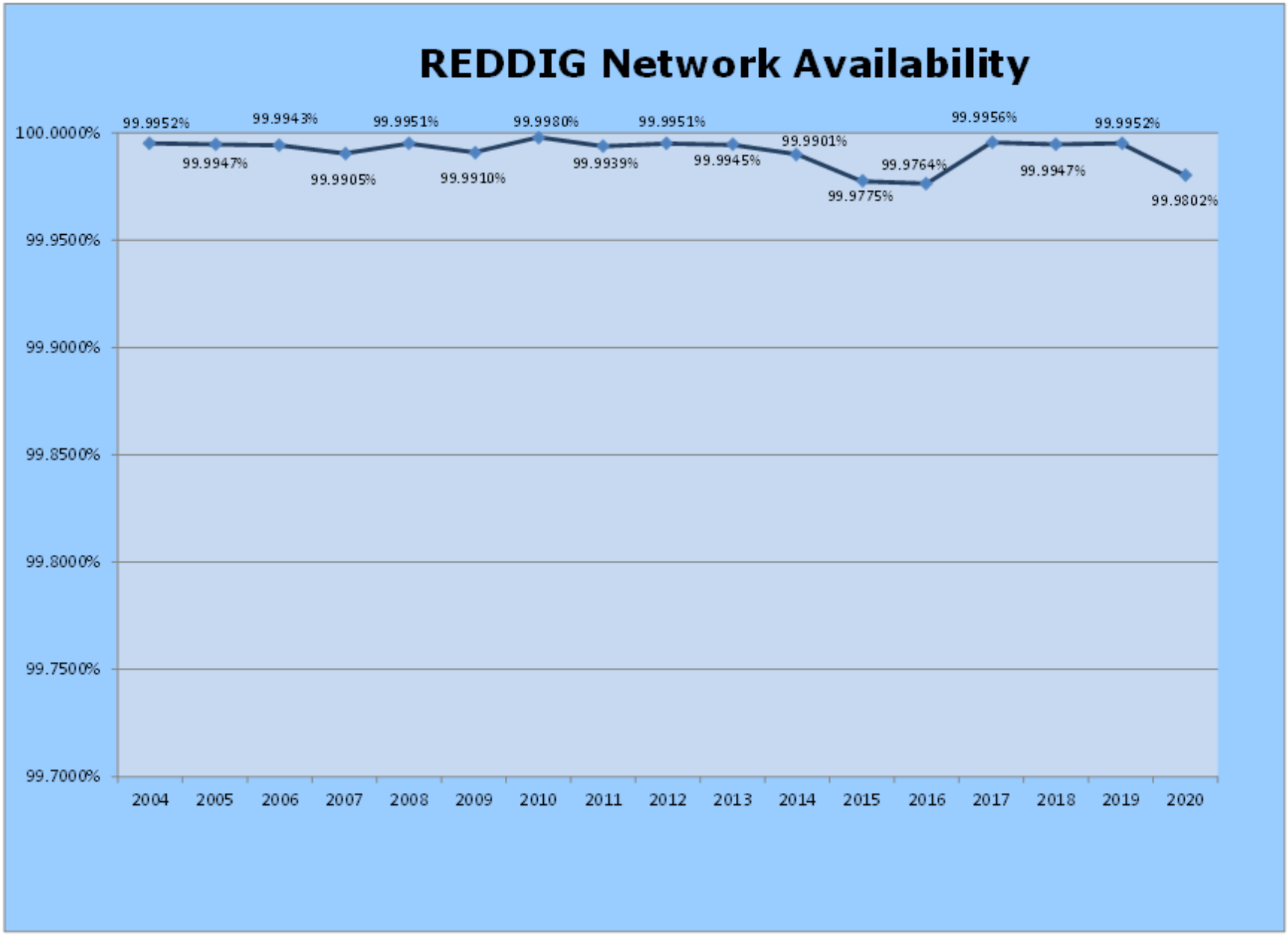
2.68 It should be noted that collaboration with MEVA has been provided in different matters. For example, working on interference affecting the exchange of surveillance data between COCESNA and Jamaica.

2.69 Coordinated actions were also carried out with INTELSAT in relation to interference, measurements and antenna re-aiming at the time of transponder migration (in particular with the Asunción and Brasilia nodes). In addition to being consulted by this company about interferences at different airports in the Region, but outside REDDIG.

3 Suggested actions

3.1 The Coordination Committee is invited to:

a) take note of the information provided herein;
b) review the activities carried out since the RCC/24 and RCC/25 to dated, as presented in section 2 and in the appendixes to this working paper; and
c) discuss the issues presented herein, as well as any other topic it might deem appropriate.


REDDIG Network Availability
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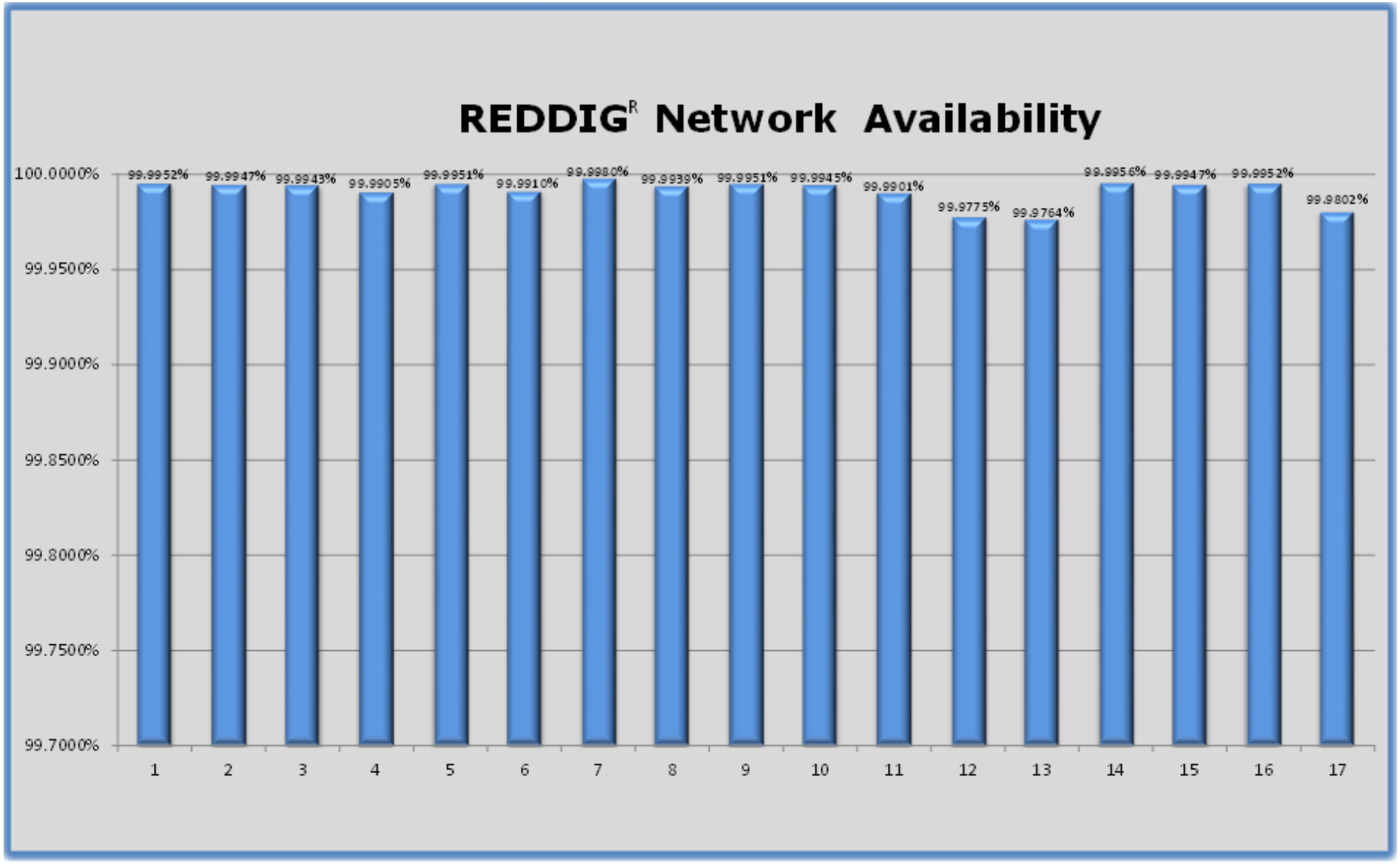
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APÉNDICE B / APPENDIX B
MOVIMIENTOS LOGÍSTICOS / LOGISTIC MOVEMENTS

REGISTRO DE SERVICIOS - ADMINISTRACIÓN Y LOGÍSTICA DE EQUIPOS Y PARTES						
EVENTO	**NODO**	**EQUIPO/PARTE**	**DOC EMBARQUE**	**ENVIO DE**	**HASTA**	**GASTOS ENVIO US$**
OR-20001	**SVMI**	**IDU 1070**	**SAMRO-83**	Lima RO	Maiquetía, Venezuela	p/Venezuela (REDDIG)
OR-20002	**SBMN**	**ODU 80**	**SAMRO-84**	Lima RO	CISCEA, Brasil	p/Brasil (REDDIG)
OR-20003	**SBRF**	**ODU 80**	**SARO**	Lima RO	CISCEA, Brasil	p/Brasil (REDDIG)

INEO-ES Price List for Procurement of Satelitte Equipment Spare Parts

Description	Qty	Unit Price US$	Total Price US$
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	10	124,00	**1 240,00**
Hot-Plug HP Midline HDD 500GB 7.2k SATA	2	405,00	**810,00**
Tx 1+1 switching system	1	8 707,00	**8 707,00**
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/LRM-600 Type coaxial cable)	4	67,00	**268,00**

APÉNDICE C / APPENDIX C

ALMACEN OACI / ICAO STORE

REPUESTOS REDDIG II – 2020 / REDDIG II SPARE PARTS - 2020

	Desc:	Repuestos Reddig					
Ubicación	Caja#	Item	Descripcion	Proveedor	Modelo	Cantidad	Numero de Serie
Lista A			REPUESTOS REDDIG II ENVIADOS DESDE BRASIL				
			EQUIPOS Y PIEZAS DE REPUESTO EN GENERAL				
C2	2	2.1	ROUTER Cisco 2901	CISCO	2901	1	FCZ1719C1BR
		2.2	Two port Async-Sync Serial WAN interface card	CISCO	HWIC	1	FOC17173XNG
		2.3	Two port Async-Sync Serial WAN interface card	CISCO	HWIC	1	FOC17427CCS
		2.4	two port voice interface card FXS	CISCO	VIC3	1	FOC16450PGJ
C2	3	3.1	ROUTER Cisco 2911	CISCO	2911	1	FCZ175060LX
		3.2	24 PORT RJ45 PATCH PANEL	CISCO		1	-
		3.3	01 TARJETA EVM-HD TELEFONICO	CISCO		1	-
		3.4	Cable serial CISCO V.24 DTE DB25	CISCO		1	-
		3.5	Cable serial CISCO V.24 DCE DB25	CISCO		1	-
		3.6	Cable telefonico RJ11 cross over	CISCO		1	-
		3.7	High density 8 port analog and digital extension module	CISCO		1	FOC180475BH
C2	4	4.1	ROUTER Cisco 2901	CISCO		1	FCZ175092L8
		4.2	Two port Async-Sync Serial WAN interface card	CISCO		1	FOC17427CQP
		4.3	two port voice interface card FXS	CISCO		1	FOC17224X7C
		4.4	Cable serial CISCO V.24 DCE DB25	CISCO		1	-
A2	5	5.1	Rx 1+1	Terrasat		1	TE6010431
		5.2	Handheld Terminal with 2 m cable	Terrasat		1	439318
		5.3	Accesorios para RX 1+1	Terrasat		1	-
		5.4	Cables de energia	Terrasat		2	-
		5.5	Cable Coaxial de RF con conectores tipo N 6m.	Terrasat		1	-
		5.6	Cable de Gestion para LNB	Terrasat		1	-
		5.7	Cable Coaxial de RF con conectores tipo N 30 cm.	Terrasat		2	-
A3	6	6.1	Wave Guide Switch for LNB	Logus		1	0244
		6.2	LNB Banda C			1	2386
		6.3	LNB Banda C			1	2381
B2	7	7.1	Switch Netgear de 26 Puertos	Netgear		1	39223C5U0036F
		7.2	Cable USB			1	-
B2	8	8.1	Switch Netgear de 26 Puertos	Netgear		1	39223C5U00378

APÉNDICE C / APPENDIX C

ALMACEN OACI / ICAO STORE

REPUESTOS REDDIG II – 2020 / REDDIG II SPARE PARTS - 2020

D1	**10**	10.1	Manuales de Curso de Rio de Janeiro				-
D2	**11**	11.1	Documentos Oficiales REDDIG II				-
D1	**12**	12.1	Manuales REDIG II				-
D1	**13**	13.1	Documentos Oficiales REDDIG II				-
			EQUIPOS Y PIEZAS DE REPUESTO EN GENERAL				
B3	**14**	14.1	Tarjeta Serial MOXA de 8 Puertos RS-232 PCI	MOXA		1	TADBB1062386
B3	**15**	15.1	Disco Duro Externo IOMEGA NAS 2 Tb	LENOVO		1	V9AP370005
		15.2	Fuente para Disco Duro	LENOVO		1	-
		15.3	Manuales	LENOVO		1	-
B3	**16**	16.1	UPS Eaton Eclipse ECO 1200 VA	EATON		1	G030D43420
B3	**16**	16.1	UPS Eaton Eclipse ECO 1200 VA	EATON		1	G030D43420
B3	**17**	17.1	Cable Multipuerto Moxa 8 puertos	MOXA		1	-
		17.2	Cable Cisco V.24 DTE	CISCO		5	-
		17.3	Cable Cisco V.24 DCE	CISCO		11	-
		17.4	Cable DB25 Male-Female			6	-
		17.5	Cable Patch Cord ethernet RJ45			6	-
C3	**18**	18.01	Cable Multiple Cisco 8 puertos ethernet con adaptadores a DB25	CISCO		2	-
		18.02	Two port Async-Sync Serial WAN interface card	CISCO		1	FOC17173XSA
		18.03	Four port Async-Sync Serial HWIC	CISCO		1	FOC17056CG2
		18.04	Four port Async-Sync Serial HWIC	CISCO		1	FOC17405CTK
		18.05	Eight port Async interface card	CISCO		1	FOC174673WU
		18.06	Two Port Voice Interface Card FXS.	CISCO		1	FOC1747821Q
		18.07	Two Port Voice Interface Card FXS.	CISCO		1	FOC18073ZCY
		18.08	Two Port Voice Interface Card FXS.	CISCO		1	FOC1747823M
		18.09	Two Port Voice Interface Card FXS.	CISCO		1	FOC18158WJ8
		18.10	Two Port Voice Interface Card FXS.	CISCO		1	FOC18158WD0
		18.11	Two Port Voice Interface Card FXS.	CISCO		1	FOC174781UF
		18.12	Two Port Voice Interface Card FXS.	CISCO		1	FOC18073ZJL
		18.13	Two Port Voice Interface Card FXS.	CISCO		1	FOC17461BL9
		18.14	Two Port Voice Interface Card FXS.	CISCO		1	FOC18158WGP
		18.15	Two Port Voice Interface Card FXS.	CISCO		1	FOC18158WH7
		18.16	Four Port Voice Interface Card FXS	CISCO		1	FOC1747523F

ALMACEN OACI / ICAO STORE

REPUESTOS REDDIG II – 2020 / REDDIG II SPARE PARTS - 2020

		18.17	Four Port Voice Interface Card FXS	CISCO		1	FOC174752RT
		18.18	Four Port Voice Interface Card FXS	CISCO		1	FOC174751RP
		18.19	Four Port Voice Interface Card FXO	CISCO		1	FOC1746833R
		18.20	One Port 2nd Gen Multiflex trunks Voice Wan Interface Card E1/T1	CISCO		1	FOC17451Q66
		18.21	High Density voice/fax external Module	CISCO		1	FOC17443E08
		18.22	Two Port 2nd Gen Multiflex trunks Voice Wan Interface Card E1/T1	CISCO		1	FOC17479P39
		18.23	Eight port Async-Sync interface card	CISCO		1	FOC17446GYD
C3	**19**	19.1	Module Adapter for SM Slot on CI	CISCO		1	FOC17516V0F
C3	**20**	20.1	Module Adapter for SM Slot on CI	CISCO		1	FOC17516UU5
B1	**21**	21.1	Impresora Laser Jet Pro 400 M401dn	Hewlet Packard		1	VNH4222944
		21.2	Cables de Energia			1	-
A3	**22**	22.1	8 Port Device Server 10/100 eth	MOXA		1	TADAE101113
B1	**23**	23.1	RSS 16 SLOT 4U Chasis	DATAPROBE		1	115010100300024
		23.2	Power Module	DATAPROBE		1	193008400000128
		23.3	Network Control Card	DATAPROBE		1	134006500400093
		23.4	Dual 8 wire Module Jack A/B card	DATAPROBE		1	111020200200892
		23.5	Dual 8 wire Module Jack A/B card	DATAPROBE		1	111020200200893
		23.6	D25 A/B Card	DATAPROBE		1	111020000100593
		23.7	D25 A/B Card	DATAPROBE		1	111020000100594
		23.8	D25 A/B Card	DATAPROBE		1	111020000100643
		23.9	D25 A/B Card	DATAPROBE		1	111020000100667
B1	**24**	24.1	RSS 16 SLOT 4U Chasis	DATAPROBE		1	115010100300011
		24.2	Power Module	DATAPROBE		1	193008400000115
		24.3	Network Control Card	DATAPROBE		1	134006500400080
		24.4	Dual 8 wire Module Jack A/B card	DATAPROBE		1	11020200889
		24.5	Dual 8 wire Module Jack A/B card	DATAPROBE		1	11020200890
		24.6	Dual 8 wire Module Jack A/B card	DATAPROBE		1	11020200891
		24.7	D25 A/B Card	DATAPROBE		1	111020000100629
		24.8	D25 A/B Card	DATAPROBE		1	111020000100630

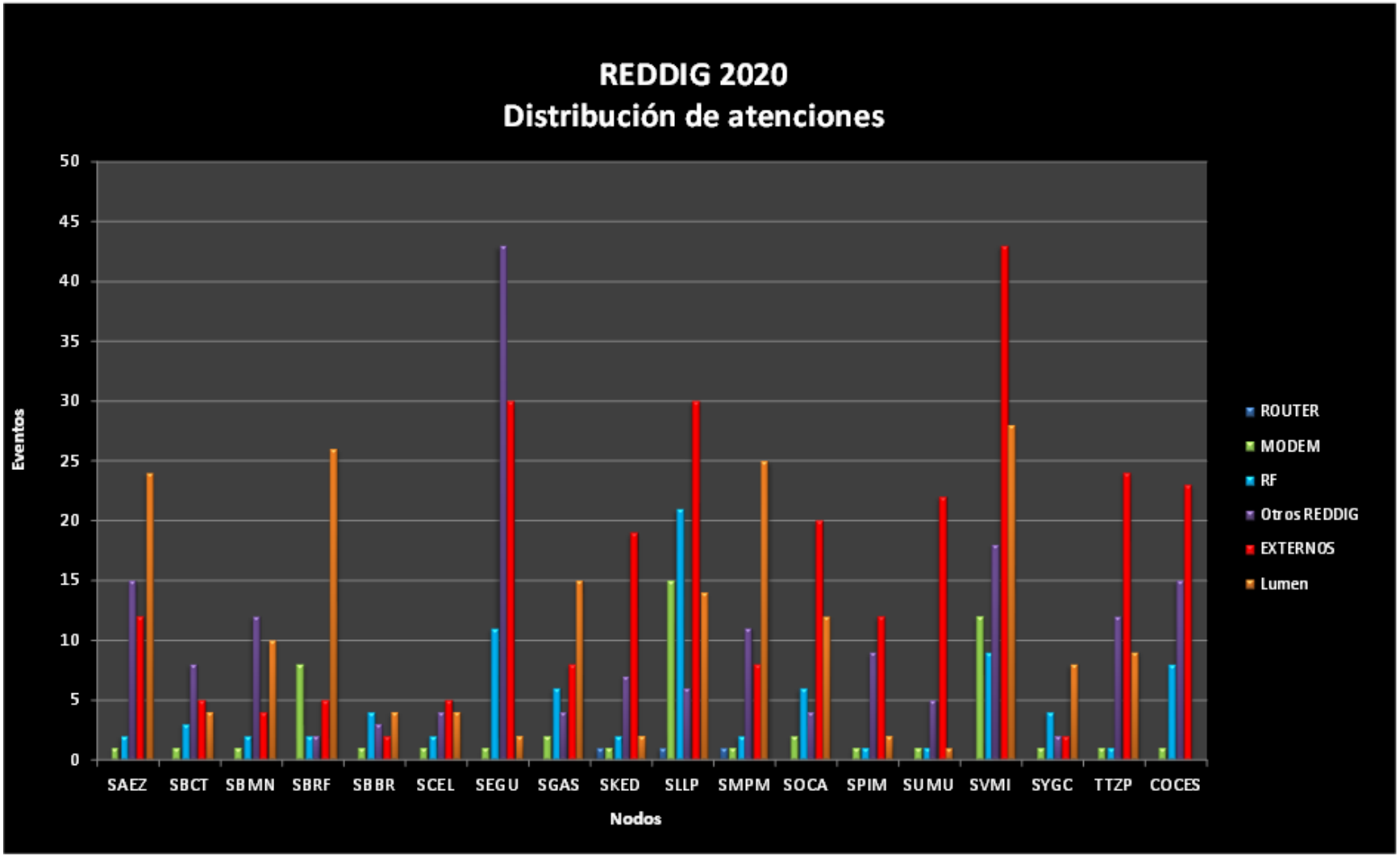
APÉNDICE C / APPENDIX C

ALMACEN OACI / ICAO STORE

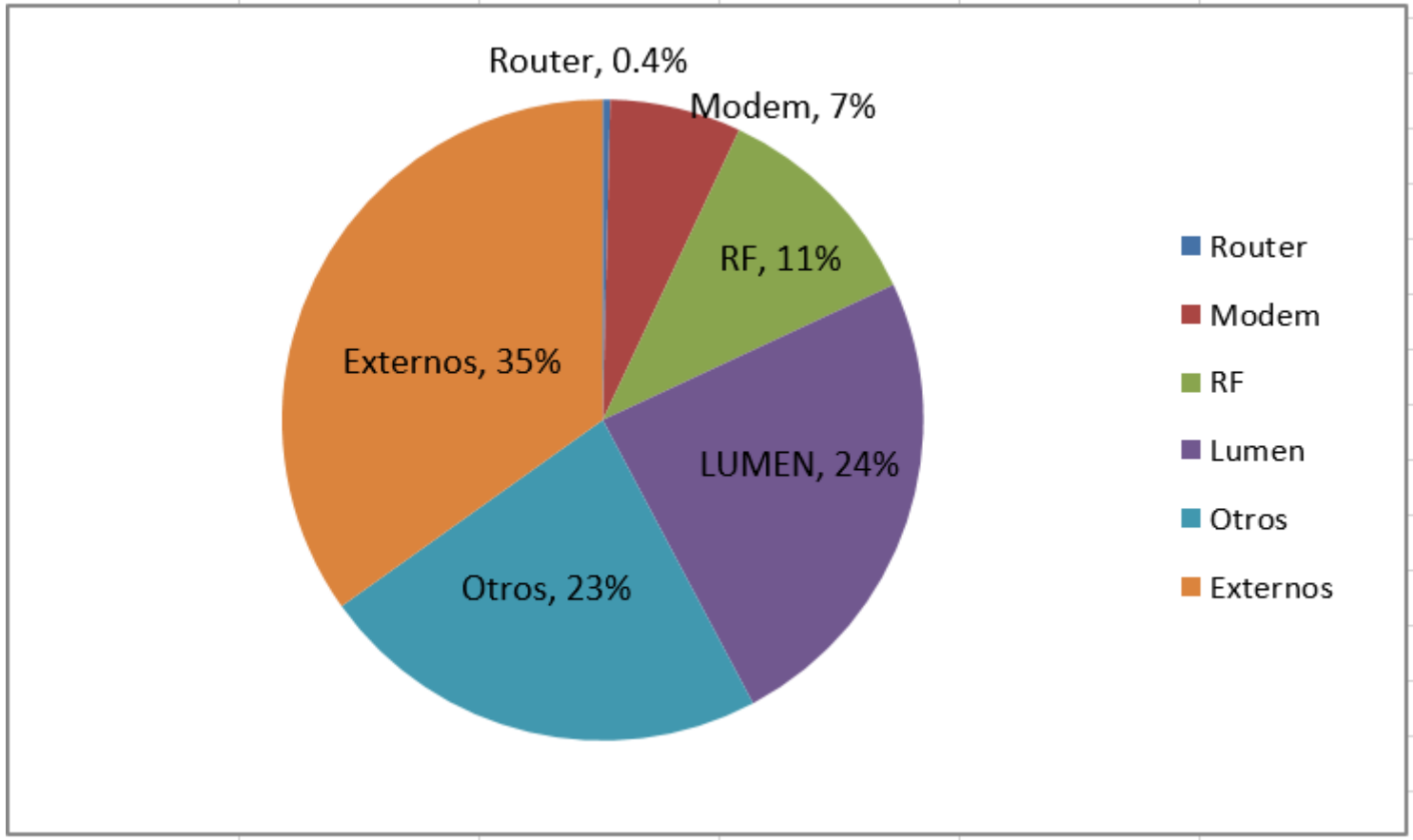
REPUESTOS REDDIG II – 2020 / REDDIG II SPARE PARTS - 2020

C3	25	25.1	High density 8 port analog and digital extension module	CISCO		1	FOC174049WM
		25.2	High density 8 port analog and digital extension module	CISCO		1	FOC174049YH
		25.3	Cable de consola de Cisco			2	-
		25.4	KVM Extender			1	F3D46058D140097
		25.5	Convertidor USB - Serial			1	-
		25.6	Telefono IP DEPAEPE	DEPAEPE		1	PE02001120001826
		25.7	Mouse Optico USB Negro			1	-
		25.8	Regleta electrica con 05 tomas			2	-
		25.9	Teclado Estandar K120	Logitech		1	-
B2	26	26.1	Filtro RF	NORSAT		1	C001128132
		26.2	Filtro RF	NORSAT		1	C001128140
		26.3	Barras de Anclaje de acero			3	-
		26.4	Bloques de anclaje de plastico negro			6	-
		26.5	Tornillos de sujecion de acero			20	-
		26.6	Blank panel para RSS			3	-
		26.7	Regleta electrica con 05 tomas			2	-
		26.8	Adaptadores Cambia genero DB25			15	-
C1	27	27.1	Pantalla LCD 27"	SAMSUNG		1	0293H4MDB00709
C1	28	28.1	HP ProLiant DL160 Gen8 Base - Server	Hewlet Packard		1	CZJ34500JZ
C2	30	30.1	Router Cisco 2901	CISCO	2901	1	FCZ175092KM
C2	31	31.1	Router Cisco 2901	CISCO	2901	1	FCZ170391DX
C2	32	32.1	Router Cisco 2901	CISCO	2901	1	FCZ170592LK
A3	61	61.1	Firewall NETGEAR Prosafe VPN Dual Wan Gigabit	Netgear		1	2CH23A3W501B3

APÉNDICE D / APPENDIX D
ATENCIONES Y AVERÍAS / ATTENTIONS AND FAULTS



APÉNDICE D / APPENDIX D
ATENCIONES Y AVERÍAS / ATTENTIONS AND FAULTS



*se observa que el 58% de las atenciones obedecieron a "Otros" y "Externos"

REDDIG II FOCAL POINTS / PUNTOS FOCALES REDDIG II

STATE / ESTADO	Name / Nombre	Position/ Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
ARG	Moira Lidia Callegare, ANAC	Jefe Departamento Proyectos – DNSA	mcallegare@anac.gov.ar	(5411) 594-13097	Edificio ANAC Central Paseo Colón 1452, Ciudad Autónoma de Buenos Aires, CP 1063
	Sergio Alberto Vallone, ANAC	Inspector de Navegación Aérea, Depto. Regional Noroeste de Inspecciones de la Dirección Nacional de Inspecciones de Navegación Aérea	svallone@anac.gov.ar	(54351) 475-6414	Dirección Regional Noroeste Camino Pajas Blancas Km. 8.5, CP 5000, Córdoba Capital
	Fabian Romero, EANA	Gerente de Infraestructura y Tecnología EANA	fromero@eana.com.ar	(5411) 4320-2384 +54 911 5139-6316	EANA S.E. Av. Rivadavia 578, Piso 5 Buenos Aires, Argentina
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	Bruno Pacheco Santos Azevedo Costa	Asesor de Comunicaciones DECEA	pachecobpsac@decea.gov.br	(55 21) 21016684	Avenida General Justo, 160 Rio de Janeiro, Brasil
BOL	Javier Osvaldo Campos Gonzáles, DGAC	Inspector CNS	jcampos@dgac.gob.bo	(5912) 7152-0131	
	Hernando Lara, AASANA	Jefe Unidad Nacional CNS AASANA	nanos_24@hotmail.com	(5912) 212-7959	Aeropuerto Internacional El Alto, Bloque Técnico AASANA

STATE / ESTADO	Name / Nombre	Position/ Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
	Remigio Blanco, AASANA	Responsable de Telecomunicaciones AASANA	rblanco@aasana.bo	(5912) 237-0340	Aeropuerto Internacional El Alto, Bloque Técnico AASANA
CHI	Christian Vergara Leyton, DGAC	Supervisor de Mantenimiento Técnico Centro de Control de Santiago	cvergara@dgac.gob.cl	(562) 836-4005; (562) 836-4011; (562) 644-8345	Avenida San Pablo 8411, Comuna de Pudahuel, Santiago, Chile
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	Robinson Quintero	Grupo de Sistemas de Comunicaciones	robinson.quintero@aerocivil.gov.co	(571) 296-2241	Aeropuerto Internacional El Dorado, Av. El Dorado N° 112-09 Edif. C.N.A. (Centro Nacional de Aeronavegación)
ECU	Ing Nancy Tapia Yagual	Analista CNS para la Navegación Aérea 1	ntapia@aviacioncivil.gob.ec nktapia@hotmail.com	593-2 2947400 ext. 2197 0982347392	Av. De las Américas, Edif. Servicio para la Navegación Aérea, Guayaquil
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STATE / ESTADO	Name / Nombre	Position/ Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
GUY	Mortimer Salisbury, Guyana Civil Aviation Authority	Supervisor - AN & T	mbsalisbury2000@yahoo.com	(592) 261-2569	Control Tower complex, Cheddi Jagan International Airport, Timehri, East Bank Demerara, Guyana
	Sewchan Hemchan, Guyana Civil Aviation Authority	Electrical Engineer	sewchan_hemchan@yahoo.com	(592) 261-2569	Control Tower complex, Cheddi Jagan International Airport, Timehri, East Bank Demerara, Guyana
PAR	Víctor Morán Maldonado, DINAC	Gerente de Telecomunicaciones	moranchu@gmail.com	(595 21) 758 5208	Centro de Control Unificado, Gral. Artigas y Fernando de Mompox, Mariano Roque Alonso, Paraguay
	Ronald Benítez, DINAC	Jefe Departamento de Comunicaciones	ronaldbenitez@gmail.com	(59521) 758-5201	
	Aldo Pereira Alcaraz, DINAC	TécnicoComunicaciones	apereira@dinacia.gov.py aldopereira26@gmail.com	(595-21) 758-5201	
PER	Luis Silva Gárate, CORPAC	Jefe del Equipo encargado de la Operac. y Mantto. del Nodo REDDIG-Lima	lsilva@corpac.gob.pe	(511) 515-3015; (511) 414-1514	Aeropuerto Internacional Jorge Chávez, Callao, Perú
SUR	Cicilson Jurgen	Acting Chief of CADSUR CNS Division	jurmaja@hotmail.com and cns@cadsur.sr	(597) 531288; (597) 498898; (597) 325123, Mobile: (597) 8792810	J. A. Pengel International Airport, Zanderij, district Para, Zorg en Hoop Airport, Paramaribo

STATE / ESTADO	Name / Nombre	Position/ Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
	Kofi Orlando	CNS Supervisor	oomken80@gmail.com	(597) 531288; (597) 498898; (597) 325123, Mobile: (597) 8531923	J. A. Pengel International Airport, Zanderij, district Para, Zorg en Hoop Airport, Paramaribo
TRI	Rohan Garib, Civil Aviation Authority	Executive Manager Air Navigation Services	rgarib@caa.gov.tt	(1-868) 669-4806 (1-868) 669-4706,	Trinidad and Tobago Civil Aviation Authority Complex, Caroni North Bank Road, Piarco
	Veronica Ramdath, Civil Aviation Authority	Manager Telecommunications and Electronics	vramdath@caa.gov.tt vramdath@gmail.com		
URU	Miguel Vera, DINACIA	Técnico de la División Comunicaciones	miguelvera@adinet.com.uy	(5982) 6040408, Ext. 4520	Aeropuerto Internacional de Carrasco Av. Wilson Ferreira Aldunate 253 Paso Carrasco, Canelones
	Ricardo Clavijo, DINACIA	Director de Electrónica	rclavijo@dinacia.gub.uy		
VEN	Jarumy Castillo, INAC, INAC	Coordinadora CNS	ja.castillo@inac.gob.ve	(58212) 355-2143; (58424) 354-9924	Edificio ATC, 2do piso, Dpto. de Comunicaciones, Maiquetía, Edo. Vargas, Venezuela

DISPONIBILIDAD DE LUMEN DURANTE EL AÑO 2020 / AVAILABILITY OF CENTURYLINK DURING THE YEAR 2020

	Jan-20		Feb-20		Mar-20		Apr-20		May-20		Jun-20		Jul-20		Aug-20		Sep-20		Oct-20		Nov-20		Dec-20		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	99.689%	0.09	92.489%	59.85	100.000%		100.000%		100.000%		99.754%		100.000%		99.656%	2.03	97.639%	16.28	100.000%		100.000%		100.000%		78.25
SBBR	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		99.802%		100.000%		100.000%		100.000%		0
SBCT	100.000%		100.000%		100.000%		99.938%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		99.765%		100.000%		0
SBMN	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		99.996%		100.000%		100.000%		96.467%	45.5	100.000%		100.000%		45.5
SBRF	88.771%	$ 114.75	84.691%	$ 157.59	91.135%	$ 89.93	92.984%	70.52	97.903%	18.9	94.410%	55.54	99.677%	0.24	99.968%		94.252%	57.12	97.951%	18.36	100.000%		100.000%		$582.95
SCEL	100.000%		100.000%		99.040%	$ 5.48	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		5.48
SEGU	99.734%		100.000%		99.401%	$ 2.48	99.677%	0.19	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		$2.67
SGAS	96.891%	50.56	99.382%	$ 5.72	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		99.879%		96.430%	58.86	99.230%	8.37	$123.51
SKED	100.000%		100.000%		100.000%		99.670%	0.31	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		0.31
SLLP	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		98.903%	26.92	99.500%	2.7	100.000%		98.561%	30.753	100.000%		60.373
SMPM	99.712%		92.487%	$ 418.35	100.000%		100.000%		100.000%		94.729%	288.32	100.000%		99.186%	29.81	99.843%		99.923%		100.000%		99.845%		$736.48
SOCA	100.000%		100.000%		99.979%		99.832%		100.000%		100.000%		99.480%	11.88	99.710%		99.513%	4.70	99.966%		99.363%	18.2	99.786%		34.78
SPIM	99.900%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		99.901%		100.000%		100.000%		100.000%		0
SUMU	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		99.981%		100.000%		100.000%		100.000%		100.000%		100.000%		0
SVMI	97.365%	$ 51.14	99.848%		98.918%	$ 17.13	99.059%	14.04	95.241%	97.65	100.000%		97.209%	54.55	100.000%		98.077%	33.35	63.819%	785.7	93.708%	131.225	100.000%		$1,184.79
SYGC	100.000%		100.000%		100.000%		100.000%		100.000%		100.000%		97.634%	79.54	100.000%		100.000%		100.000%		100.000%		99.519%	9.5	89.04
TTZP	100.000%		100.000%		100.000%		99.995%		100.000%		100.000%		97.441%	37.06	100.000%		100.000%		100.000%		100.000%		100.000%		37.06
		216.54		641.51		115.02		85.06		116.55		343.86		183.27		58.76		114.15		849.56		239.038		17.87	2981.188
Note:	SLA-Availability for all nodes: 99.70%																							USD	2981.19
	Except for SBMN and TTZP : 99.50%																								

DISPONIBILIDAD DE LUMEN DURANTE EL AÑO 2020 / AVAILABILITY OF CENTURYLINK DURING THE YEAR 2020