INTERNATIONAL CIVIL AVIATION ORGANIZATION

RLA/03/901

THIRD MEETING ON THE TECHNICAL-OPERATIONAL IMPLEMENTAITON OF THE NEW REDDIG II DIGITAL NETWORK (RTO/3), AND REDDIG II PREPARATORY COURSE

FINAL REPORT

Bogota, Colombia, 28 July to 1 August 2014

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HISTORY

ii-1 PLACE AND DURATION OF THE MEETING

The Third Meeting on the Technical-Operational Implementation of the New REDDIG II Digital Network (RTO/3),was held in *Salón de Audiovisuales (2nd floor)* of the *Centro de Gestión de Mercados Logística y Tecnologías de la Información (SENA)* located in Bogota , Colombia, from 28 to 29 July 2014.

ii-2 OPENING

Mr. Alfonso Lozano Ariza, Deputy General Director of the *Unidad Administrativa Especial de Aviación Civil de Colombia (UAEAC)*, welcomed the participants highlighting the topics to be debated and wished success in their deliberations. Mr. Jaime Garcia di - Motoli, Deputy Director of the Market Management, Logistics and TICs of the National Apprenticeship Service – SENA, proceeded to greet the participants and made them available the SENA facilities for the scheduled meeting, as well as for others that could be organized in the future. Finally, Mr. Onofrio Smarrelli, CNS Officer of the ICAO South American Regional Office, thanked the UAEAC on behalf of the Regional Director of the ICAO South American Office for the great support given in the completion of the RTO/3 and in the REDDIG II Preparatory Course. Following, Mr Alfonso Lozano Ariza proceeded to inaugurate the meeting. The opening of this event was held in conjunction with the REDDIG II Preparatory Course (July 29 to August 1, 2014).

ii-3 AGENDA

Agenda Item 1:	Follow-up to REDDIG II implementation activities carried out to date
Agenda Item 2:	Review of activities conducted by REDDIG member States regarding initial preparations for REDDIG II implementation
Agenda Item 3:	Analysis of further activities required to be undertaken by REDDIG member States for REDDIG II implementation
Agenda Item 4:	Other business

ii-4 WORKING LANGUAGES

The working languages of the meeting were Spanish and English. Documentation was submiited in both languages.

ii-5 PARTICIPANTS AND ORGANIZATION

The Meeting counted with the assistance of 9 member States (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Trinidad and Tobago and Uruguay), making a total of 19 participants, including ICAO Regional Officers.

Mr. Onofrio Smarrelli, Communications, Navigation and Surveillance (CNS) Regional Officer, acted as Secretary, assisted by Mr. Luis Alejos, REDDIG Administrator.

ii-6 **LIST OF CONCLUSIONS**

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INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Regional Office

RLA/03/901 REDDIG
Third Meeting on the Technical/Operational Implementation of the New REDDIG II (RTO/3) and REDDIG II Preparatory Course
(Bogota, Colombia, 28 July to 1 August 2014)

LIST OF PARTICIPANTS

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1. Adrián Marcelo Bravo
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3. Pedro César Britez

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4. Iver Mijael Vargas Ponce de Leon

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Agenda Item 1: Follow up on the activities related with REDDIG II implementation carried out to date

1.1 The Meeting analyzed the following REDDIG II implementation activities:

- REDDIG II focal points
- REDDIG II Course in factory
- REDDIG II Factory Acceptance Tests
- Others REDDIG II considerations

REDDIG II Focal Points

1.2 The Meeting updated the focal points list, which is presented as **Appendix A** to this agenda item. Again the Meeting considered the importance that the member States of the REDDIG II implementation project (RLA/03/901) notify on any change in it in order to maintain it updated.

REDDIG II Course in factory

1.3 The Meeting took note that the course in Factory, as it was planned, was carried out in Vélizy, France, from 21 April to 9 May and was attended by three delegates from Brazil that work at the Manaus NCC, three delegates from Argentina that work at the alternate Ezeiza NCC, and the REDDIG Administrator. The Course program is attached as **Appendix B** to this agenda item. The course material is available in the REDDIG II website http://www1.lima.icao.int/reddig/.

1.4 The Meeting noted that the course was developed in a normal way, fulfilling all the topics according to the Course in Factory program. The topics were theoretical with practical exercises and of laboratory when applicable.

1.5 The Meeting was informed that as a result of the course carried out in factory, it was recommended that the theoretical/practical course to be given in Rio de Janeiro from 11 to 22 August 2014 and from 25 August to 5 September, INEO extend the hours of dictation of the topic referred to NMS of the stations, specifically to the software WhatsUp Gold.

1.6 In this regard, the Meeting also considered the Eighteenth Meeting of the Coordination Committee of the REDDIG to be held in Lima in March 2015 analyze the possibility to include inside the training program of project RLA/03/901, a specialized course on the management and operation of the WhatsUp Gold software addressed to technicians that manage the REDDIG nodes, at the beginning of the second semester of 2015. In this sense, the Meeting agreed to adopt the following conclusion:

Conclusion RTO/3-1 Proposal to conduct a course on the WhatsUp Gold application

That the Eighteenth Meeting of the Coordination Committee of Project RLA/03/901 (RCC/18) to be carried out at the end of the first trimester of 2015 in Lima, Peru, consider the possibility to develop, as part of the training program, a complete course on the application of WhatsUp Gold at the end of the first semester of 2015

REDIG II Factory acceptance tests (FAT)

1.7 The Meeting noted that the REDDIG II factory acceptance tests were performed from 12 to 16 May 2014 in Vélizy, Paris in the INEO premises where representative members of Project

RLA/03/901 of Argentina, Brazil, Paraguay, and Peru and of the REDDIG II project Management, participated.

1.8 The Meeting was informed that during the factory acceptance tests, the following activities were carried out:

- Checking of wiring installations and equipment in each of the REDDIG II racks
- Verification of the models and serials of all the REDDIG II equipments.
- Testing of communication links among the sites in a simulated environment.
- Testing in the out-door equipment
- Testing in the in-door equipment
- Testing in the REDDIG II monitoring system

Results of the FAT tests

1.9 The Meeting took note of the results of the FAT tests, highlighting the following observations and actions:

Verification of equipment diagrams and racks wiring

1.10 The diagrams that describe the equipment content and racks wiring that are part of the REDDIG II nodes show corrections made by hand, not being available during the FAT, the final installation diagrams, lacking the diagrams of the REDDIG II node of Maiquetia, Venezuela.

1.11 The diagrams are not identified according to their contents and they have also to be identified in the lower right chart of the diagram page.

1.12 The view of cabinets is not represented in full in its complete form , lacking a side view. Also, in the cabinet side views, all trays or ladders where cables pass, must be represented and the UPS is not drawn in most of the cabinet diagrams (front view)

1.13 In the back view of the cabinets diagram in some of the localities, the breakers graphic representation does not match with what is installed in the cabinets. In the sheet where the list of connectors and installed equipment in the cabinet is shown, it is indicated that there is a blank panel of 5U, but what is installed in all the cabinets, is a blank panel of 3U.

1.14 On the same sheet it is indicated that there are 22 connectors RJ45 and 9 DB 25, but it was noted that there is a small number of connectors different to the indicated in all the cabinets; likewise, the connectors DB 25 are M/M, but the installed are M/H; it is not included in the listing sheet the KVM Exender equipment.

1.15 The Meeting took note that all the corrections made in the diagrams are presented in detail in the website of Project RLA/03/901 **www1.lima.icao.int/reddig**. The INEO & Level 3 Consortium should include all these corrections in the final diagrams that shall be sent by the consortium to each one of the REDDIG II nodes together with the equipment to be installed.

1.16 In this regard the Meeting considered that the REDDIG II focal points once they receive the document with the new diagrams, must verify that the INEO & Level 3 Consortium have completed and made to paragraphs 1.10 to 1.15 all the changes indicated to this agenda item. In case this has not

been made, they will be considered as observations in the acceptance process of the equipment in the site (PSAT).

1.17 Likewise, the Meeting was informed that the group verified the serial number of all the equipment installed in each one of the racks forming the REDDIG II nodes, as well as of some of the monitor serials, printers and amplifiers that were inside their boxes, because they were not installed in the configuration mounted for the FAT. In **Appendix C** of this agenda item it is shown the list of all the equipment serials land the observations as a result of the FAT.

1.18 In this regard, the Meeting took into consideration that the REDDIG II focal points, once they receive the final list with all the equipment serials, they must verify if all the changes have been made and in case they have not, they shall be considered as observations to the provisional acceptance process of the equipment in the site (PSAT).

Results of the outdoor indoor equipment tests and NMS system

1.19 The Meeting was informed that the following tests could not be made in view that the necessary elements were not provided by the contractor for its performance:

- All the radar tests
- Teleconference tests were made with analog telephones and could only be tested with the Manaus server (1111). For that reason, we believe that even if the teleconference is running, the total test as required was not fulfilled in view that it should have been made with IP telephones.
- BER test in AFTN
- SAT LOOP BER test
- Tests in the REDUNDANCY TEST section for the radar and the AFTN
- Tests (user access control) of local user of Ezeiza Fileover Server, and the user server of Manaus Central Server

1.20 The following tests did not work. See references in **Appendix D** of this agenda item for details:

- Test 7.9 (pages 92 and 93)
- Database test (Section 7.10)
- Test CONNECTION THROUGH SERIAL PORT in the Failover server (pages 98 and 99)

Other observations noted in the FAT

1.21 The Meeting was also informed of the following additional observations during the FAT:

1.22 The use of European AC connectors in the UPS and KVM instead of the American type indicated in the technical specifications of the REDDIG II, AC outlets that were not connected to the AC power strips installed in the side of the racks, but that were installed on a horizontal metal sheet of a non-

aesthetic form (AC outlet for the NETGEAR used for INTERNET remote access and KVN that is not acceptable). The equipment is not identified in the front part of the cabinets.

1.23 Equipment in the racks not identified in the front part of the cabinets.

1.24 Graph representing the equipment in the nodes in the NMS, must be improved so that the image be sharp and could be seen in detail. Likewise, the graph where all the REDDIG II nodes are shown, is not acceptable and the COCESNA node should be included in all parts of the management system.

1.25 All native services in IP (unicast and multicast) should enter through a single port (supporting all VLANs) to RSS Switch baseband, since in case of failure of one of the NetGear Switch, all the services in IP (VLANs) would be commuted through RSS Switch to another NetGear Switch. Moreover, in this way, the use of the network addresses assigned to each country to subdivide them for each service in IP (AMHS, RADAR, AIDC, VoIP and future), could be optimized.

1.26 In case of failure of the Manaus NMS Central server, the backup server in Ezeiza should assume the complete functions of the NMS Central server with all the power to monitor and control of all network stations. According to the explanation provided by INEO E&S, in case of failure of the NMS Central server in Manaus, the backup server in Ezeiza will not assume the complete functions of the NMS Central server.

1.27 According to SDD document, all data services, serial or digital should be monitored in case of failures. During NMS practices, this was not included in the configured monitoring.

Conclusion FAT result

1.28 The Meeting noted that as a result of the FAT, the evaluation group accepted it with all the observations that are presented in full in this agenda item in the REDDIG II website **www1.lima.icao.int/reddig.**

1.29 In this regard, the Meeting deemed convenient that all REDDIG II focal points should take into account all the observations made in the FAT and verify that all of them be considered by the consortium during the REDDIG II commissioning. If the consortium does not solve the observations made during the FAT, these situation will be decisive in the approval of the PSAT acceptance tests in the site by the REDDIG focal points.

1.30 Based on the aforesaid, the Meeting adopted following conclusion:

Conclusion RTO/3-2 Implementation of the observations made in the FAT

That the REDDIG II focal points:

- take note of all the observations made during the factory inspection (FAT) presented in this agenda item and are detailed on the REDDIG website www1.lima.icao.int/reddig;
- verify that the INEO & Level 3 Consortium has implemented them during the provisional acceptance tests in the sites (PSAT); and
- consider the non compliance of the observations as part of the provisional acceptance in the site (PSAT).

Other REDDIG II considerations

Requirements for the customs clearance process of the REDDIG II equipment

1.31 The Meeting proceeded to update the requirements for the customs clearance process of the REDDIG II equipment in each of the customs office of the member States of the REDDIG II. **Appendix E** of this agenda item presents the updated information.

1.32 The Meeting was informed that the INEO & Level 3 Consortium due to inconveniences with the French customs, will send the REDDIG II equipment to the member States by the end of the second week of August 2014.

1.33 In order to carry out the REDDIG II theoretical and practical course, the INEO & Level 3 Consortium sent via airway the appropriate equipment to Rio de Janeiro. These equipment are part of the REDDIG II spare parts and the end of the course, they will be sent to the ICAO South American Regional Office, where the REDDIG spare parts warehouse is situated.

New REDDIG frequencies

1.34 The Meeting was informed that Intelsat proceeded to the allocation of new frequencies for REDDIG II, which are presented as **Appendix F** of this agenda item.

1.35 In this regard, the Meeting considered that the REDDIG focal points should proceed to update the information recorded in the national entities that manage the radio frequency spectrum. The new frequencies would come into operation once the commissioning of the REDDIG II. In this respect, the following conclusion was formulated:

Conclusion RTO/3-3 Registration of the new REDDIG II frequencies

That the REDDIG II focal points proceed to update the information recorded in the national entities that manage the radio frequency spectrum with the new frequencies allocated to REDDIG II by INTELSAT, presented as **Appendix F** of this agenda day.

Installation of router and switch for the native IP services to be connected to REDDIG II

1.36 Taking into account that:

a) all native services in IP will enter through a single port (supporting all VLANs) of the corresponding node) to the RSS Switch baseband;
b) the use of the network addresses assigned to each State to subdivide them for each service in IP (AMHS, RADAR, AIDC, VoIP and other future), have been e optimized;
c) it is necessary to establish a common platform of routing equipment to guarantee and support the current and future IP services.

the Meeting considered that the States proceed to install a redundant "Router" in conjunction with an "Ethernet switch", which will bear all the "VLANs" of all IP services, both present and future of the respective node. The States which currently have some IP service operating through the current REDDIG, are urged to comply with this recommendation. Therefore, the following conclusion was formulated:

Conclusion RTO/3-4 Installation of a redundant router and Ethernet switch for the IP native services

That the REDDIG member States that will acquire the IP native service in the REDDIG II (AMHS, radar, AIDC, VoIP), proceed to the installation of a redundant router and Ethernet switch to support all the "VLANs" of all IP services, both present and future that will come through the single port of the REDDIG II node.

APPENDIX A / APENDICE A

REDDIG II FOCAL POINTS / PUNTOS FOCALES REDDIG II

STATE / ESTADO	Name / Nombre	Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
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Programa de Curso en Fábrica de la REDDIG II / REDDIG II Factory Training Programme

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Morning	**1)- REDDIG II Architecture** **Introduction to IP** 1) Ethernet interface 802.3: framing, MAC 2) IP Basics and address classes and sub-netting. 3) Routing: Static and Dynamic (RIP, OSPF and BGP). 4) QoS	**3)- VSAT Station Components** 1) Instruments and measurement units 2) IBUC main parameters: BW, Power, frequency 3) LNB main parameters and noise 4) Redundancy	**5)- VSAT Networking** SCPC Technologies TDMA technologies Impact of Networking on bandwidth consumption	**7)- Network Design** **- Erlang calculation** **- TDMA simulation** **- Intelsat simulator**	**9)- Cisco configuration course**
Afternoon	**2)- IP advanced** **- multicastissues** **- Tunneling**	**4)- Outdoor equipments Laboratory**	**6)- SKYWAN: Satellite Access and Frames** 1) Introduction to topologies 2) Master and slave 4) Frame Basics **TPC and AGC** 1) TPC and AGC 2) Power essential parameters	**8)- Network Design Practical case.**	**10)- Cisco Laboratory**
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Morning	**11)- Cisco Laboratory**	**13)- Netgear equipments configuration and Lab**	**15)- Skywan - part 2** 1) Line-up manager presentation 2) LUM laboratory	**17)- SkyNMS tools** 1) Database 2) MIB 3) Grapher	**19)- Skywan / Cisco / Netgear Laboratory** - integration - configuration
Afternoon	**12)- Cisco Laboratory**	**14)- SKYWAN part 1** 1). Introduction Cards description 2). Equipment operation: Normal, Loop and Diagnostic 3) Light indicators and LRU replacement 4) Basic troubleshooting **SKYWAN Laboratory**	**16)- SKYNMS -configuration** 1).IP: CTL, RT, NRT. 2) Transmit queues, management rules, fragmentation, and data packets rejection. 3) Burst structure, payloads, QOS. 4) Traffic Modes: Stream, Stream Within Guarthrp,	**18)- SkyNMS - Laboratory** 1) IDU (skywan) configuration 2) Network configuration 3) FR implementation	**20)- NMS system - Part 1** 1)console. 2) web interface. 3) Learn how to navigate through workspaces, how to create new workspace, add reports, ...

WEEK 3	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Morning	**21)- NMS system - Part 2** 4) Description of the groups and maps in WUG. Description of the animation for icons. 5) dynamic or static groups, filter 5) reports	**23)- Redundancy system - theory and Lab** - Equipment configuration - NMS based commutation	**25)- MPLS theory** **Implementation of ground network** **Commutation between networks.**	**27)- Skywan / Cisco / Netgear Laboratory** - integration - configuration	**29)- Debrief - Additional questions / tasks**
Afternoon	**22)- NMS system - laboratory**	**24)- Redundancy system - Cisco Lab** - Equipment configuration - NMS based commutation	**26)- Exploitation et Maintenance** 1) Software upgrade 2) Maintenance exercices 3) Fault finding exercises **Failure prevention**	**28)- Skywan / Cisco / Netgear Laboratory** - integration - configuration	**30)- Debrief - Additional questions / tasks**

APPENDIX C / APENDICE C

SERIAL NUMBER EQUIPMENTS / NÚMEROS DE SERIE

SAEZ	Unit	Qty	S/N	(PN)	Name	License key
Argentina (Ezeiza)						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5K00359			
			39223C5P00379			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3P50183			
Dataprobe RSS	Unit	Qty	S/N	SLOT	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	2	115010100300017	SLOT A		
			115010100300022	SLOT B		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	2	193008400000121	A		
			193008400000126	B		
IPC-16-R : Network Control Card - 16	u	2	134006500400086	A		
			134006500400091	B		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	3	111020200200960	A		
			111020200200961	A		
			111020200200962	A		
AB-D25-R : D25 A/B Card	u	11	111020000100620	A		
			111020000100621	A		
			111020000100622	A		
			111020000100623	A		
			111020000100624	A		
			111020000100625	A		
			111020000100570	A		
			111020000100571	A		
			111020000100572	A		
			111020000100573	A		
			111020000100574	A		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	10	111020200200990	B		
			111020200200991	B		
			111020200200992	B		
			111020200200993	B		

SAEZ	Unit	Qty	S/N	(PN)	Name	License key
			111020200200904	B		
			111020200200905	B		
			111020200200963	B		
			111020200200964	B		
			111020200200965	B		
			111020200200994	B		
AB-D25-R : D25 A/B Card	u	6	111020000100655	B		
			111020000100654	B		
			111020000100651	B		
			111020000100650	B		
			111020000100653	B		
			111020000100652	B		
FP-AB-RSS : Blank Panel for unused slots	u	4	OK	A		
			OK	A		
			OK	A		
			OK	B		
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	6	SFCZ175092KT		Cisco VSAT 1B	
			SFCZ1750C4TD		Cisco VSAT 1A	
			SFCZ175092L9		Cisco VSAT 2A	
			SFCZ175092LS		Cisco VSAT 2B	
			SFCZ175092M6		Cisco VSAT3A	
			SFCZ175092LW		Cisco VSAT3B	
DATA license	u	2	PAK:**3901J20E4A4**			FCZ1750C4TD_20140413235723383.lic
			PAK:**3901J7A6091**			FCZ175092KT_20140413235916463.lic
Communication Manager Express or SRST - 25 seat license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CGS		Cisco VSAT 1A	
			SFOC17427CDM		Cisco VSAT 1B	

SAEZ	Unit	Qty	S/N	(PN)	Name	License key
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	4				
High Density 8-port Async Cable w/ 8 DB-25 Modem Connectors	u	2				
8-Port Async/Sync Serial HWIC, EIA-232	u	2	SFOC17446GSC		Cisco VSAT 1A	
			SFOC17446GUB		Cisco VSAT 1B	
Two-port Voice Interface Card - E and M	u	12	SFOC174781WD		Cisco VSAT 2A	
			SFOC174781VG		Cisco VSAT 2A	
			SFOC174781V3		Cisco VSAT 2B	
			SFOC174781XU		Cisco VSAT 2B	
			SFOC174781Z7		Cisco VSAT 3B	
			SFOC174781TX		Cisco VSAT 3B	
			SFOC174781TB		Cisco VSAT 3B	
			SFOC174781VK		Cisco VSAT 3B	
			SFOC174781Z2		Cisco VSAT 3A	
			SFOC174781X5	2	Cisco VSAT 3A	
			SFOC1747822J		Cisco VSAT 3A	
			SFOC174781U2		Cisco VSAT 3A	
Two-Port Voice Interface Card - FXS and DID	u	2	SFOC17440K5S		Cisco VSAT 1A	
			SFOC17440KDX		Cisco VSAT 1B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	2	SFCZ175092M5 ✓		Cisco GBB 2	
			SFCZ175092LM ✓		Cisco GBB 1	
DATA LICENCE	u	1	PAK:**3901J53447B**		FCZ175092LM_20140414000148473.lic	
Communication Manager Express or SRST - 25 seat license	u	1				
4-Port Async/Sync Serial HWIC	u	2	SFOC17405CPQ		Cisco GBB 1	
			SFOC17405CSK		Cisco GBB 1	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	6				
Two-port Voice Interface Card - E and M	u	3	SFOC1747823V		Cisco GBB 2	
			SFOC174781UU		Cisco GBB 2	

SAEZ	Unit	Qty	S/N	(PN)	Name	License key
			SFOC1747822H		Cisco GBB 2	
Two-Port Voice Interface Card - FXS and DID	u	1	SFOC17412NKF		Cisco GBB 2	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
Two (2) IDU 7000 Master 19" NS + PS AC including:	set	1	730288		SAEZ-SKW-MASTER-A	0134F868A18706D27A4D18231665A869199DC582F570FE508F
Special Discount on the second IDU 7000 Master	u	1	730290		SAEZ-SKW-B	01274BE36B2E87995BBC0A5BA6097392B4703E91E1B7670F7C
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	1				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	2				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	2				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062159			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	3				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	2	0293H4MDB01251			
			0293H4MDB01259			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222952			
Eaton Ellipse ECO 1200 FR USB	u	2	G030D37191			
WhatsUp Gold Distributed Central 25 Devices	u	1				
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	2				

SAEZ	Unit	Qty	S/N	(PN)	Name	License key
SQL USER CAL USR CAL	u	1				
IP to serial converter	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022360			
			TE5022371			
Tx 1+1 switching system	u	1	TE6410584			
Rx 1+1 switching system	u	1	TE6010448			
LNB	u	2	38N139102283			
			38N139102279			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138175			
GPS antenna	u	1	138390			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	5	PE02001120001999			
			PE02001120001999			
			PE02001120001994			
			PE02001120001998			
			PE02001120001993			
Moxa Nport	u	1	TADAE1011384			
SIGNALTEKII	u	1	15610106/03055			
	u	1	15110504/05278			
	u	1	15610407/02037			
	u	1	15110504/05321			
Multimeter	u	1	102427			
Souris	u	1	1343HS02S559			
Clavier	u	1				

SLLP	Unit	Qty	S/N	(PN)	Name	License key
Bolivia(La Paz)						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5E00362 ✓			
			39223C5U0037F ✓			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3Y501B5 ✓			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	1150100300010			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000114			
IPC-16-R : Network Control Card - 16	u	1	134006500400079			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	8	111020200200947			
			111020200200948			
			111020200200918			
			111020200200919			
			111020200200920			
			111020200200921			
			111020200200922			
			111020200200923			
AB-D25-R : D25 A/B Card	u	6	111020000100649			
			111020000100585			
			111020000100586			
			111020000100587			
			111020000100588			

SLLP	Unit	Qty	S/N	(PN)	Name	License key
			111020000100589			
Blanck pannel	u	2				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2911 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175070CW	Cisco VSAT A		
			SFCZ175060M2	Cisco VSAT B		
DATA license	u	2	PAK:**3901J378D8F**	Cisco VSAT A		FCZ175070CW_201403130618552080.lic
			PAK:**3901J6DA574**	Cisco VSAT B		FCZ175060M2_201403130624000610.lic
4-Port Async/Sync Serial HWIC	u	2	SFOC17401WM1	Cisco VSAT B		
			SFOC17401WLQ	Cisco VSAT A		
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	8				
Two-port Voice Interface Card - E and M	u	4	SFOC1747825E	Cisco VSAT B		
			SFOC174781TP	Cisco VSAT B		
			SFOC17461BLF	Cisco VSAT A		
			SFOC174781W5	Cisco VSAT A		
EVM-HD-8FXS/DID	u	2	SFOC17442BMJ			
			SFOC17442BLK			
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092LE	Cisco GBB		
DATA LICENCE	u	1	3901J4F297A	Cisco GBB		FCZ175092LE_201404030859160080.lic
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CQK	Cisco GBB		

SLLP	Unit	Qty	S/N	(PN)	Name	License key
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	2				
Two-port Voice Interface Card - E and M	u	1	SFOC17478214	Cisco GBB		
Two-Port Voice Interface Card - FXS and DID	u	1	SFOC17440JZQ	Cisco GBB		
Network Module Adapter for SM Slot on Ci	u	2	FOC17516V1E			
			FOC17516UYT			
ND Satcom	**Unit**	**Qty**	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:50:C6 ✓		SLLP-SKW-B	0186B0B500C4B524BCFBBEE3BF9E47E7DFB150ECDE1ED0F8C7
			00:40:71:F0:2C:3C ✓		SLLP-SKW-A	01642C6A34EA96D2EF7DBAEDBDCE6D12366E214E6382E1A46E
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	**Unit**	**Qty**	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062214			

SLLP	Unit	Qty	S/N	(PN)	Name	License key
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB00855			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222939			
Eaton Ellipse ECO 1200 FR USB	u	1				
Eaton Rack	u	1				
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022375			
			TE5022376			
Tx 1+1 switching system	u	1	TE6410585			
Rx 1+1 switching system	u	1	TE6010441			
LNB	u	2	36N1384010191			
			36N1384010196			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138179			
GPS antenna	u	1	138388			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120002000			
Moxa Nport	u	1				

SLLP	Unit	Qty	S/N	(PN)	Name	License key
SIGNALTEKII	u	1	15610106/03096			
	u	1	15110504/05372			
	u	1	15610407/02143			
	u	1	15110504/05431			
Multimeter	u	1	109537			
Souris	u	1	1343HS02QGV9			
Clavier	u	1				

SBCT	Unit	Qty	S/N	(PN)	Name	License key
Brazil - Curitiba						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw BOX 2	u	2	39223C5900333 ✓			
			39223C5E00338 ✓			
NETGEAR ProSafe VPN Dual WAN Gigabit BOX 3	u	1	2CH23A3H50153 ✓			
Dataprobe RSS	Unit	Qty	S/N	SLOT	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	2	115010200300014	A		
			115010200300012	B		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	2	193008400000118	A		
			193008400000116	B		
IPC-16-R : Network Control Card - 16	u	2	134006500400083	A		
			134006500400081	B		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	7	111020200200942	A		
			111020200200943	A		
			111020200200944	A		
			111020200200908	A		
			111020200200909	A		
			111020200200910	A		
			111020200200911	A		
AB-D25-R : D25 A/B Card	u	4	111020000100632	A		
			111020000100633	A		
			111020000100634	A		

SBCT	Unit	Qty	S/N	(PN)	Name	License key
			111020000100635	A		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	4	111020200200954	B		
			111020200200955	B		
			111020200200956	B		
			111020200200945	B		
AB-D25-R : D25 A/B Card	u	2	111020000100636	B		
			111020000100637	B		
FP-AB-RSS : Blank Panel for unused slots	u	15				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	4	SFCZ175092LL ✓		SBCT-CISCO-VSAT-1-A	
			SFCZ175092KQ ✓		SBCT-CISCO-VSAT-1-B	
			SFCZ175092MB ✓		SBCT-CISCO-VSAT-2-A	
			SFCZ175092LJ ✓		SBCT-CISCO-VSAT-2-B	
DATA license	u	2	PAK:**3901J7933B2**		SBCT-CISCO-VSAT-1-A	FCZ175092LL_2014031306 02582470.lic
			PAK:**3901J5BF0C3**		SBCT-CISCO-VSAT-1-B	FCZ175092KQ_201403130 557152420.lic
4-Port Async/Sync Serial HWIC	u	2	SFOC173628A0		SBCT-CISCO-VSAT-1-A	
					SBCT-CISCO-VSAT-1-B	
RS-232 **Cable**, DCE Female to Smart Serial, 10 Feet	u	8				
Two-port Voice Interface Card - E and M	u	6	SFOC174781WE		SBCT-CISCO-VSAT-2-A	
			SFOC1747822L		SBCT-CISCO-VSAT-2-A	

SBCT	Unit	Qty	S/N	(PN)	Name	License key
			SFOC1747825H		SBCT-CISCO-VSAT-2-A	
			SFOC174781XM		SBCT-CISCO-VSAT-2-B	
			SFOC174781TU		SBCT-CISCO-VSAT-2-B	
			SFOC174781YY		SBCT-CISCO-VSAT-2-B	
Two-port Voice Interface Card - FXS	u	2	SFOC17440KDE		SBCT-CISCO-VSAT-1-A	
			SFOC17440K34		SBCT-CISCO-VSAT-1-B	
Two-port Voice Interface Card - FXO	u	2	SFOC1746838D		SBCT-CISCO-VSAT-1-A	
			SFOC174682M9		SBCT-CISCO-VSAT-1-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	2	SFCZ175092M4 ✓		SBCT-CISCO-GBB-1	
			SFCZ175092M1 √		SBCT-CISCO-GBB-2	
DATA LICENCE	u	1	PAK:**3901J2DC8F7**		SBCT-CISCO-GBB-1	FCZ175092M4_201403130614263580.lic
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CD0		SBCT-CISCO-GBB-1	
RS-232 **Cable**, DCE Female to Smart Serial, 10 Feet	u	2				
Two-port Voice Interface Card - E and M	u	2	SFOC17461BK8		SBCT-CISCO-GBB-1	
			SFOC174781WW		SBCT-CISCO-GBB-1	
Two-port Voice Interface Card - FXS	u	1	SFOC17440KBX		SBCT-CISCO-GBB-2	
Two-port Voice Interface Card - FXO	u	1	SFOC174682C5		SBCT-CISCO-GBB-2	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:50:AE ✓		SBCT-SWK-B	014F2C410E325D920E5CF73DD8BDD36099BF7E13322BD8187B

SBCT	Unit	Qty	S/N	(PN)	Name	License key
			00:40:71:F0:50:9C ✓		SBCT-SWK-A	0106B902ED27224EBC63A E716AC793CAD3D64F1F92 1A11DB49
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZJ3460YZF ✓			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062216			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1	0293H4MDB01263			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222945 ✓			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D37190			
Eaton Rack	u	1	7063607151			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key

SBCT	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022370			
			TE5022374			
Tx 1+1 switching system	u	1	TE6410586			
Rx 1+1 switching system	u	1	TE6010436			
LNB	u	2	38N139102399			
			38N139102384			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138178			
GPS antenna	u	1	138378			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001991			
Moxa Nport	u	1	TADAE1011460			
SIGNALTEKII BOX 1	u	1	15610106/02991			
	u	1	15110504/05267			
	u	1	15610407/02000			
	u	1	15110504/05188			
Multimeter	u	1	102202			
Souris	u	1	1343HS02S529			
Clavier	u	1				

SBMN	Unit	Qty	S/N	(PN)	Name	License key
Brazil Manaus						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5L00368 ✓			
			39223C5J00358 ✓		F. ALMEIDA	
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3X501B4 ✓			
Dataprobe RSS	Unit	Qty	S/N	SLOT	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	2		A		
				B		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	2		A		
				B		
IPC-16-R : Network Control Card - 16	u	2		A		
				B		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	9	111020200200912	A		
			111020200200913	A		
			111020200200914	A		
			111020200200915	A		
			111020200200916	A		
			111020200200917	A		
			111020200200930	A		
			111020200200931	A		
			111020200200932	A		
AB-D25-R : D25 A/B Card	u	6	111020000100580	A		

SBMN	Unit	Qty	S/N	(PN)	Name	License key
			111020000100581	A		
			111020000100582	A		
			111020000100583	A		
			111020000100584	A		
			111020000100595	A		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	4	111020200200936	B		
			111020200200937	B		
			111020200200938	B		
			111020200200939	B		
AB-D25-R : D25 A/B Card	u	3	111020000100600	B		
			111020000100601	B		
			111020000100602	B		
FP-AB-RSS : Blank Panel for unused slots	u	10				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	4	SFCZ175092L5 ✓		Cisco - vsat - 1A	
			SFCZ175092LP ✓		Cisco - vsat - 1B	
			SFCZ175092M3 ✓		Cisco - vsat - 2A	
			SFCZ175092LR ✓		Cisco - vsat - 2B	
DATA license	u	2	3901J5B05E4		Cisco - vsat - 2A	FCZ175092M3_20140403021603254.lic
			3901J3D3C09		Cisco - vsat - 2B	FCZ175092LR_20140403021844779.lic
Communication Manager Express or SRST - 25 seat license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CCM		Cisco - vsat - 2A	

SBMN	Unit	Qty	S/N	(PN)	Name	License key
			SFOC17427CLW		Cisco - vsat - 2B	
4-Port Async/Sync Serial HWIC	u	2	SFOC17405CR6		Cisco - vsat - 2A	
			SFOC17405CPM		Cisco - vsat - 2B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	12				
Two-port Voice Interface Card - E and M	u	8	SFOC1747826S		Cisco - vsat - 1A	
			SFOC174781TG		Cisco - vsat - 1A	
			SFOC174781ZN		Cisco - vsat - 1A	
			SFOC1747821D		Cisco - vsat - 1A	
			SFOC174781V7		Cisco - vsat - 1B	
			SFOC174781W8		Cisco - vsat - 1B	
			SFOC1747821C		Cisco - vsat - 1B	
			SFOC17478215		Cisco - vsat - 1B	
Two-Port Voice Interface Card - FXS and DID	u	2	SFOC17440K5X		Cisco - vsat - 2A	
			SFOC17440KD5		Cisco - vsat - 2B	
Four-Port Voice Interface Card - FXS and DID	u	2	SFOC1747521B		Cisco - vsat - 2A	
			SFOC1747519Y		Cisco - vsat - 2B	
Cisco 2911 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175060M0 ✓		Cisco GBB	
DATA LICENCE	u	1	PAK:**3901J1FF7D7**		Cisco GBB	FCZ175060M0_20140403024206795.lic
Communication Manager Express or SRST - 25 seat license	u	1				
4-Port Async/Sync Serial HWIC	u	1	SFOC17401WJ3			
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	3				

SBMN	Unit	Qty	S/N	(PN)	Name	License key
Two-port Voice Interface Card - E and M	u	2	SFOC174781X7		Cisco GBB	
			SFOC1747825G		Cisco GBB	
EVM-HD-8FXS/DID	u	1	FOC17442BK8			
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
Two (2) IDU 7000 Master 19" NS + PS AC including:	set	1	730286		Skywan master A	
Special Discount on the second IDU 7000 Master	u	1	75014		Skywan B	
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	1				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	4	CZJ3460YZQ		PC central	
			CZJ3460YZ4			
			CZJ3460YZ8			
			CZJ340YZS			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	4				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062109			

SBMN	Unit	Qty	S/N	(PN)	Name	License key
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	8				
KVM extender ATEN	u				PC central	
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	4	0293H4MDB01731		PC central	
			0293H4MDB00873			
			0293H4MDB00875			
			0293H4MDB00706			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222940			
Eaton Ellipse ECO 1200 FR USB	u	4	G030D43400			
			G030D43418			
			G030D37192			
			G030D37194			
WhatsUp Gold Distributed Central 25 Devices	u	1				
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	3				
SQL USER CAL USR CAL	u	1				

SBMN	Unit	Qty	S/N	(PN)	Name	License key
IP to serial converter	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 80W	u	2	TE5022364			
			TE5022368			
Tx 1+1 switching system	u	1	TE6410587			
Rx 1+1 switching system	u	1	TE6010432			
LNB	u	2	38N139102282			
			38N139102284			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138187			
GPS antenna	u	1	138389			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001992			
Moxa Nport	u	1	TADAE1011561			
SIGNALTEKII	u	1	15610106/02798			
	u	1	15110504/04822			
	u	1	15610407/01842			
	u	1	15110504/04762			
Multimeter	u	1	109553			
Souris	u	1	1343HS02S589			
Clavier	u	1				

SBRE	Unit	Qty	S/N	(PN)	Name	License key
Brazil - Recife						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5F00371			
			39223C5H00373			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3G50152			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010100300006			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000110			
IPC-16-R : Network Control Card - 16	u	1	134006500400075			
AB-D25-R : D25 A/B Card	u	2	111020000100565			
			111020000100566			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	10	111020200200894			
			111020200200895			
			111020200200896			
			111020200200897			
			111020200200898			
			111020200200899			
			111020200200995			
			111020200200996			
			111020200200997			
			111020200200998			

SBRE	Unit	Qty	S/N	(PN)	Name	License key
FP-AB-RSS : Blank Panel for unused slots	u	4				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	4	SFCZ175092MA		SBRE-CISCO-VSAT-1-A	
			SFCZ175092M7		SBRE-CISCO-VSAT-1-B	
			SFCZ175092M8		SBRE-CISCO-VSAT-2-	
			SFCZ175092LU		SBRE-CISCO-VSAT-2-	
DATA license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CFC		SBRE-CISCO-VSAT-1-A	
			SFOC17427CLM		SBRE-CISCO-VSAT-1-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	2				
Two-port Voice Interface Card - E and M	u	8	SFOC1747824X		SBRE-CISCO-VSAT-2-	
			SFOC1747821F		SBRE-CISCO-VSAT-2-	
			SFOC17444ZFV		SBRE-CISCO-VSAT-2-	
			SFOC17461BKD		SBRE-CISCO-VSAT-2-	
			SFOC174781VW		SBRE-CISCO-VSAT-2-	
			SFOC174781VX		SBRE-CISCO-VSAT-2-	
			SFOC174781V1		SBRE-CISCO-VSAT-2-	
			SFOC1747825S		SBRE-CISCO-VSAT-2-	
Two-port Voice Interface Card - FXS	u	2	SFOC17440KB7		SBRE-CISCO-VSAT-1-A	
			SFOC17440KC5		SBRE-CISCO-VSAT-1-B	
Cisco 2911 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175070D1		SBRE-CISCO-GBB	
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CNS		SBRE-CISCO-GBB	

SBRE	Unit	Qty	S/N	(PN)	Name	License key
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	1				
Two-port Voice Interface Card - E and M	u	2	SFOC174781Z4		SBRE-CISCO-GBB	
			SFOC1747821Z		SBRE-CISCO-GBB	
EVM-8FXS	u	1	FOC17442BPA		SBRE-CISCO-GBB	
:	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:51:C2 ✓			
			00:40:71:F0:52:34 ✓			
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZJ3460YZP			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062219			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB00710			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222872			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43419			
WhatsUp Gold Distributed Remote 25 Devices	u	1				

SBRE	Unit	Qty	S/N	(PN)	Name	License key
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 80W	u	2	TE5022342			
			TE5022351			
Tx 1+1 switching system	u	1	TE6410573			
Rx 1+1 switching system	u	1	TE6010435			
LNB	u	2	38N139102290			
			38N139102285			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138181			
GPS antenna	u	1	138375			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001997			
Moxa Nport	u	1	TADAE1011409			
SIGNALTEKII	u	1	15610106/02823			
	u	1	15110504/04833			
	u	1	15610407/01762			
	u	1	15110504/04672			
Multimeter	u	1	109543			
Souris	u	1	1343HS02S569			
Clavier	u	1				

SCEL	Unit	Qty	S/N	(PN)	Name	License key
Chile						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5900341 ✓			
			39223C5B00351 ✓			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3J50154 ✓			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010200300015	F		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000119			
IPC-16-R : Network Control Card - 16	u	1	134006500400084			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	8	111020200200876			
			111020200200877			
			111020200200878			
			111020200200879			
			111020200200880			
			111020200200881			
			111020200200999			
			111020200201000			
AB-D25-R : D25 A/B Card	u	4	111020000100550			
			111020000100551			
			111020000100552			
			111020000100553			
Blanck pannel	u	4/5				

SCEL	Unit	Qty	S/N	(PN)	Name	License key
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	4	SFCZ175092L6 ✓		SCEL-CISCO-VSAT-1-A	
			SFCZ175092KL ✓		SCEL-CISCO-VSAT-1-B	
			SFCZ175092KF ✓			
			SFCZ175092KX ✓			
DATA license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CG7		SCEL-CISCO-VSAT-1-A	
			SFOC17427CCX		SCEL-CISCO-VSAT-1-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	4				
Two-port Voice Interface Card - E and M	u	8	SFOC174781ZX			
			SFOC1747827W			
			SFOC174781XT			
			SFOC1747823H			
			SFOC174781ZY			
			SFOC174781VN			
			SFOC1747825K			
			SFOC174781WL			
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092KT 8 F			
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CMW			
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	1				

SCEL	Unit	Qty	S/N	(PN)	Name	License key
Two-port Voice Interface Card - E and M	u	2	SFOC174781Y4			
			SFOC1747821P			
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:32:2C ✓			
			00:40:71:F0:32:38 ✓			
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZj3460YZ6			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062134			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB00863			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222946			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43413			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				

SCEL	Unit	Qty	S/N	(PN)	Name	License key
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022354			
			TE5022358			
Tx 1+1 switching system	u	1	TE6410588			
Rx 1+1 switching system	u	1	TE6010439			
LNB	u	2	36N1384010182			
			38N139102385			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138180	✓		
GPS antenna	u	1	138377			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001719			
Moxa Nport	u	1	TADBE1011140 ✓			
SIGNALTEKII	u	1	15610106/03000			
	u	1	15110504/05317			
	u	1	15610407/02094			
	u	1	15110504/05105			
Multimeter	u	1	102201			
Souris	u	1	1343HS02S4Z9			
Clavier	u	1				

SKED	Unit	Qty	S/N	(PN)	Name	License key
Colombia y Tegu						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5K0034B ✓			
			39223C5N0034E ✓			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3J50182 ✓			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010200300019	✓		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000123			
IPC-16-R : Network Control Card - 16	u	1	134006500400088			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	4	111020200201001			
			111020200201002			
			111020200201003			
			111020200201004			
AB-D25-R : D25 A/B Card	u	11	111020000100656			
			111020000100657			
			111020000100658			
			111020000100659			
			111020000100660			
			111020000100661			
			111020000100662			
			111020000100663			
			111020000100664			

SKED	Unit	Qty	S/N	(PN)	Name	License key
			111020000100665			
			111020000100666			
Blanck pannel	u	1				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	3	SFCZ175092KE ✓		SKED-CISCO-VSAT-A	
			SFCZ175092KG ✓		SKED-CISCO-VSAT-B	
			SFCZ175092KZ		TEGU	
DATA license	u	2			SKED-CISCO-VSAT-A	FCZ175092KE_20140409095336384.lic
					SKED-CISCO-VSAT-B	FCZ175092KG_20140409095533347.lic
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CMK		SKED-CISCO-VSAT-A	
			SFOC17427CEH		SKED-CISCO-VSAT-B	
4-Port Async/Sync Serial HWIC	u	2	SFOC17405CSC		SKED-CISCO-VSAT-A	
			SFOC17401WLX		SKED-CISCO-VSAT-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	10				
2-port E1	u	2	SFOC17479NZR		SKED-CISCO-VSAT-A	
Four-Port Voice Interface Card - FXS and DID	u	1	SFOC174751CJ		TEGU	
			SFOC17479P03		SKED-CISCO-VSAT-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092LG ✓		SKED-CISCO-GBB	
DATA LICENCE	u	1			SKED-CISCO-GBB	FCZ175092LG_20140409095757064.lic

SKED	Unit	Qty	S/N	(PN)	Name	License key
4-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17401WM5		SKED-CISCO-GBB	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	4				
1 port E1	u	1	SFOC17451Q5J		SKED-CISCO-GBB	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:51:2C			
			00:40:71:F0:51:1A			
License OSPF	u	3				
Lic 8 PSK	u	3				
SkyNMSCD	u	0				
Lic TCP-A	u	3				
Equipment: Network Management System						
HP ProLiant DL160 Gen8 Base - Server, including:	u	1				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062119			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB00877			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222941			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43421			

SKED	Unit	Qty	S/N	(PN)	Name	License key
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 80W	u	2	TE5022345			
			TE5022353			
Tx 1+1 switching system	u	1	TE6410576			
Rx 1+1 switching system	u	1	TE6010434			
LNB	u	2	38N139102379			
			38N139102392			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138177			
GPS antenna	u	1	138379			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001996			
Moxa Nport	u	1				
SIGNALTEKII	u	1	15610106/03077			
	u	1	15110504/05078			
	u	1	15610407/02033			
	u	1	15110504/05327			
Multimeter	u	1	102464			
Souris	u	1	1343HS02S539			
Clavier	u	1				

SEGU	Unit	Qty	S/N	(PN)	Name	License key
Ecuador						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5H00357 ✓			
			39223C5N0035C ✓			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A305017E ✓			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010200300003			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000107			
IPC-16-R : Network Control Card - 16	u	1	134006500400072			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	4	111020200200985			
			111020200200986			
			111020200200987			
			111020200200988			
AB-D25-R : D25 A/B Card	u	4	111020000100554			
			111020000100567			
			111020000100568			
			111020000100569			
Blanck pannel	u	8				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175092LZ ✓		SEGU-CISCO-VSAT-1-A	
			SFCZ175092LX ✓		SEGU-CISCO-VSTA-2-B	

SEGU	Unit	Qty	S/N	(PN)	Name	License key
DATA license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CKU		SEGU-CISCO-VSAT-1-A	
			SFOC17427CM2		SEGU-CISCO-VSTA-2-B	
RS-232 **Cable**, DCE Female to Smart Serial, 10 Feet	u	4				
1-port E1	u	2	SFOC17451H98		SEGU-CISCO-VSAT-1-A	
			SFOC17451GXC		SEGU-CISCO-VSTA-2-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175072LY		SEGU-CISCO-GBB	
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CPA		SEGU-CISCO-GBB	
RS-232 **Cable**, DCE Female to Smart Serial, 10 Feet	u	2				
1 port E1	u	1	SFOC17451H8L		SEGU-CISCO-GBB	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:51:08			
			00:40:71:F0:51:5C			
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	**2**				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				

SEGU	Unit	Qty	S/N	(PN)	Name	License key
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062133			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB00872			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222942			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43417			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022369 ✓			
			TE5022372			
Tx 1+1 switching system	u	1	TE6410589 ✓			
Rx 1+1 switching system	u	1	TE6010437			
LNB	u	2	38N139102397			
			38N139102380			
Handheld Terminal	u	1	700-10544-0001 ✓			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138172			
GPS antenna	u	1	138383			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001711 ✓			

SEGU	Unit	Qty	S/N	(PN)	Name	License key
Moxa Nport	u	1				
SIGNALTEKII	u	1	15610106/03115			
	u	1	15110504/05491			
	u	1	15610407/02119			
	u	1	15110504/05428			
Multimeter	u	1	109538			
Souris	u	1	1343HS02S509			
Clavier	u	1				

SOCA	Unit	Qty	S/N	(PN)	Name	License key
French Guyana - Cayenne						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5H0031F ✓			
			39223C5R0035E ✓			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3E50150 ✓			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	1150102200300005	F ←		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000109			
IPC-16-R : Network Control Card - 16	u	1	134006500400074			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	7	111020200200888			
			111020200200924			
			111020200200925			
			111020200200926			
			111020200200927			
			111020200200928			
			111020200200929			
AB-D25-R : D25 A/B Card	u	3	111020000100626			
			111020000100627			
			111020000100628			
Blanck pannel	u	6				
Cisco	Unit	Qty	S/N	(PN)	Name	License key

SOCA	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175092KP		SOCA-CISCO-VSAT-1-A	
			SFCZ175092LQ		SOCA-CISCO-VSAT-2-B	
DATA license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CED		SOCA-CISCO-VSAT-1-A	
			SFOC17427CC0		SOCA-CISCO-VSAT-2-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	4				
2-port Voice Interface Card - FXS	u	2	SFOC17440K5A		SOCA-CISCO-VSAT-1-A	
			SFOC17440K4L		SOCA-CISCO-VSAT-2-B	
4-port Voice Interface Card - FXS	u	2	SFOC174752SW		SOCA-CISCO-VSAT-1-A	
			SFOC1747525F		SOCA-CISCO-VSAT-2-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092M2		SOCA-CISCO-GBB	
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CBV		SOCA-CISCO-GBB	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	1				
Four-port Voice Interface Card - FXS	u	1	SFOC174752SX		SOCA-CISCO-GBB	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:51:14			
			00:40:71:F0:51:02			
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				

SOCA	Unit	Qty	S/N	(PN)	Name	License key
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZJ3450C31 ✓			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062209			
HP Hard Disk ~~300~~ 500 Go 3.5 ~~SAS~~ SATA ~~15000~~ 7.2K tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB00870			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222950			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43401 ✓			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 80W	u	2	TE5022357			
			TE5022361			
Tx 1+1 switching system	u	1	TE6410579			
Rx 1+1 switching system	u	1	TE6010447			
LNB	u	2	38N139102382			
			38N139102389			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						

SOCA	Unit	Qty	S/N	(PN)	Name	License key
Horloge RT CP 09	u	1	138174	✓		
GPS antenna	u	1	138376			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001720			
NPORT						
SIGNALTEKII	u	1	15610106/03139			
	u	1	15110504/05429			
	u	1	15610407/02112			
	u	1	15110504/05426			
Multimeter	u	1	168249			
Souris	u	1	1343HS02S5A9			
Clavier	u	1				

SYGC	Unit	Qty	S/N	(PN)	Name	License key
Guyana - Georgetown						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5R0037A		SYGC-SWI-A	
			39223C5E00370		SYGC-SWI-B	
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3V501B2			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010100300007			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000111			
IPC-16-R : Network Control Card - 16	u	1	134006500400076			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	6	111020200200940			
			111020200200941			
			111020200200900			
			111020200200901			
			111020200200902			
			111020200200903			
AB-D25-R : D25 A/B Card	u	7	111020000100603			
			111020000100604			
			111020000100598			
			111020000100597			
			111020000100596			
			111020000100560			
			111020000100561			
Blanck pannel	u	3				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	FCZ175092LV		SYGC-CISCO-VSAT-1-A	
			FCZ175092M0		SYGC-CISCO-VSAT-1-	
DATA license	u	2	PAK:3901J7B7593		SYGC-CISCO-VSAT-1-A	FCZ175092LV_20140409101013084.lic
			PAK:3901J131B08		SYGC-CISCO-VSAT-1-B	FCZ175092M0_20140409101149085.lic
4-Port Async/Sync Serial HWIC	u	2	SFOC17405CRP		SYGC-CISCO-VSAT-1-	
			SFOC173628C3		SYGC-CISCO-VSAT-2-	

SYGC	Unit	Qty	S/N	(PN)	Name	License key
RS-232 **Cable**, DCE Female to Smart Serial, 10 Feet	u	6				
Two-port Voice Interface Card - FXS	u	2	SFOC17440K67		SYGC-CISCO-VSAT-1-	
			SFOC17440KAP		SYGC-CISCO-VSAT-2-	
Four-port Voice Interface Card - FXS	u	2	SFOC17475236		SYGC-CISCO-VSAT-1-	
			SFOC174752QK		SYGC-CISCO-VSAT-2-	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092LT		SYGC-CISCO-GBB	
DATA LICENCE	u	1	PAK:3901J32E68A		SYGC-CISCO-GBB	
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CDE		SYGC-CISCO-GBB	
RS-232 **Cable**, DCE Female to Smart Serial, 10 Feet	u	2				
Four-port Voice Interface Card - FXS	u	1	SFOC1747525E			
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:32:86	IDU1070B Type R-AC-NS		0170E57F38D2479CE64B0C089C999609D6BD60F14DCD0D70B7
			00:40:71:F0:32:68	IDU1070B Type R-AC-NS		01265E5515F24862D0C83DD74A7067B50F534B9ADEC9F0FF42
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System			S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZJ34500JV			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062120			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1	0293H4MDB00869			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222949			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43227			

SYGC	Unit	Qty	S/N	(PN)	Name	License key
Eaton Rack	u	1	730-80344-00P			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022365			
			TE5022367			
Tx 1+1 switching system	u	1	TE6410581			
Rx 1+1 switching system	u	1	TE6010445			
LNB	u	2	38N139102391			
			38N139102378			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others			S/N	(PN)	Name	License key
Horloge RT CP 09	u	1	138183			
GPS antenna	u	1	138387			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001712			
NPORT						
SIGNALTEKII	u	1	15610106/03057			
	u	1	15110504/05139			
	u	1	15610407/01954			
	u	1	15110504/05337			
Multimeter	u	1	108669			
Souris	u	1	1343HS02S519			
Clavier	u	1				

SGAS	Unit	Qty	S/N	(PN)	Name	License key
paraguay						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5F00347 ✓			
			39223C5D00345 ✓			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3L50156 ✓			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	1150102003000 23	F		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000127			
IPC-16-R : Network Control Card - 16	u	1	134006500400092			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	8	111020200200966			
			111020200200967			
			111020200200968			
			111020200200969			
			111020200200970			
			111020200200971			
			111020200200972			
			111020200200973			
AB-D25-R : D25 A/B Card	u	5	111020000100610			
			111020000100611			
			111020000100612			
			111020000100613			
			111020000100614			

SGAS	Unit	Qty	S/N	(PN)	Name	License key
Blanck pannel	u	3 4				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175092KR		SGAS-CISCO-VSAT-1-A	
			SFCZ175092L2		SGAS-CISCO-VSAT-2-B	
DATA license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CH2		SGAS-CISCO-VSAT-1-A	
			SFOC17427CCT		SGAS-CISCO-VSAT-2-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	4				
Four-port Voice Interface Card - FXS	u	2	SFOC174752R2		SGAS-CISCO-VSAT-1-A	
			SFOC174752YC		SGAS-CISCO-VSAT-2-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092KK		SGAS-CISCO-GBB	
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CDR		SGAS-CISCO-GBB	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	2				
Two-port Voice Interface Card - FXS	u	1	SFOC17440KCS		SGAS-CISCO-GBB	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:50:E4			
			00:40:71:F0:51:32			
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				

SGAS	Unit	Qty	S/N	(PN)	Name	License key
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZJ330005C ✓			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062173			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min. 500 SATA 7.2K	u	2				
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1	0293H4MDB01256			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH6G35521			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43411 ✓			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022363			
			TE5022362			
Tx 1+1 switching system	u	1	TE6410580			
Rx 1+1 switching system	u	1	TE6010433			
LNB	u	2	38N139102387			
			38N139102376			
Handheld Terminal	u	1	700-10544-0001			
Wave guide coax	u	1	570-10514-0001			

SGAS	Unit	Qty	S/N	(PN)	Name	License key
			570-10514-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138186	✓		
GPS antenna	u	1	138385			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001713			
NPORT						
SIGNALTEKII	u	1	15610106/03127			
	u	1	15110504/05377			
	u	1	15610407/02139			
	u	1	15110504/05437			
Multimeter	u	1	168238			
Souris	u	1	1343HS02S5H9			
Clavier	u	1				

SPIM	Unit	Qty	S/N	(PN)	Name	License key
peru						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5C00360 ✓		SPIM-SWI-A	
			39223C5S0035F ✓		SPIM-SWI-B	
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3K50155 ✓		SPIM-VPN	
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010200300016	A F		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000120	A		
IPC-16-R : Network Control Card - 16	u	1	134006500400085	A		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	3	111020200200957	A		
			111020200200958	A		
			111020200200959	A		
AB-D25-R : D25 A/B Card	u	9	111020000100615	A		
			111020000100616	A		
			111020000100617	A		
			111020000100618	A		
			111020000100619	A		
			111020000100562	A		
			111020000100563	A		
			111020000100564	A		
			111020000100599	A		
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010200300021	B F		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000125	B		
IPC-16-R : Network Control Card - 16	u	1	134006500400090	B		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	1	111020200200984	B		
AB-D25-R : D25 A/B Card	u	5	111020000100644	B		
			111020000100645	B		

SPIM	Unit	Qty	S/N	(PN)	Name	License key
			111020000100646	B		
			111020000100647	B		
			111020000100648	B		
Blanck pannel	u	(4) 16				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175092KU		SPIM-CISCO-VSAT-1-A	
			SFCZ175092L3		SPIM-CISCO-VSAT-1-B	
DATA license	u	2	PAK:**3901J5C330F**		SPIM-CISCO-VSAT-1-A	FCZ175092KU_20140409100040067.lic
			PAK:**3901JCDFE9C**		SPIM-CISCO-VSAT-1-B	FCZ175092L3_20140409100218355.lic
8port A/S	u	2	SFOC17446GUP		SPIM-CISCO-VSAT-1-A	
			SFOC17446GU9		SPIM-CISCO-VSAT-2-B	
Cable	u	2				
1 port E1	u	2	SFOC17451GSA		SPIM-CISCO-VSAT-1-A	
			SFOC17351Z7N		SPIM-CISCO-VSAT-2-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092L0		SPIM-CISCO-GBB	
DATA LICENCE	u	1	PAK:**3901J7CFAF4**		SPIM-CISCO-GBB	FCZ175092L0_20140409100403357.lic
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CGP		SPIM-CISCO-GBB	
4-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17405CPP		SPIM-CISCO-GBB	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	5				
1 port E1	u	1	SFOC17451GTD		SPIM-CISCO-GBB	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:32:4A			017A9E5A2C0675C75E43DF7FB81AC66AB3BF636B184EFA3D1E
			00:40:71:F0:51:D4			01A3C26672E6ED77D31D0E95A1B504653413F6BF0116A1B1CA
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZJ34500JT			

SPIM	Unit	Qty	S/N	(PN)	Name	License key
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062217			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min. 500 SATA 7.2K	u	2				
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1	0293H4MDB00868			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222948			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43415 ✓			
Eaton Rack	u	1	730-80344-00P			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
IP to serial	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022343			
			TE5022346 ✓			
Tx 1+1 switching system	u	1	TE6410575			
Rx 1+1 switching system	u	1	TE6010442 ✓			
LNB	u	2	38N139102390 ✓			
			38N139102388 ✓			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others	Unit	Qty	S/N	(PN)	Name	License key
Horloge RT CP 09	u	1	138171 ✓			
GPS antenna	u	1	138171			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001716 ✓			
NPORT	u	1	TADAE1011417			
SIGNALTEKII	u	1	15610106/03111 ✓			
	u	1	15110504/05417			
	u	1	15610407/02134 ✓			

SPIM	Unit	Qty	S/N	(PN)	Name	License key
	u	1	15110504/05537			
Multimeter	u	1	108633			
Souris	u	1	1343HS02S5J9			
Clavier	u	1				

SMPM	Unit	Qty	S/N	(PN)	Name	License key
Suriname						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5D00361			
			39223C5P0035D			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3M50181			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	1150102003000018			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000122			
IPC-16-R : Network Control Card - 16	u	1	134006500400087			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	8	111020200200948			
			111020200200949			
			111020200200950			
			111020200200951			
			111020200200952			
			111020200200953			
			111020200200974			
			111020200200975			
AB-D25-R : D25 A/B Card	u	5	111020000100545			
			111020000100546			
			111020000100547			
			111020000100548			
			111020000100549			

SMPM	Unit	Qty	S/N	(PN)	Name	License key
Blanck pannel	u	3				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175092KY		SMPM-CISCO-VSAT-1-A	
			SFCZ175092KW		SMPM-CISCO-VSAT-2-B	
DATA license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CC1		SMPM-CISCO-VSAT-1-A	
			SFOC17427CEA		SMPM-CISCO-VSAT-2-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	4				
Four-port Voice Interface Card - FXS	u	2	SFOC174752R8		SMPM-CISCO-VSAT-1-A	
			SFOC1747524K		SMPM-CISCO-VSAT-2-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092LZ		SMPM-CISCO-GBB	
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CCL		SMPM-CISCO-GBB	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	2				
Two-port Voice Interface Card - FXS	u	1	SFOC17440K2L		SMPM-CISCO-GBB	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:50:FC			
			00:40:71:F0:51:26			
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				

SMPM	Unit	Qty	S/N	(PN)	Name	License key
Equipment: Network Management System						
HP ProLiant DL160 Gen8 Base - Server, including:	u	1				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062117			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1	0293H4MDB01230			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222947			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D37160			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 80W	u	2	TE5022359			
			TE5022366			
Tx 1+1 switching system	u	1	TE6410582			
Rx 1+1 switching system	u	1	TE6010443			
LNB	u	2	38N139102395			
			38N139102396			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						

SMPM	Unit	Qty	S/N	(PN)	Name	License key
Horloge RT CP 09	u	1	138173			
GPS antenna	u	1	138382			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001718			
NPORT						
SIGNALTEKII	u	1	15610106/02961			
	u	1	15110504/05204			
	u	1	15610407/02019			
	u	1	15110504/05207			
Multimeter	u	1	108617			
Souris	u	1	1343HS02S5G9			
Clavier	u	1				

TTZP	Unit	Qty	S/N	(PN)	Name	License key
Trinidad						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5L0035A			
			39223C5S0036D			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3L50180			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010200300002			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000106			
IPC-16-R : Network Control Card - 16	u	1	134006500400071			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	7	111020200200978			
			111020200200979			
			111020200200980			
			111020200200981			
			111020200200982			
			111020200200983			
			111020200200989			
AB-D25-R : D25 A/B Card	u	3	111020000100590			
			111020000100591			
			111020000100592			
Blanck pannel	u	6				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175092KS		TTZP-CISCO-VSAT-1-A	
			SFCZ175092L4		TTZP-CISCO-VSAT-1-B	

TTZP	Unit	Qty	S/N	(PN)	Name	License key
DATA license	u	2			TTZP-CISCO-VSAT-1-A	FCZ175092KS_20140409083436968.lic
					TTZP-CISCO-VSAT-1-B	FCZ175092L4_20140409084609785.lic
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CQL		TTZP-CISCO-VSAT-1-A	
			SFOC17427CBT		TTZP-CISCO-VSAT-2-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	4				
Two-port Voice Interface Card - FXS	u	2	SFOC17440KBW		TTZP-CISCO-VSAT-1-A	
			SFOC17440KB8		TTZP-CISCO-VSAT-2-B	
Four-port Voice Interface Card - FXS	u	2	SFOC1747529F		TTZP-CISCO-VSAT-1-A	
			SFOC1747523E		TTZP-CISCO-VSAT-2-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092LH		TTZP-CISCO-GBB	
DATA LICENCE	u	1			TTZP-CISCO-GBB	FCZ175092LH_20140409090553959.lic
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CNZ		TTZP-CISCO-GBB	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	1				
4-port Voice Interface Card - FXS	u	1	SFOC174751L0		TTZP-CISCO-GBB	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:51:0E		A	
			00:40:71:F0:51:20		B	
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				

TTZP	Unit	Qty	S/N	(PN)	Name	License key
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062129			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1	0293H4MDB00704			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222943			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43414			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022349			
			TE5022356			
Tx 1+1 switching system	u	1	TE6410578			
Rx 1+1 switching system	u	1	TE6010438			
LNB	u	2	38N139102383			
			38N139102398			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138184			
GPS antenna	u	1	138391			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001714			
NPORT						
	u	1	15610106/02971			
SIGNAL TEKII	u	1	15110504/05195			

TTZP	Unit	Qty	S/N	(PN)	Name	License key
SIGNALYERR	u	1	15610407/02060			
	u	1	15110504/05210			
Multimeter	u	1	168350			
Souris	u	1	1343HS02S5D9			
Clavier	u	1				

SUMU	Unit	Qty	S/N	(PN)	Name	License key
Uruguay						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5M00377			
			39223C5U0037D			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3L5017D			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	115010200300020			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000124			
IPC-16-R : Network Control Card - 16	u	1	134006500400089			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	8	111020200200870			
			111020200200871			
			111020200200872			
			111020200200873			
			111020200200874			
			111020200200875			
			111020200200976			
			111020200200977			
AB-D25-R : D25 A/B Card	u	6	111020000100638			
			111020000100639			
			111020000100640			
			111020000100641			
			111020000100642			

SUMU	Unit	Qty	S/N	(PN)	Name	License key
			111020000100631			
Blanck pannel	u	3				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2911 UC Bundle, PVDM3-16, UC License PAK	u	2	SFCZ175060M5		SUMU-CISCO-VSAT-1-A	
			SFCZ175070CZ		SUMU-CISCO-VSAT-2-	
DATA license	u	2				
4-Port Async/Sync Serial HWIC	u	2	SFOC17401WL3		SUMU-CISCO-VSAT-1-A	
			SFOC17401WLB		SUMU-CISCO-VSAT-2-	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	8				
Four-port Voice Interface Card - FXS	u	2	SFOC174752YD		SUMU-CISCO-VSAT-1-A	
			SFOC174752ST		SUMU-CISCO-VSAT-1-B	
EVM 3FXS / 4 FXO	u	2	SFOC17443E0L		SUMU-CISCO-VSAT-1-A	
			SFOC17443E0C		SUMU-CISCO-VSAT-1-B	
8FXS			FOC180475A4		SUMU-CISCO-VSAT-1-A	
			FOC17442BP8		SUMU-CISCO-VSAT-1-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	1	SFCZ175092L1		SUMU-CISCO-GBB	
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CF6		SUMU-CISCO-GBB	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	2				
Two-port Voice Interface Card - FXO	u	1	SFOC17412NKE		SUMU-CISCO-GBB	

ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:52:0A			

SUMU	Unit	Qty	S/N	(PN)	Name	License key
			00:40:71:F0:51:56			
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062121			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB00879			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222953			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43416			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022373			
			TE5022377			
Tx 1+1 switching system	u	1	TE6410583			

SUMU	Unit	Qty	S/N	(PN)	Name	License key
Rx 1+1 switching system	u	1	TE6010446			
LNB	u	2	38N139102394			
			38N139102393			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138185			
GPS antenna	u	1	138380			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001715			
NPORT						
SIGNALTEKII	u	1	15610106/02988			
	u	1	15110504/05353			
	u	1	15610407/01969			
	u	1	15110504/05253			
Multimeter	u	1	182951			
Souris	u	1	1343HS02S5B9			
Clavier	u	1				

SVMI	Unit	Qty	S/N	(PN)	Name	License key
Venezuela						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5H00365		SVMI-SWI-A	
			39223C5G00364		SVMI-SWI-B	
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A325018E		SVMI-VPN	
Dataprobe RSS	Unit	Qty	S/N	SLOT	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	1150102000300008	A		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000112	A		
IPC-16-R : Network Control Card - 16	u	1	134006500400077	A		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	2	111020200200906	A		
			111020200200907	A		
AB-D25-R : D25 A/B Card	u	10	111020000100575	A		
			111020000100576	A		
			111020000100577	A		
			111020000100578	A		
			111020000100579	A		
			111020000100605	A		
			111020000100606	A		
			111020000100607	A		
			111020000100608	A		
			111020000100609	A		
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	1	1150102000300004	B		
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1	193008400000108	B		
IPC-16-R : Network Control Card - 16	u	1	134006500400073	B		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	9	111020200200882	B		
			111020200200883	B		
			111020200200884	B		

SVMI	Unit	Qty	S/N	(PN)	Name	License key
			111020200200885	B		
			111020200200886	B		
			111020200200887	B		
			111020200200933	B		
			111020200200934	B		
			111020200200935	B		
AB-D25-R : D25 A/B Card	u	5	111020000100555	B		
			111020000100556	B		
			111020000100557	B		
			111020000100558	B		
			111020000100559	B		
FP-AB-RSS : Blank Panel for unused slots	u	6				
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	4	SFCZ175092KV		SVMI-CISCO-VSAT-1-A	
			SFCZ175092KH		SVMI-CISCO-VSAT-2-A	
			SFCZ175092KJ		SVMI-CISCO-VSAT-1-B	
			SFCZ175092KN		SVMI-CISCO-VSAT-2-B	
DATA license	u	2				
2-Port Async/Sync Serial HWIC	u	2	SFOC17427CPY		SVMI-CISCO-VSAT-1-A	
			SFOC17427CH4		SVMI-CISCO-VSAT-1-B	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	2				
8-Port Async	u	2	SFOC174673XU		SVMI-CISCO-VSAT-1-A	
			SFOC17432HRL		SVMI-CISCO-VSAT-1-B	
2-port Voice Interface Card - E / M	u	8	SFOC17461BJJ		SVMI-CISCO-VSAT-2-A	
			SFOC174781UE		SVMI-CISCO-VSAT-2-A	
			SFOC174781WT		SVMI-CISCO-VSAT-2-A	
			SFOC174781WV		SVMI-CISCO-VSAT-2-A	
			SFOC1747825R		SVMI-CISCO-VSAT-2-B	
			SFOC1747820X		SVMI-CISCO-VSAT-2-B	
			SFOC17478231		SVMI-CISCO-VSAT-2-B	
			SFOC174781U0		SVMI-CISCO-VSAT-2-B	
4 PORT FXS	u	2	SFOC174751EH		SVMI-CISCO-VSAT-1-A	

SVMI	Unit	Qty	S/N	(PN)	Name	License key
			SFOC174751LU		SVMI-CISCO-VSAT-1-B	
4-port Voice Interface Card - FXO	u	2	SFOC17463S33		SVMI-CISCO-VSAT-1-A	
			SFOC17468336		SVMI-CISCO-VSAT-1-B	
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK, including:	u	2	SFCZ175092LD		SVMI-CISCO-GBB-1	
			SFCZ175092LC		SVMI-CISCO-GBB-2	
DATA LICENCE	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	1	SFOC17427CJ3		SVMI-CISCO-GBB-1	
4-Port Async/Sync Serial WAN Interface Card	u	1	SFOC173628BS		SVMI-CISCO-GBB-1	
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	5				
2-port Voice Interface Card - E/M	u	2	SFOC174781XD		SVMI-CISCO-GBB-2	
			SFOC1747827X		SVMI-CISCO-GBB-2	
Two-port Voice Interface Card FXS	u	1	SFOC17440KDV		SVMI-CISCO-GBB-2	
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:52:3A			015C49D9C0A5629B8656B7CC7ED681FCEC154D0E035A7B2F45
			00:40:71:F0:52:22			011CA48B38A825E8DE00FAAE4E56E8589673A19B32B532E8EB
License OSPF	u	2				
Lic 8 PSK	u	2				
SkyNMSCD	u	0				
Lic TCP-A	u	2				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	CZJ34500K5			
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062215			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27´´ Samsung SyncMaster S27A550H	u	1	0293H4MDB01257			

SVMI	Unit	Qty	S/N	(PN)	Name	License key
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222951			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43225			
Eaton Rack	u	1	730-80344-00P			
WhatsUp Gold Distributed Remote 25 Devices	u	1				
Anitivirus	u	1				
SQL USER CAL USR CAL	u	1				
IP to serial	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 80W	u	2	TE5022339 ✓			
			TE5022348 ✓			
Tx 1+1 switching system	u	1	TE6410577 ✓			
Rx 1+1 switching system	u	1	TE6010444 ✓			
LNB	u	2	38N139102377			
			38N139102400			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others	Unit	Qty	S/N	(PN)	Name	License key
Horloge RT CP 09	u	1	138182			
GPS antenna	u	1	138386			
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001717			
NPORT	u	1	TADAE1011418			
SIGNALTEKII	u	1	15610106/02974			
	u	1	15110504/05116			
	u	1	15610407/01958			
	u	1	15110504/05285			
Multimeter	u	1	102442			
Souris	u	1	1343HS02S599			
Clavier	u	1				

Spare	Unit	Qty	S/N	(PN)	Name	License key
Spare						
Netgear	Unit	Qty	S/N	(PN)	Name	License key
NETGEAR SW F/E Stackable Managed Sw	u	2	39223C5N00378			
			39223C5U0036F			
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	2CH23A3W501B3			
Dataprobe RSS	Unit	Qty	S/N	(PN)	Name	License key
RSS-16 : RSS 16 Slot 4U Chassis, including:	u	2	115010200300024			
			115010200300011			
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	2	193008400000128			
			193008400000115			
IPC-16-R : Network Control Card - 16	u	2	134006500400093			
			134006500400080			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	3	111020200200889			
			111020200200890			
			111020200200891			
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	2	111020200200892			
			111020200200893			
AB-D25-R : D25 A/B Card	u	3	111020000100629			
			111020000100630			
AB-D25-R : D25 A/B Card	u	4	111020000100593			
			111020000100594			

Spare	Unit	Qty	S/N	(PN)	Name	License key
			111020000100643			
			111020000100667			
Cisco	Unit	Qty	S/N	(PN)	Name	License key
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	3	SFCZ175092L8			
			SFCZ175092KM			
			SFCZ175092LK			
Cisco 2911 UC Bundle, PVDM3-16, UC License PAK	u	1				
DATA license	u	3				
SRST-25	u	1				
2-Port Async/Sync Serial WAN Interface Card	u	4	SFOC17427CQP			
			SFOC17427CCS			
4-Port Async/Sync Serial HWIC	u	2	SFOC17506CG2			
			SFOC17405CTK			
8-Port Async HWIC	u	1	SFOC174673WU			
8-Port Async/Sync Serial HWIC, EIA-232	u	1	SFOC17446GYD			
Two-port Voice Interface Card - E and M	u	10	SFOC1747821Q			
			SFOC174781UF			
			SFOC18073ZCY			
			SF0C18073ZJL			
			SFOC1747823M			

Spare	Unit	Qty	S/N	(PN)	Name	License key
			SFOC17461BL9			
Two-Port Voice Interface Card - FXS and DID	u	2				
Four-Port Voice Interface Card - FXS and DID	u	1	SFOC1747523F			
			SFOC174751RP			
Four-port Voice Interface Card - FXO	u	1	SFOC17463S0V			
1 Port 2nd Gen Multiflex Trunk Voice/WAN Int. Card - T1/E1	u	1	SFOC17451Q66			
2 Port 2nd Gen Multiflex Trunk Voice/WAN Int. Card - T1/E1	u	1	SFOC17479P39			
EVM-HD-8FXS/DID	u	1	SFOC180475BH			
EM-HDA-3FXS/4FXO	u	1	SFOC17443E08			
RS 232 cab	u	17				
ND Satcom	Unit	Qty	S/N	(PN)	Name	License key
IDU 7000 master	u	1				
IDU 1070 19" NS + PS AC	u	2	00:40:71:F0:50:F0			
			00:40:71:F0:50:F6			
License OSPF	u	3				
Lic 8 PSK	u	3				
SkyNMSCD	u	0				
Lic TCP-A	u	3				
Equipment: Network Management System	Unit	Qty	S/N	(PN)	Name	License key

Spare	Unit	Qty	S/N	(PN)	Name	License key
HP ProLiant DL160 Gen8 Base - Server, including:	u	1				
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1				
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1	TADBB1062386			
HP Hard Disk 300Go 3.5 SAS 15000 tours/min.	u	2				
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1	0293H4MDB00709			
HP LaserJet Pro 400 M401dn /33ppm	u	1	VNH4222944			
Eaton Ellipse ECO 1200 FR USB	u	1	G030D43420			
Anitivirus	u	1				
Ip to seria	u	1				
Terrasat	Unit	Qty	S/N	(PN)	Name	License key
IBUC 40W	u	2	TE5022340			
			TE5022352			
IBUC 80W	u	1	TE5022355			
Tx 1+1 switching system	u	1	TE6410574			
Rx 1+1 switching system	u	1	TE6010431			
LNB	u	2	38N139102386			
			38N139102381			
Handheld Terminal	u	1	700-10544-0001			
Equipment: Ancillaries / Others						
Horloge RT CP 09	u	1	138176			
GPS antenna	u	1	138384			

Spare	Unit	Qty	S/N	(PN)	Name	License key
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical room and configuration)	u	1	PE02001120001826			
NPORT	u	1	TADAE1011113			
SIGNALTEKII	u	0				
	u	0				
	u	0				
	u	0				
Multimeter	u	0				
Souris	u	1				
Clavier	u	1				

APPENDIX D / APÉNDICE D

FACTORY ACCEPTANCE TEST / PRUEBAS DE ACEPTACIÓN EN FÁBRICA

Factory Acceptance Test

Reference :	**ICAO REQUEST FOR TENDER : ST-22501200**
File :	**FAT - NT 2022-2141168F rev D.doc**
Project :	**NEW TRANSPORTATION NETWORK OF THE REGIONAL AERONAUTICAL TELECOMMUNICATION NETWORK (REDDIG II)**
Portion:	**Factory Acceptance Test**

DISTRIBUTION					
COMPANY	**Intended for**	**Qty**	**COMPANY**	**Intended for**	**Qty**
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Index	**C**	**Signature**	
Date	**20/04/2014**		
Drafted by	**C.CHEVALLIER**		
Checked by	**I. HEBRARD**		
Approved by	**JO. KLOTZ**		

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D	05/05/2014	63	File modification	I HEBRARD

Adjunto a este documento FAT se presenta:
- Rack / serial (subrack numero de serie (Capitulo seccion 2)
- Anexo A Serialer
- Anexo B diagrama.
- Anexo C Observaciones sobre la FAT.

FACTORY ACCEPTANCE TEST 1

FILE : FAT - NT 2022-2141168F REV C.DOC 1

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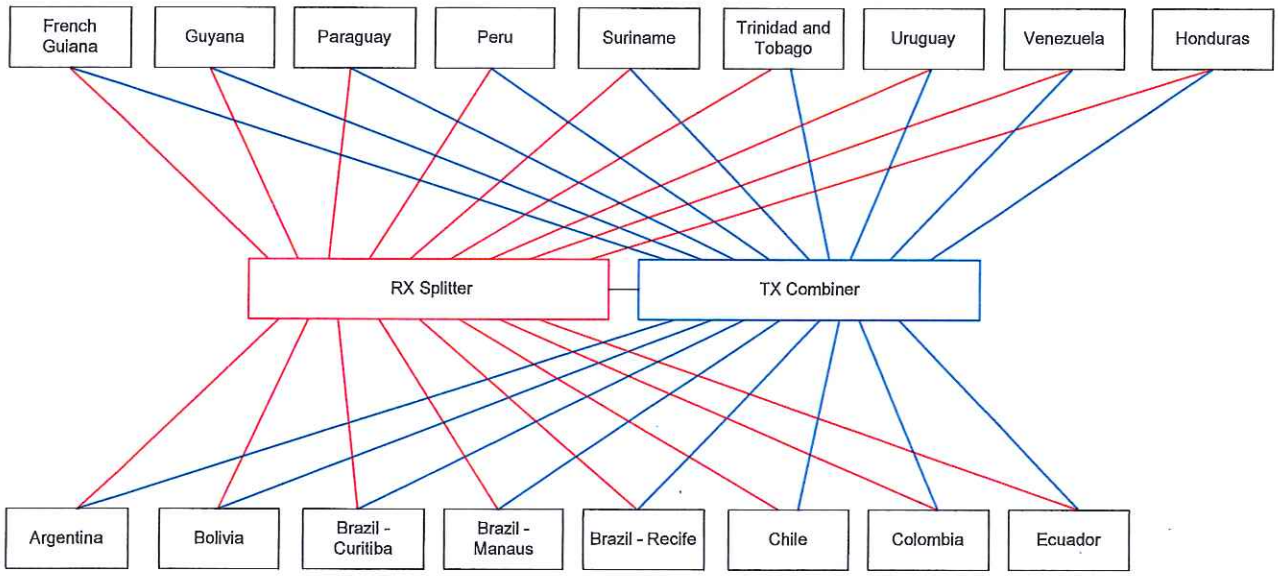
1 INTRODUCTION

This document presents the procedure for the Factory Acceptance Test of the REDDIG II network. The circuits that can be simulated will be tested during the FAT, as displayed in the cross matrix of this document. Not all the circuits will be tested, in order to respect FAT duration (one week), but they will be tested on a random base.
The stations are connected in a L-Band Loop (As described in the following drawing).



Tests will be processed as follows:

- Checking of the racks cabling and serial numbers
- Tests of communications links between the sites
- Tests of outdoor equipment capabilities (redundancy configuration).
- Tests of indoor equipment capabilities
- Tests of the monitoring system

The tests for outdoor and indoor equipment capabilities are to be done on a random sample in order to fit with the FAT duration.
For outdoor equipment, a set of equipment for one site will be tested.
For indoor equipment, the test will consist of testing one station to the others.

2 CABLING OF THE RACKS / SERIAL NUMBERS

- Check that the configuration of the racks are according to the drawings referenced below:

Ver Anexo

DESIGNATION	Number (fulfill on site)
Argentina	
Block diagram	
Rack layout	
Bolivia	
Block diagram	
Rack layout	
Brazil (Curitiba)	
Block diagram	
Rack layout	
Brazil (Manaus)	
Block diagram	
Rack layout	
Brazil (Recife)	
Block diagram	
Rack layout	
Chile	
Block diagram	
Rack layout	

Colombia
Block diagram
Rack layout
Ecuador
Block diagram
Rack layout
French Guiana
Block diagram
Rack layout
Guyana
Block diagram
Rack layout
Paraguay
Block diagram
Rack layout
Peru
Block diagram
Rack layout
Suriname
Block diagram
Rack layout
Trinidad and Tobago
Block diagram
Rack layout
Uruguay
Block diagram
Rack layout

Venezuela	
Block diagram	
Rack layout	
HONDURAS	
Block diagram	

Figure 1 - Plan list

- The delivery content and quantity will be checked and serial numbers for each single piece of equipment will be compared to the list that will be established **(full list delivered during the FAT, please see Annex 1 - SITES Serial number).**

Se revisaron los diagramas de conexión así como los seriales de los equipos, las comentarios se anexan en hojas aparte a este documento
Las revisión de los seriales se efectuó en el listado suministrado y las observaciones en los diagramas se realizaron en los diagramas de los racks de la RED16 II

3 OUTDOOR UNITS TESTS

3.1 TX SWITCH

La Luz

The IBUC (Intelligent Block Up Converter) are in a redundant configuration on every site. This test will validate the redundancy of the C-band power amplifiers.

On the demonstration IBUC system on the platform, check that there are no alarms this IBUC webpage. Disconnect one RF cable from the online IBUC and check that the standby transmit chain becomes active.

In order to test the switching is working both way, do the test for the other IBUC.

Test	Results (Ok/Nok)
IBUC A to B	OK
IBUC B to A	OK
Comments:	
La conmutación se realizó con exito	

Figure 2 - TX switch test

3.2 RX SWITCH

The LNBs (Low Noise Block down-converter) are redundant on every site. This test will validate the redundancy of the low noise amplifiers (LNB).

On the demonstration LNB RX 1+1 system on the platform, check that there are no alarms this LNB RX 1+1. Disconnect the cable from the online LNB and check that the standby chain becomes active.

Do the test for the other LNB.

Test	Results (Ok/Nok)
LNB A to B	Ok
LNB B to A	OK
Comments:	
La conmutación se efectuó con exito.	

Figure 3 - RX switch test

4 COMMUNICATION TESTS

The communication tests will be achieved on both VSAT chain, A and B.

4.1 RADAR AND ASTERIX

There are two types of RADAR:

- Serial
- IP based.

Prueba no efectuada

4.1.1 Serial RADAR

For serial RADAR, the bandwidth will be already assigned, as it corresponds to existing systems. Bisync will not be tested, as this protocol is old and not supported by testers.

The serial RADAR is used between Chile, Argentina, and Uruguay:

RADAR	Argentina	Uruguay
Argentina	---	2 (TX, RX)
Uruguay	2 (TX, RX)	---

RADAR - chain A	Argentina	Uruguay
Argentina	---	
Uruguay		---

RADAR - chain B	Argentina	Uruguay
Argentina	---	
Uruguay		---

Figure 4- Serial RADAR tests

Prueba no efectuada

4.1.2 IP based RADAR and Asterix

The IP based RADAR and Asterix is configured for the transport, but almost no bandwidth will be assigned, in order not to waist bandwidth. For Asterix, no additional bandwidth is required, but this service will grow with RADAR installation. Those services are both PAMA, IP, Multicast, and thus will be tested during the same test.

The test will consist in selecting two sites, properly configured with demonstration IP Multicast address, with sufficient bandwidth and multicast a IP flow. The flow multicasted will be a MP3 streaming data, as it is closer in term of bandwidth and packet size than a video. The streaming software is VLC.

The following table shows the RADAR/Asterix cross matrix. When "R" is written, there is only a RADAR connection. When "A" is written, there is only an Asterix connection.

Prueba no efectuada

RADAR/Asterix	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina		X	X	A		X					X				X		
Bolivia	X		X	X		X					X	X					
Brazil (Curitiba)	X	X									X				A		
Brazil (Manaus)	A	X					X		X	X		X	X			X	
Brazil (Recife)																	
Chile	X	X										X					
Colombia		-		X				X				X				X	
Ecuador							X					X					
French Guiana				X									X	A			
Guyana				X									X	A		X	
Paraguay	X	X	X														
Peru		X		X		X	X	X									
Suriname				X					X	X				X			
Trinidad and Tobago									A	A			A			X	
Uruguay	X		A														
Venezuela				X			X			X				X			
Tegucigalpa																	

Figure 5 - RADAR / Asterix cross matrix

RADAR/Asterix	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 6 - RADAR / Asterix test cross matrix – Chain A

RADAR/Asterix	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 7 - RADAR / Asterix test cross matrix – **Chain B**

4.2 VOICE COMMUNICATIONS GENERALITIES

Two dial plans are used in this network. Dial plan 1 is for ATS circuits, with a general prefix of "1", added based by translation rules directly on the dialled number (see Annex 2 for Ezeiza example). Same concept is used with Admin and maintenance with prefix "2".

For a complete site by site number overview, please refer to Annex 3 - Dial peer numbers.

4.3 ATS/DS CIRCUITS

All ATS/DS calls are auto-dialed. The communication is established after the user hangs the phone.

The test will consist of connecting a telephone on the desired line at the back of the rack, pick-up the phone make the call to the other end of the circuit.

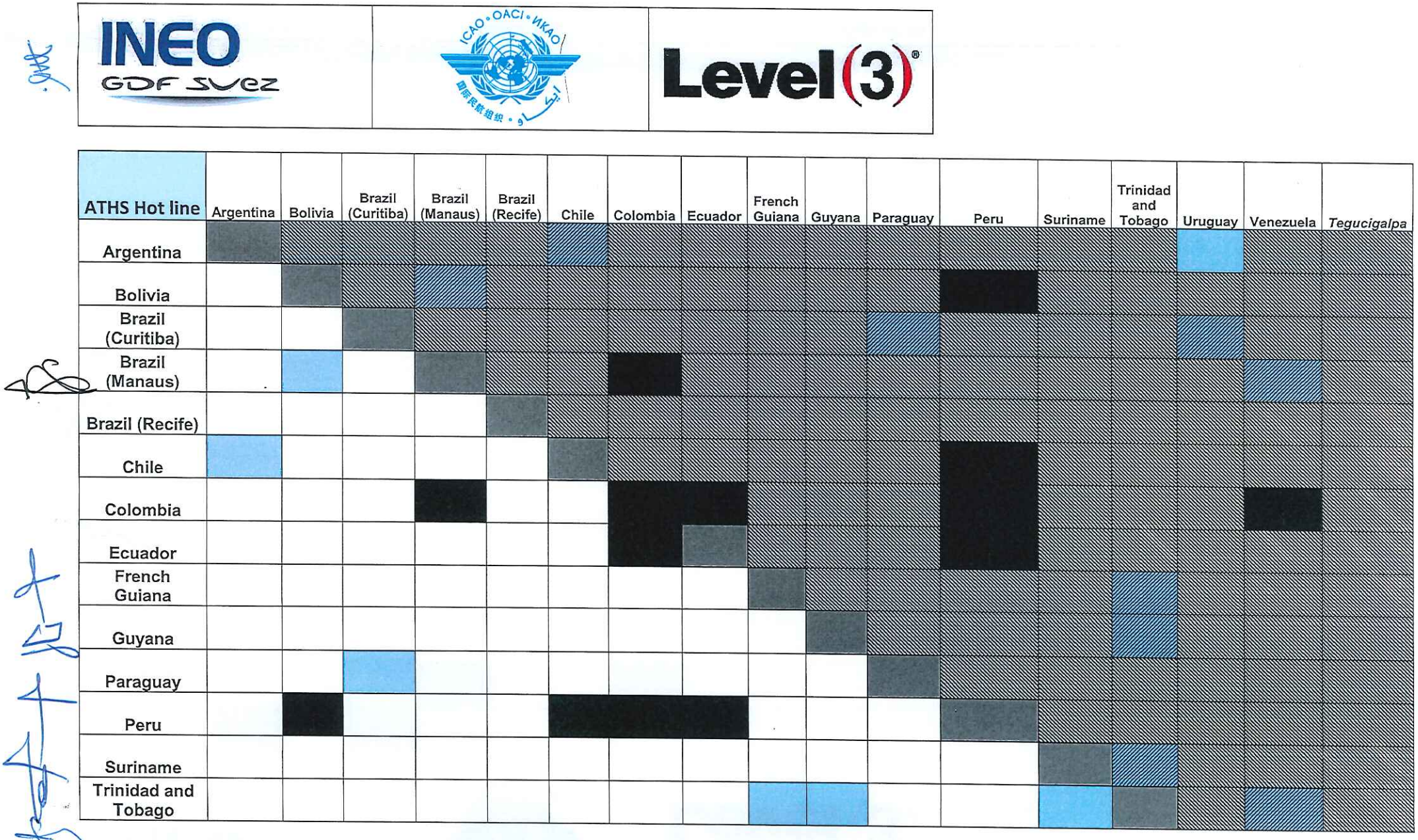
For E1 based circuits, to be connected to a VCS, this cannot be achieved nor simulated.

The black cells in the following matrix represent those cases.

The numbers auto dialed are the same as REDDIG I (990X), and are translated into the internal dial plan.

Se establecieron conexiones directas (Cinco Calientes) entre:
- Manaos - Ezeiza y Ezeiza Manaos
- Manaos La Paz y La Paz Manaos
- Ezeiza La Paz y La Paz Ezeiza

Se establecieron las pruebas con éxito.


ATHS Hot line
Argentina
Bolivia
Brazil (Curitiba)
Brazil (Manaus)
Brazil (Recife)
Chile
Colombia
Ecuador
French Guiana
Guyana
Paraguay
Peru
Suriname
Trinidad and Tobago
Uruguay
Venezuela
Tegucigalpa

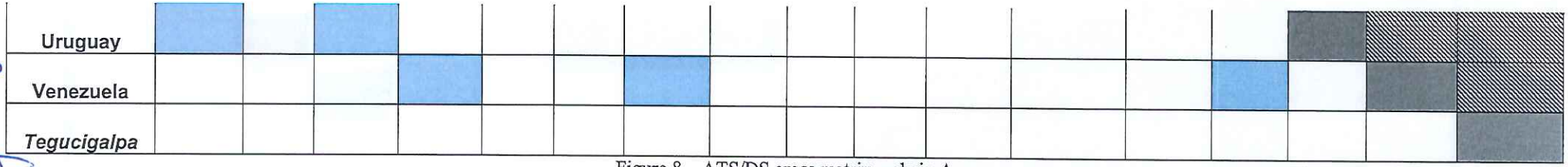


Figure 8 – ATS/DS cross matrix – chain A

ATHS Hot line	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	

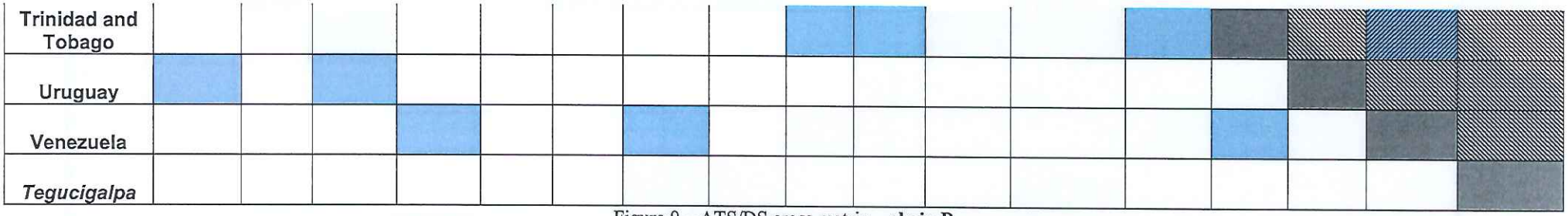


Figure 9 – ATS/DS cross matrix – **chain B**

4.4 ATS SWITCHED CIRCUITS

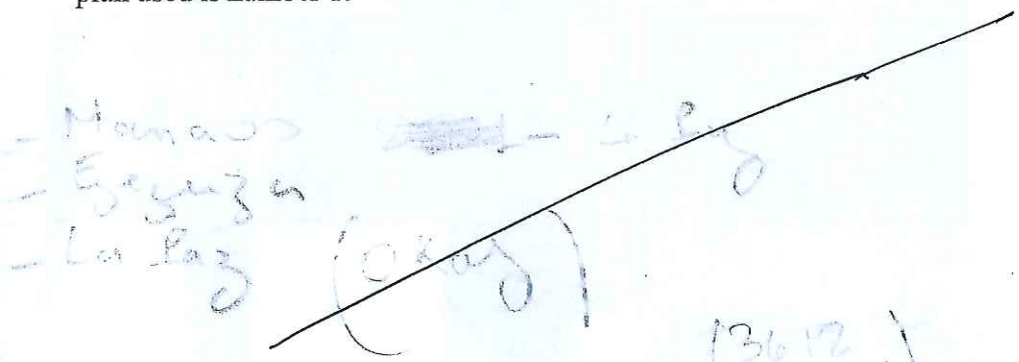
ATS switched calls are dialed. The communication is established after the user hangs up the phone and dials the remote dial number.

The test will consist of connecting a telephone on the desired line at the back of the rack, pickup the phone and dial a remote number in order to call the other end of the circuit. For E1 based circuits, connected to a VCS, this cannot be achieved nor simulated. The black cells in the following example represent this case.

The MEVA II interconnection cannot be simulated either, as we do not have any CX multiplexor.

The users will dial 4 digits in all the site except Argentina. Here "7" is used as a prefix digit.

The dial plan used is in Annex 2 - dial plan file. Updated version will be given at the FAT and if a modified version is required after the FAT it will be published. For the ATS service, the dial plan used is number 1.



Se simularon circuitos ATS conmutados entre Manaus, Ezeiza y La Paz usando el plan de numeración telefónica de la REDDIG II y todos los resultados de las pruebas fueron exitosos.

ATS switched	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	

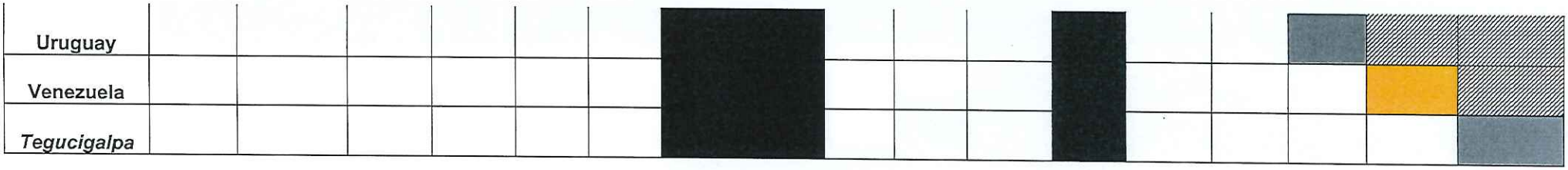
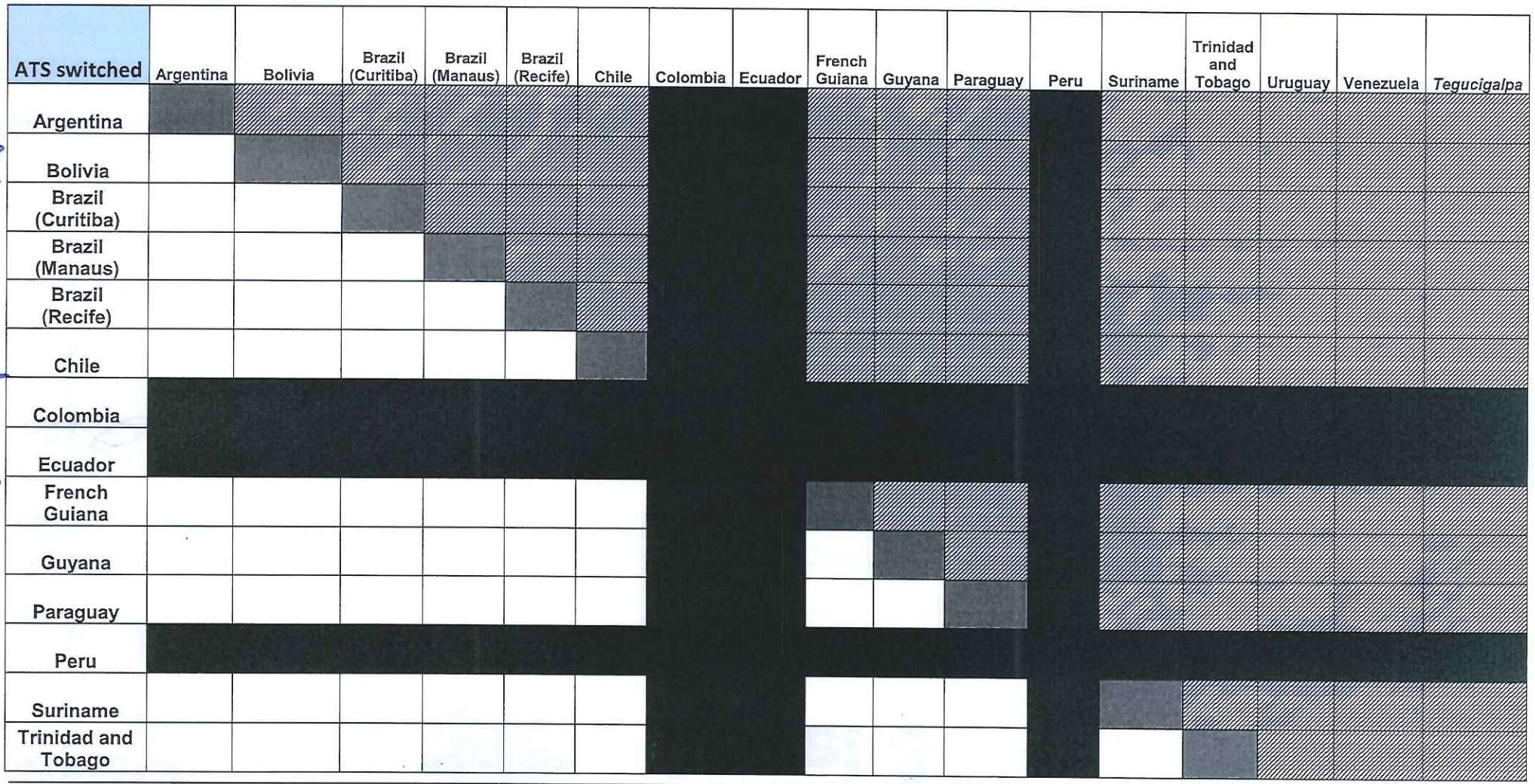


Figure 10 - ATS switched cross matrix – chain A


ATS switched
Argentina
Bolivia
Brazil (Curitiba)
Brazil (Manaus)
Brazil (Recife)
Chile
Colombia
Ecuador
French Guiana
Guyana
Paraguay
Peru
Suriname
Trinidad and Tobago
Uruguay
Venezuela
Tegucigalpa

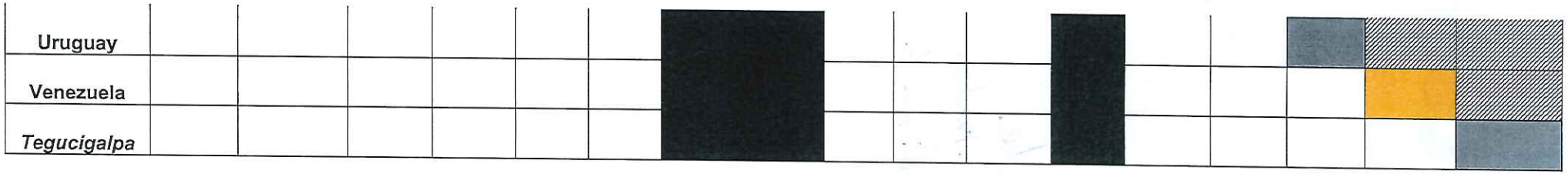


Figure 11 - ATS switched cross matrix – **chain B**

4.5 ADMINISTRATIVE VOICE

The administrative voice is a closed network, that is only able to call a remote administrative voice and the local ATS phone.

The test will consist in selecting a site and try several connections to a remote administrative voice and local ATS.

3601
2501

se realizarán pruebas de comunicaciones de voz conmutadas administrativas entre el nodo Reddy II simulado de

aeropuerto

Administrative	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	

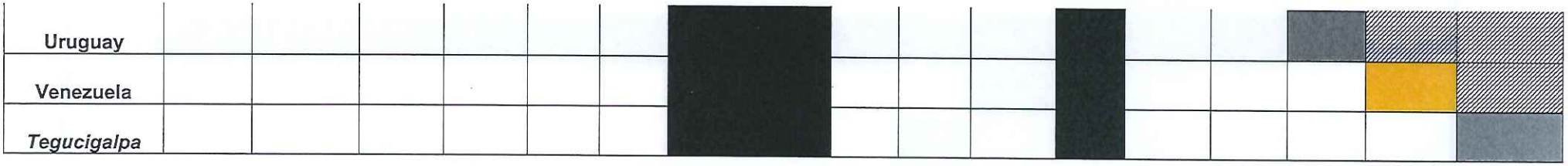


Figure 12 - Administrative cross matrix – chain A

Administrative	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	

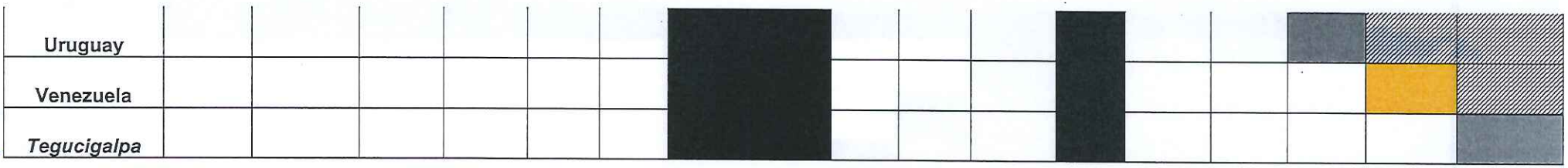


Figure 13 - Administrative cross matrix – **chain B**

4.6 TELECONFERENCE

Teleconference service will be achieved using Cisco's Communication Manager with 25 users license. The teleconference will be centralized from Manaus and Ezeiza. Those sites will be the only ones to have the 25 seats license. The other stations will be "clients" to this service, which means that a permanent dial number will be present for the organization of conference call (it will be different between Ezeiza and Manaus), and states will join the conference call dialing this number. The maximum number of participants for one DSP is 16.

Teleconference proposed numbers are:

- 1121 in Ezeiza
- 1111 in Manaus (OK)

* Faltó prueba

Establish a conference with at least 3 members.

Teleconference Manaus (1111)	OK/KO	Comment
Sites participating: se realizó teleconferencia con participación de tres nodos	OK	Las pruebas se realizaron con teléfonos analógicos.
Comments		

Figure 14 - Teleconference - chain A

Los teléfonos en que se hicieron las pruebas fueron analógicos y no en IP como está establecido en las especificaciones técnicas.
Faltó prueba con los teléfonos IP

Teleconference Ejuzgo 121	OK/KO	Comment
Sites participating: Se realizo teleconferencia con todos usuarios	NO OKy	No se realizo teleconferencia con el 121
Comments	No se estableció la teleconferencia con el 121 la misma no trabajó	

Figure 15 - Teleconference - chain B

4.7 AFTN CIRCUITS

The test will consist of connecting a PC to the AFTN port at the back of the rack (with the right speed and configuration 8/N/1) and close the serial interface at the other end of the circuit (loop). With the PC launch Hyperterminal, with local display of characters (to see what you write. With the PC launch the *winssd* program and start the BER test. Run the test for 5 minutes and check that there are only a few errors : (problem con BER

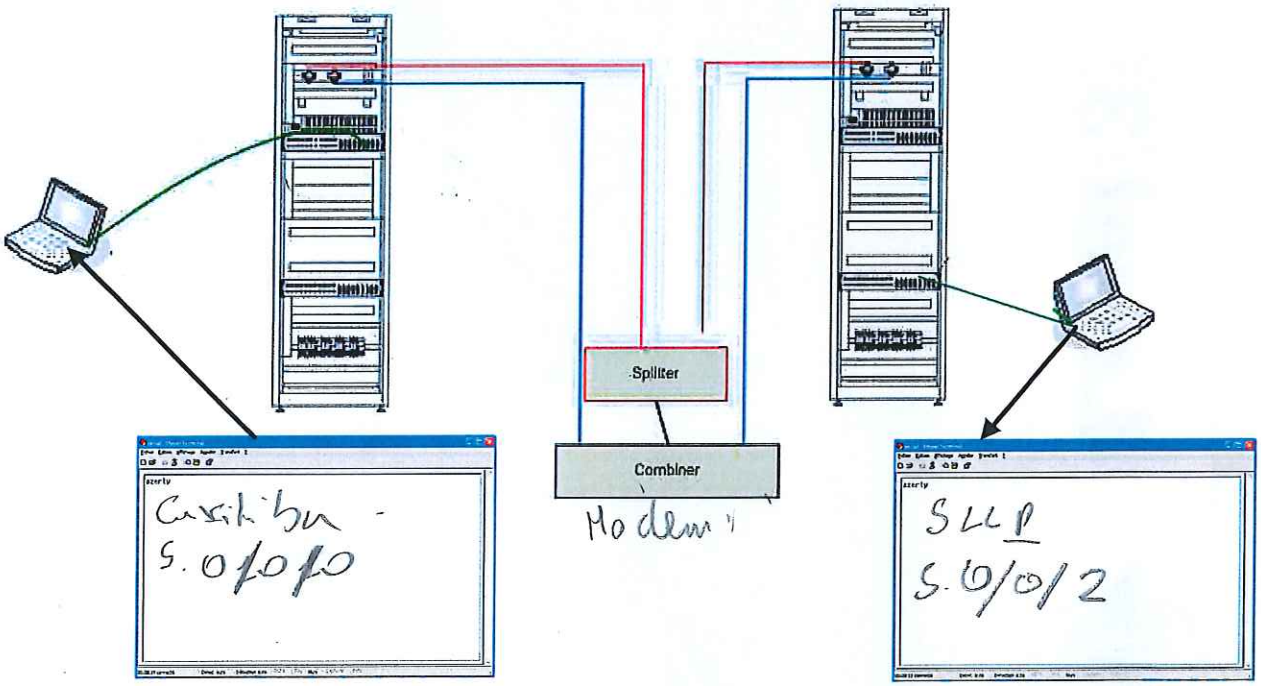


Figure 16 - AFTN test mounting

BSTUN has ben used in order to separate AFTN tunnels and deliver a performant redundant, which could not be achieved with UDP Tunnel.
The lines are configured with a dispatch character "Enter" (carrier return) and a dispatch timeout of 1s:

```
line 0/0/0 0/0/2
 modem InOut
 no activation-character
 dispatch-timeout 1000
 dispatch-character 13
 speed 2400
```

La pruebas AFTN trabajó sin problemas en ambos sentidos entre las localidades
– No se conectó la AFTN por cinco minutos

Those parameters can be reduced for a better reactivity.

No se realizó prueba BER

AFTN	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina		2	1			1					2	2 (3)			1		
Bolivia	2		1									1					
Brazil (Curitiba)	1	1									1				1		
Brazil (Manaus)							2		1	1		1	1				
Brazil (Recife)																1	
Chile	1											1					
Colombia				2				1				2				1	
Ecuador							1					1				1	
French Guiana				1												1	
Guyana				1									1	1		1	
Paraguay	2		1														
Peru	2 (3)	1		1		1	2	1								1	
Suriname				1						1						1	
Trinidad and Tobago										1						1	
Uruguay	1		1														
Venezuela					1		1	1	1	1		1	1	1			
Tegucigalpa																	

Figure 17 - AFTN interfaces

AFTN	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 18 - AFTN tests results – chain A

AFTN	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 19 - AFTN tests results – **chain B**

4.8 AMHS AND AIDC

AMHS service is TCP/IP based. To test it, two devices, a computer host and a server (being a computer or a device), will be used, and a TCP session will be opened and used.

A web page, a telnet session or a TFTP file transfer can be achieved to perform the test.

For AIDC, this service will be carried over AFTN, AMHS or directly in IP. As the AMHS system is IP based, then there are only few connections remaining.

A dedicated VLAN is used for each service (VLAN 100 for AMHS, and 110 for AIDC). Obviously, when the AIDC is transported over AMHS, it will be on the samed VLAN and IP plan.

- Prueba que se realizó simultaneo interconexión en tres locutorios: Argentina, Chile y Venezuela.
Se envió archivo (FTP) de Venezuela a Argentina. y Venezuela a chile, chile a Argentina. y Argentina chile.
- Por la prueba se evidencia la conexión para el AIDC. La transferencia del Archivo se realizo con exito

Región	Nro	Estado / Territorio	Red	Direcciones utilizables	Notacion Decimal	Notacion Binaria		
						Región	Estado / Territorio	Host's
SAM	1	Argentina	10.0.0.0 /19	Primera	10 . 0 . 0 . 1	00001010	00000000	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 31 . 254	00001010	00000000	11111 . 11111110
	2	Chile	10.0.32.0 /19	Primera	10 . 0 . 32 . 1	00001010	00000001	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 63 . 254	00001010	00000001	11111 . 11111110
	3	Brasil	10.0.64.0 /19	Primera	10 . 0 . 64 . 1	00001010	00000010	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 95 . 254	00001010	00000010	11111 . 11111110
	4	Uruguay	10.0.96.0 /19	Primera	10 . 0 . 96 . 1	00001010	00000011	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 127 . 254	00001010	00000011	11111 . 11111110
	5	Paraguay	10.0.128.0 /19	Primera	10 . 0 . 128 . 1	00001010	00000100	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 159 . 254	00001010	00000100	11111 . 11111110
	6	Bolivia	10.0.160.0 /19	Primera	10 . 0 . 160 . 1	00001010	00000101	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 191 . 254	00001010	00000101	11111 . 11111110
	7	Peru	10.0.192.0 /19	Primera	10 . 0 . 192 . 1	00001010	00000110	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 223 . 254	00001010	00000110	11111 . 11111110
	8	Ecuador	10.0.224.0 /19	Primera	10 . 0 . 224 . 1	00001010	00000111	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 255 . 254	00001010	00000111	11111 . 11111110
	9	Colombia	10.1.0.0 /19	Primera	10 . 1 . 0 . 1	00001010	00001000	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 31 . 254	00001010	00001000	11111 . 11111110
	10	Venezuela	10.1.32.0 /19	Primera	10 . 1 . 32 . 1	00001010	00001001	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 63 . 254	00001010	00001001	11111 . 11111110
	11	Guyana	10.1.64.0 /19	Primera	10 . 1 . 64 . 1	00001010	00001010	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 95 . 254	00001010	00001010	11111 . 11111110
	12	Surinam	10.1.96.0 /19	Primera	10 . 1 . 96 . 1	00001010	00001011	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 127 . 254	00001010	00001011	11111 . 11111110
	13	Guyana Francesa (France)	10.1.128.0 /19	Primera	10 . 1 . 128 . 1	00001010	00001100	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 159 . 254	00001010	00001100	11111 . 11111110
	20	Trinidad y Tobago	10.18.96.0 /19	Primera	10 . 18 . 96 . 1	00001010	00010011	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 18 . 127 . 254	00001010	00010011	11111 . 11111110
	-	VACANTE	10.1.160.0 /19	Primera	10 . 1 . 160 . 1	00001010	00001101	00000 . 00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 191 . 254	00001010	00001101	11111 . 11111110

Figure 20 - SAM AMHS IP Plan

The gateway and local IP used in REDDIG II systems are the last 4 IP directions.

AMHS	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina		1	1			1					1	1			1		
Bolivia	1		1									1					
Brazil (Curitiba)	1	1									1				1		
Brazil (Manaus)							1		1	1		1	1				
Brazil (Recife)																1	
Chile	1											1					
Colombia				1				1				1				1	
Ecuador							1					1				1	
French Guiana				1												1	
Guyana				1									1	1		1	
Paraguay	1		1														
Peru	1	1		1		1	1	1								1	
Suriname				1						1						1	
Trinidad and Tobago										1						1	
Uruguay	1		1														
Venezuela					1		1	1	1	1		1	1	1			
Tegucigalpa																	

Figure 21 - AMHS cross matrix

AMHS	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 22 - AMHS test cross matrix – chain A

AMHS	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 23 - AMHS test cross matrix – **chain B**

	Site network
Argentina	10.110.20.0
Bolivia	10.110.25.0
Brazil (Curitiba)	10.110.30.0
Brazil (Manaus)	10.110.36.0
Brazil (Recife)	10.110.38.0
Chile	10.110.40.0
Colombia	10.110.45.0
Ecuador	10.110.50.0
French Guiana	10.110.92.0
Guyana	10.110.90.0
Paraguay	10.110.55.0
Peru	10.110.60.0
Suriname	10.110.94.0
Trinidad and Tobago	10.110.91.0
Uruguay	10.110.65.0
Venezuela	10.110.80.0
Honduras	10.110.21.0

Figure 24 - AIDC IP Plan

The gateway used is .254, the LAN ip addresses are .101, .102 and .121.

AIDC	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina		X	X			X					X				X		
Bolivia	X		X	X		X					X	X					
Brazil (Curitiba)	X	X									X				X		
Brazil (Manaus)		X					X		X	X		X	X			X	
Brazil (Recife)									X						X		
Chile	X	X										X					
Colombia				X				X				X				X	
Ecuador							X					X					
French Guiana				X	X								X	X			
Guyana				X									X	X		X	
Paraguay	X	X	X														
Peru		X		X		X	X	X									
Suriname				X					X	X				X			
Trinidad and Tobago									X	X			X			X	
Uruguay	X		X		X												
Venezuela				X			X			X				X			
Tegucigalpa																	

Figure 25 - AIDC cross matrix

AIDC	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 26 - AIDC test cross matrix – chain A

AIDC	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 27 - AIDC test cross matrix – **chain B**

4.9 SAT LOOP BER TEST

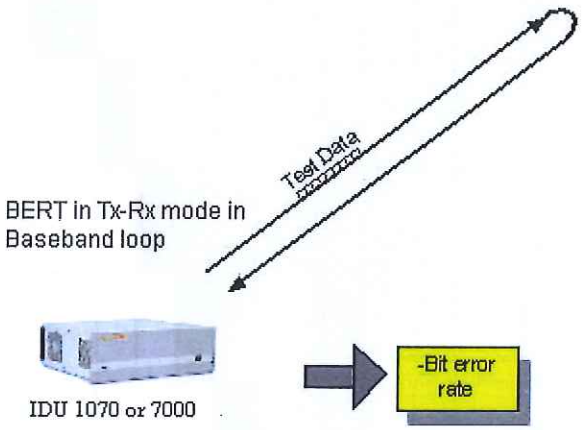


Figure 28 - Sat loop principle

SAT Loop BER Test					
Purpose: To check the correct operation of internal BERT test in IF-loop					
Test: Start the station using modem test mode "BERT in Tx-Rx mode". Let the BER Test run for 30 min, or more if the test can be achieved from one day to another. Observe the BER measurement by the station (with Line-up Manager). Write down the results in the record sheet below.					
Expected Results: Bit errors occur within expected small range.					
Results					
Serial No/IDU No	**E_B/N_O [dB]**	**BER**	**Time Interval**	**Pass**	**Fail**
Comments					
No se efectuó por prueba del BER					

Figure 29 - Sat loop test table

5 REDUNDANCY TESTS

The aim of this section of tests is to validate the redundant components. To improve the duration of the FAT, only one complete site and the master modems will be tested.

5.1 MASTER STATION FAILURE TEST

Master Station Failure Test	
Purpose: To check that the backup master takes over correctly the master role in case of master failure.	
Test: On the test network, set up IP data (ping) connections. Check which station is running as a master (telnet screen or LEDs on the FPG board). Reset the active master. Check on that the former backup master switches over to master operation. Check that the connections are still running.	
Expected Results: The backup master takes over the master role. The connections are still up. All IDUs are still operational in the network.	
Results	
Site A (Master)	**Site B (Backup master)**
Station # Egiz 01	Station # Manama
Stop the master operation.	Wait until the backup master takes over the master role.
Has the switch-over from the master to backup master been performed correctly?	Y/N/Comments Commutación se realizó sin problemas
Are there all IDUs still operational in the network?	Y/N/Comments
Are the voice connections still set up?	Y/N/Comments
Are the IP connections still up and running?	Y/N/Comments
Comments:	

Figure 30 - Master station failure test table

5.2 EQUIPMENT FAILURE

The system must be in primary mode (Skywan A and Cisco A active) for each test. Check that the NMS detects the failure and present it to the user ("Supervision" test).

5.2.1 Cisco failure

Switch off one of the active Cisco. After life-time timeout of the SLA, the system commutes into backup mode (transmission over chain B and gateway is set to chain B).

Verify that the gateway is now on the chain B and that the communications are re-established following this procedure Despues de 43 seg pasa a B

Previous verifications		Results	
Gateway check		Bascula en B	
RSS position		Pasa a B	
Service on chain B	**Test**	**OK**	**NOK**
RADAR	Multicast flow check with wireshark		
Supervision	Visualisation of the state on the NMS	OK	
AFTN	async hyperterminal test		
AMHS	ping	OK	
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments	No se rutgo problema Failover en AFTN		

Figure 31 - Cisco redundancy test table

La impresora AMHS entra en 46 seg.

Switch on the Cisco A.
Once its reboot is finished, go into normal mode verify that the services are functional .

Previous verifications		**Results**	
Gateway check		Run A	
RSS position		Run A	
Service on chain A	**Test**	**OK**	**NOK**
RADAR	Multicast flow check with wireshark	✱	
Supervision	Visualisation of the state on the NMS	OK	
AFTN	async hyperterminal test	✱	
AMHS	ping	OK	
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments	No se pudo probar AFTN mi radio		

Figure 32 - Cisco redundancy test table – going to normal

Write down the time needed to go back to normal operation to Chain A

5.2.2 SkyWAN failure

Switch off the active SkywWAN. After life-time timeout and OSPF updates, the system uses Skywan B (OSPF dynamic routing).
Verify that the communications are re-established following this procedure

Previous verifications		Results	
Gateway check			A
RSS position			A
Service on chain A	**Test**	**OK**	**NOK**
RADAR	Multicast flow check with wireshark	*	
Supervision	Visualisation of the state on the NMS	OK	
AFTN	async hyperterminal test	*	
AMHS	ping	*	
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments	* AFTN Radar, AFTN		

Figure 33 - Skywan redundancy test table

Switch on the equipment and go back to normal. Write down the time needed to all services to be re-established after going to normal SkyWAN A. Verify that the services are re-established with those tests:

Previous verifications		Results	
Gateway check			
RSS position			
Service on chain A	**Test**	**OK**	**NOK**
RADAR	Multicast flow check with wireshark		
Supervision	Visualisation of the state on the NMS		
AFTN	async hyperterminal test		
AMHS	ping		
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments	* AMHS Radar AFTN		

Figure 34 - Skywan redundancy test table – going to normal

5.2.3 IP switch failures

Switch off the IP switch of chain A. IP connections to this switch become naturally inactive. Verify that legacy and voice applications are re established, and that the system goes to B.

45 zgubiono

Previous verifications		Results	
Gateway check		Caiten B	
RSS position		Caiten B	
Service on chain B	**Test**	**OK**	**NOK**
RADAR (if not connected to switch A)	Multicast flow check with wireshark	*	
Supervision (if not connected to switch A)	Visualisation of the state on the NMS	OK	
AFTN	async hyperterminal test	*	
AMHS (if not connected to switch A)	ping	*	
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments	* NO se realizaron pruebas AMHS, ni Radar ni AFTN		

Figure 35 - IP switch A failure test

The IP switch B carries the NMS and the equipments of chain B, so the chain B is still working. Normalize the situation on chain A. Check that the services are fine.

1:20 (min.)

Previous verifications		Results	
Gateway check			
RSS position			
Service on chain A	**Test**	**OK**	**NOK**
RADAR	Multicast flow check with wireshark	*	
Supervision	Visualisation of the state on the NMS	OK	
AFTN	async hyperterminal test	*	
AMHS	ping	*	
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments	* NO se realizan pruebas Radar, AFTN y AMHS		

OK 7200 7250

Switch off the switch of chain B. The system remains on chain A. Check that the services are fine.

Previous verifications		**Results**	
Gateway check		Panne on A	
RSS position		Panne A	
Service on chain A	**Test**	**OK**	**NOK**
RADAR (if not connected to switch B)	Multicast flow check with wireshark		
AFTN	async hyperterminal test	OK	
AMHS (if not connected to switch B)	ping		
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments			

When switch B recovers, the system can switch to B, as the monitoring system (which takes the decision to switch from A to B) as no communication to chain A and can detect this situation as chain B failure.

5.2.4 RSS switch failures

Switch off the power supply. Verify that the RSS stood still and that the communications are not affected:

Previous verifications		**Results**	
Gateway check			
RSS position			
Service	**Test**	**OK**	**NOK**
RADAR	Multicast flow check with wireshark		
Supervision	Visualisation of the state on the NMS		
AFTN	async hyperterminal test		
AMHS	ping		
ATS	phone call	OK	
Maintenance	phone call	OK	
Comments			

Figure 36 - RSS failure test table

6 GROUND BACKBONE TEST

Some Level 3 routers are present for the tests (not for all the sites hence). Please consider one of the available sites to perform those tests.

La red terrestre se diseñó con Routers Cisco de la serie 1900 para focos de Benin, Uruguay, Venezuela y Argentina.

6.1 BACKUP TEST

Switch of both Skywan modems or disconnect their TX and RX cables.

After dynamic routing process and routing re-establishment (this process takes several minutes), the services are re-routed to the ground backbone.

Verify that the services are operational, inside the leased bandwidth and that the other sites remain on VSAT as main link (only the services associated to the "down" station goes through the ground backbone).

For each service, verify with wireshark that the DSCP fields are correct.

Previous verifications		**Results**	
Gateway check			
RSS position			
Service	**Test**	**OK**	**NOK**
RADAR	Multicast flow check with wireshark		
	DSCP field AF41		
Supervision	Visualisation of the state on the NMS		
AFTN	async hyperterminal test		
	DSCP field AF31		
AMHS	ping		
	DSCP field AF31		
ATS	phone call		
	DSCP field EF		
Maintenance	phone call	OK	
	DSCP field EF	OK	
Comments			

Figure 37 - Backup test

For each service, verify with wireshark that the DSCP fields are correct. Write down the time needed to all services to be re-routed to the ground backbone and in normal operation.

Se chequeó que la VOZ viene con el campo EF

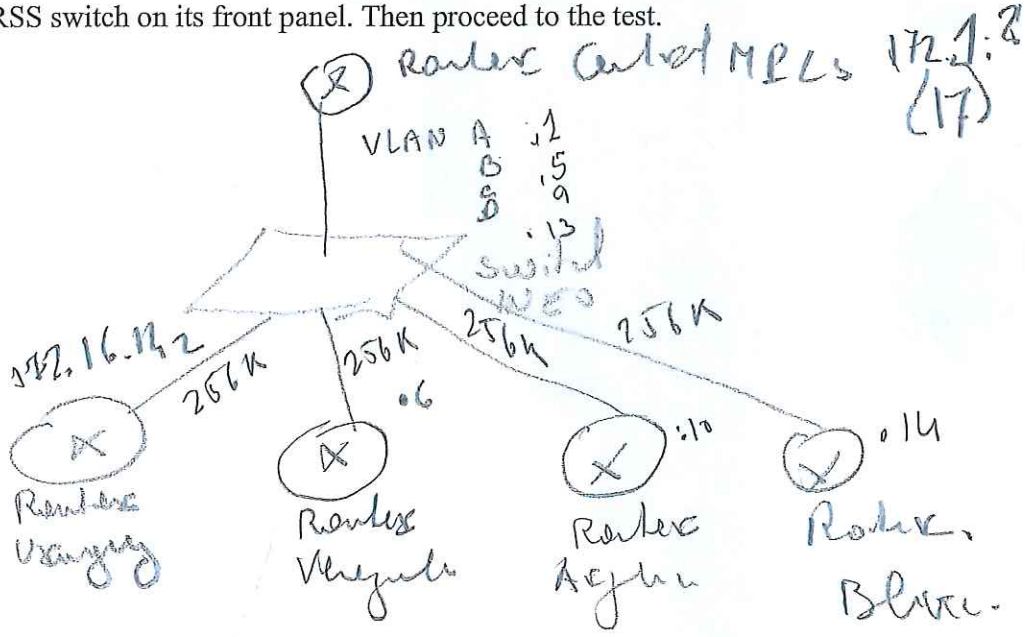
Service	DSCP	ToS
RADAR and ADS	AF41	PAMA
Asterix	AF41	PAMA
Voice	EF	DAMA real time dynamic
AFTN	AF31	DAMA
AMHS	AF31	DAMA
AIDC	AF31	DAMA
NMS	AF21	DAMA

6.2 DEDICATED LINKS

The dedicated links are AFTN and switched voice.

6.2.1 AFTN

The AFTN devices connected to the GBB router are the same as the VSAT backbone, but in restricted quantity. Only some of them are present. To activate those interfaces, press the "B" button of the RSS switch on its front panel. Then proceed to the test.



AFTN	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina		1	1			1					1	1			1		
Bolivia	1											1					
Brazil (Curitiba)	1														1		
Brazil (Manaus)							1			1		1					
Brazil (Recife)																1	
Chile	1																
Colombia				1				1				1				1	
Ecuador							1										
French Guiana																1	
Guyana				1													
Paraguay	1																
Peru	1	1		1			1										
Suriname																1	
Trinidad and Tobago																1	
Uruguay	1		1														
Venezuela					1		1		1				1	1			
Tegucigalpa																	

AFTN	Argentina	Bolivia	Brazil (Curitiba)	Brazil (Manaus)	Brazil (Recife)	Chile	Colombia	Ecuador	French Guiana	Guyana	Paraguay	Peru	Suriname	Trinidad and Tobago	Uruguay	Venezuela	*Tegucigalpa*
Argentina																	
Bolivia																	
Brazil (Curitiba)																	
Brazil (Manaus)																	
Brazil (Recife)																	
Chile																	
Colombia																	
Ecuador																	
French Guiana																	
Guyana																	
Paraguay																	
Peru																	
Suriname																	
Trinidad and Tobago																	
Uruguay																	
Venezuela																	
Tegucigalpa																	

6.2.2 Voice

The dialed switched voice of the GBB router are dedicated to the GBB. They are used as emergency interfaces.

Se realizó la prueba con éxito del circuito de voz conmutado a través del router del Backbone terrestre y trabajó con éxito. La prueba se realizó entre Argentina y Venezuela. Argentina llamó al número 08099 y Venezuela al 020 99

ATS switched	Dialled number
Argentina	2099
Bolivia	2599
Brazil (Curitiba)	3099
Brazil (Manaus)	3699
Brazil (Recife)	3899
Chile	4099
Colombia	4599
Ecuador	5099
French Guiana	9299
Guyana	9099
Paraguay	5599
Peru	6099
Suriname	9499
Trinidad and Tobago	9199
Uruguay	6599
Venezuela	08099
Tegucigalpa	NA

08099

020 99

A telephone must be manually connected to this interface.

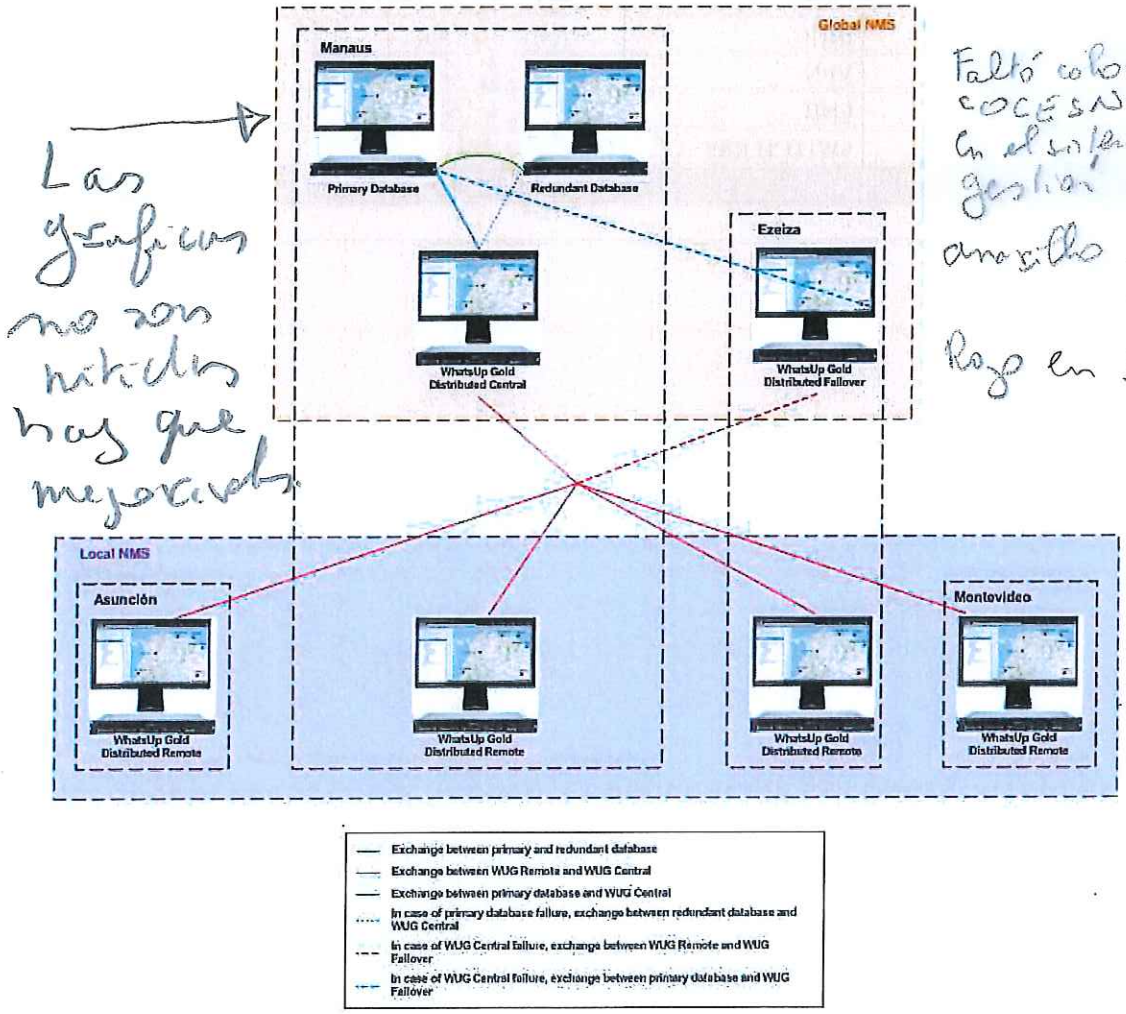
7 NETWORK MANAGEMENT STATIONS (NMS) TESTS

7.1 SUBMAP CONTENT CONFIGURATION

The purpose of this test is to check the submap configuration. Write down the time needed to the alarm to appear (RED) and the time needed to go to normal (GREEN)

Tests description:

From the thin client, connect to VSATWUG, and open WUG console, and within each submap check device color is green.
For each device, unplug ethernet cable to test alarm, device goes in with red color.



7.1.1 Ezeiza

Local NMS

Device name	Description	IP Address	Results		Alarm test	
			OK	NOK	OK	NOK
#Ezeiza						
Cisco A	CISCO	20.102.	OK			
Cisco B	CISCO	102.	OK			
Switch A	SWITCH	20.51	OK			
Switch B	SWITCH	20.52	OK			
Skywan A	SKYWAN	20.31	OK			
Skywan B	SKYWAN	20.32	OK			
Ground Backbone	CISCO	20.121	OK			
Ibuc A	IBUC	20.141			OK	
Ibuc B	IBUC	20.42			OK	
VPN	VPN	20.60	OK			
LNB	LNB	20.43	OK		OK	
Switch AB	SWITCH RSS	20.71	OK			
Comments:						

7.1.2 Manaus

Local NMS

Device name	Description	IP Address	Results		Alarm test	
			OK	NOK	OK	NOK
#Manaus						
Cisco A	CISCO					
Cisco B	CISCO					
Switch A	SWITCH					
Switch B	SWITCH					
Skywan A	SKYWAN					
Skywan B	SKYWAN					
Ground Backbone	CISCO					
Ibuc A	IBUC					
Ibuc B	IBUC					
VPN	VPN					
LNB	LNB					
Switch AB	SWITCH RSS					
Comments:						

7.1.3 Remote site 1

Select one remote site, and check that the equipments are correctly configured:
Local NMS

Device name	Description	IP Address	Results		Alarm test	
			OK	NOK	OK	NOK
#La Paz						
Cisco A	CISCO					
Cisco B	CISCO					
Switch A	SWITCH					
Switch B	SWITCH					
Skywan A	SKYWAN					
Skywan B	SKYWAN					
Ground Backbone	CISCO					
Ibuc A	IBUC					
Ibuc B	IBUC					
VPN	VPN					
LNB	LNB					
Switch AB	SWITCH RSS					
Comments:						

7.1.4 Remote site 2

Select another remote site, and check that the equipments are correctly configured:
Local NMS

Device name	Description	IP Address	Results		Alarm test	
			OK	NOK	OK	NOK
#La Paz						
Cisco A	CISCO					
Cisco B	CISCO					
Switch A	SWITCH					
Switch B	SWITCH					
Skywan A	SKYWAN					
Skywan B	SKYWAN					
Ground Backbone	CISCO					
Ibuc A	IBUC					
Ibuc B	IBUC					
VPN	VPN					
LNB	LNB					
Switch AB	SWITCH RSS					
Comments:						

7.2 NMS EQUIPMENT – SERIAL NUMBER

The purpose of this test is to check the presence and the serial number of each NMS equipment.

Tests description:

Check the serial number of the following equipment.

7.2.1 Ezeiza

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

Failover Server

Equipment	Test	Results	
		OK	NOK
Failover Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Storage NAS	Serial Number:		
Comments:			

7.2.2 La Paz

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.3 Manaus

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

Central NMS

Equipment	Test	Results	
		OK	NOK
Central Server	Serial Number:		
Screen for central server	Serial Number:		
Printer	Serial Number:		
Remote KVM for central server	Serial Number:		
750W UPS for central server	Serial Number:		
Database Server 1	Serial Number:		
Screen for Database server 1	Serial Number:		
Remote KVM for Database server 1	Serial Number:		
750W UPS for Database server 1	Serial Number:		
Database Server 2	Serial Number:		
Screen for Database server 2	Serial Number:		

Remote KVM for Database server 2	Serial Number:		
750W UPS for Database server 2	Serial Number:		
Storage NAS	Serial Number:		
Comments:			

7.2.4 Recife

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.5 Curitiba

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.6 Santiago

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		

Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.7 Bogota

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.8 Guayaquil

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.9 Georgetown

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		

750W UPS	Serial Number:		
Comments:			

7.2.10 Cayenne

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.11 Asuncion

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.12 Lima

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		

Comments:

7.2.13 Paramaribo

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.14 Piarco

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.2.15 Montevideo

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		

Comments:

7.2.16 Maiquetia

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	Serial Number:		
Screen	Serial Number:		
Printer	Serial Number:		
Remote KVM	Serial Number:		
750W UPS	Serial Number:		
Comments:			

7.3 IP ADDRESS

The purpose of this test is to check network configuration of NMS equipment.

Tests description:

Check IP address, Network Mask and Gateway for all NMS equipment.

7.3.1 Ezeiza

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	IP Address: 10.100.20.10 Mask: 255.255.255.0 Gateway: 100.100.20.254	OK	
Printer	IP Address: Mask: No existe Gateway: in this	-	-
Comments:			

Failover Server

Equipment	Test	Results	
		OK	NOK
Failover Server	IP Address: 10.100.20.11 Mask: 255.255.255.0 Gateway: 10.100.20.254	OK	
Comments:			

7.3.2 Manaus

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	IP Address: 10.100.36.10 Mask: 255.255.255.0/24 Gateway: 10.100.36.254	OK	
Printer	IP Address: Mask: NO		

	Gateway:		
Comments:			

Central Server

Equipment	**Test**	**Results**	
		OK	**NOK**
Central Server	IP Address: 10.100.36.11 Mask: 255.255.255.0 Gateway: 10.100.36.254	OK	
Database Server 1	IP Address: 10.100.36.12 Mask: 255.255.255.0/24 Gateway: (254)	OK	
Database Server 2	IP Address: 13 Mask: 24 Gateway: 254	OK	
Storage NAS	IP Address: Mask: (Pendiente) Gateway:		
Comments:			

7.3.3 Asuncion

Local NMS

Equipment	**Test**	**Results**	
		OK	**NOK**
NMS Server	IP Address: 10.100.55.10 Mask: 24 Gateway: 254	OK	
Printer	IP Address: Mask: Gateway: /	/	
Comments:			

7.3.4 Montevideo

Local NMS

Equipment	**Test**	**Results**	
		OK	**NOK**
NMS Server	IP Address: 10.100.56.10 Mask:	OK	

	Gateway:		
Printer	IP Address: Mask: Gateway:		
Comments:			
Impresora no se conectó			

7.4 ACTIVE MONITORING

Tests description: Manual observar el status de cable

Connect to WhatsUp Gold web console. Following test will be done:

- Skywan
  - Wan State: disconnecting wan cable,
  - TDMA Frame Synchronization: disconnecting cable
- CISCO
  - Fan status: same as state displayed in equipment console
  - Temperature state: same as state displayed in equipment console
  - Serial port operational status: same as state displayed in equipment console
  - Digital port operational status: same as state displayed in equipment console
  - Analogical voice card status: same as state displayed in equipment console
  - DSP state: same as state displayed in equipment console
- RSS Switch
  - Power supply status: same as state displayed in equipment console
- IBUC
  - Switch fault: same as state displayed in equipment console
  - Alarm temperature state: same as state displayed in equipment console
  - Input level high: same as state displayed in equipment console
  - Output level high: same as state displayed in equipment console
  - Input level low: disconnecting cable
  - Output level low: disconnecting cable
- LNB
  - Current Level High on A position: same as state displayed in equipment console
  - Current Level Low on A position: same as state displayed in equipment console
  - Voltage Level High on A position: same as state displayed in equipment console
  - Voltage Level Low on A position: same as state displayed in equipment console
  - Input Level Low on A position: disconnecting cable
  - Current Level High on B position: same as state displayed in equipment console
  - Current Level Low on B position: same as state displayed in equipment console
  - Voltage Level High on B position: same as state displayed in equipment console
  - Voltage Level Low on B position: same as state displayed in equipment console
  - Input Level Low on B position: disconnecting cable

On the device detail view, verify that information displayed is correct.

7.4.1 Site 1

Chose a site and proceed to the test: La Paz
Local NMS

Interface tested	Results	
	OK	NOK
Skywan A		
• Wan state in red		
• TDMA Frame synchronization in red		
Skywan B		
• Wan state in red		
CISCO A		
• FAN State same state as displayed		
• Temperature State same state as displayed		
• Serial port same state as displayed on console		
• Digital port same state as displayed on console		
• Analogical voice card status same state as displayed on console		
• DSP state same state as displayed		
CISCO B		
• FAN State same state as displayed		
• Temperature State same state as displayed		
• Serial port operational status in red		
• Digital port operational status in red		
• Analogical voice card status same state as displayed		
• DSP state same state as displayed		
RSS Switch		
• Power supply state same state as displayed		
IBUC A		
• Switch fault same state as displayed	✓	
• Alarm temperature same state as displayed		
• Input level high same state as displayed		
• Output level high same state as displayed		
• Input level low in red		
• Output level low in red		
IBUC B		
• Switch fault same state as displayed		
• Alarm temperature same state as displayed		
• Input level high same state as displayed		
• Output level high same state as displayed		

Interface tested	Results	
	OK	NOK
• Input level low in red		
• Output level low in red		
LNB		
• Current Level High (A) same state as displayed	OK	
• Current Level Low (A) same state as displayed		
• Voltage level high (A) same state as displayed		
• Voltage level low (A) same state as displayed		
• Input level low (A) in red		
• Current Level High (B) same state as displayed		
• Current Level Low (B) same state as displayed		
• Voltage level high (B) same state as displayed		
• Voltage level low (B) same state as displayed		
• Input level low (B) in red		
Comments:		

7.4.2 Site 2

Chose a site and proceed to the test:

Local NMS

Interface tested	Results	
	OK	NOK
Skywan A		
• Wan state in red		
• TDMA Frame synchronization in red		
Skywan B		
• Wan state in red		
CISCO A		
• FAN State same status same state as displayed on console		
• Temperature State same status same state as displayed on console		
• Serial port operational status same state as displayed on console		
• Digital port operational status same state as displayed on console		
• Analogical voice card status same state as displayed on console		
• DSP state same state as displayed		
CISCO B		

Interface tested	Results	
	OK	NOK
• FAN State same status same state as displayed on console		
• Temperature State same status same state as displayed on console		
• Serial port operational status same state as displayed on console		
• Digital port operational status same state as displayed on console		
• Analogical voice card status same state as displayed on console		
• DSP state same state as displayed		
RSS Switch		
• Power supply state same state as displayed		
IBUC A		
• Switch fault same state as displayed		
• Alarm temperature same state as displayed		
• Input level high same state as displayed		
• Output level high same state as displayed		
• Input level low in red		
• Output level low in red		
IBUC B		
• Switch fault same state as displayed		
• Alarm temperature same state as displayed		
• Input level high same state as displayed		
• Output level high same state as displayed		
• Input level low in red		
• Output level low in red		
LNB		
• Current Level High (A) same state as displayed		
• Current Level Low (A) same state as displayed		
• Voltage level high (A) same state as displayed		
• Voltage level low (A) same state as displayed		
• Input level low (A) in red		
• Current Level High (B) same state as displayed		
• Current Level Low (B) same state as displayed		
• Voltage level high (B) same state as displayed		
• Voltage level low (B) same state as displayed		
• Input level low (B) in red		
Comments:		

7.5 PERFORMANCE MONITOR

Tests description:

Connect to WhatsUp Gold web console. Following test will be done:

- Skywan
  - TDMA Frame Utilization Chanel 1 (on master station) OK
  - TDMA Frame Utilization Chanel 2 (on master station)
  - TDMA Frame Utilization Chanel 3 (on master station)
  - TDMA Es/No Own
- IBUC
  - Input Level -24.06
  - Output Level -9.9
  - Position of the waveguide switch (en A)
- LNB
  - Current on A position 2.28 Amps
  - Input Level on A position -11.2
  - Current on B position -24.8
  - Input Level on B position
- Switch A/B
  - Cards positions

On the device detail view, verify that information displayed is the same that the one displayed in equipment interface.

7.5.1 Ezeiza

Local NMS

Interface tested	Results	
	OK	NOK
Skywan A		
• TDMA Frame Utilization Chanel 1		
• TDMA Frame Utilization Chanel 2		
• TDMA Frame Utilization Chanel 3		
• TDMA Es/No own		
Skywan B		
• TDMA Es/No own		
IBUC A		
• Input Level		
• Output Level		
• Postion of the waveguide switch		

Interface tested	Results	
	OK	NOK
IBUC B		
• Input Level		
• Output Level		
• Postion of the waveguide switch		
LNB		
• Current Level High (A) same state as displayed		
• Current Level Low (A) same state as displayed		
• Voltage level high (A) same state as displayed		
• Voltage level low (A) same state as displayed		
• Input level low (A) in red		
• Current Level High (B) same state as displayed		
• Current Level Low (B) same state as displayed		
• Voltage level high (B) same state as displayed		
• Voltage level low (B) same state as displayed		
• Input level low (B) in red		
Switch A/B		
• Each card position		
Comments:		

7.5.2 Remote site 1

Local NMS

Interface tested	Results	
	OK	NOK
Skywan A		
• TDMA Es/No own		
Skywan B		
• TDMA Es/No own		
IBUC A		
• Input Level		
• Output Level		
• Postion of the waveguide switch		
IBUC B		
• Input Level		
• Output Level		
• Postion of the waveguide switch		
LNB		
• Current Level High (A) same state as displayed		
• Current Level Low (A) same state as displayed		
• Voltage level high (A) same state as displayed		
• Voltage level low (A) same state as displayed		
• Input level low (A) in red		
• Current Level High (B) same state as displayed		
• Current Level Low (B) same state as displayed		
• Voltage level high (B) same state as displayed		
• Voltage level low (B) same state as displayed		
• Input level low (B) in red		
Switch A/B		
• Each card position		
Comments:		

7.6 SWITCHING FROM CHAIN A TO CHAIN B

Tests description:

Connect to WhatsUp Gold web console. Be sure that Switch A/B is on chain A for all services. Following test will be done:

- Chain A Skywan
  - Ethernet state: disconnection Ethernet cable
  - Wan State: disconnecting wan cable,
  - TDMA Frame Synchronization: disconnecting cable
- Chain A CISCO
  - Ethernet state down: disconnection Ethernet cable
  - Power off
- Chain A IP Switch
  - Ethernet state down: disconnection Ethernet cable

For each state, verify that Switch A/B is switching from chain A to chain B and go back to chain manually after each test.

7.6.1 Site 1

Local NMS

Interface tested	Results OK	NOK
Skywan A		
• Ethernet state down		
• Wan state down		
• Synchronization state down for 2 minutes		
CISCO A		
• Ethernet state down		
• Power off		
Chain A IP Switch		
• Ethernet state down		
Comments:		

7.6.2 Site 2

Local NMS

Interface tested	Results	
	OK	NOK
Skywan A		
• Ethernet state down		
• Wan state down		
• Synchronization state down for 2 minutes		
CISCO A		
• Ethernet state down		
• Power off		
Chain A IP Switch		
• Ethernet state down		
Comments:		

7.7 USER ACCESS CONTROL

Tests description:
Test the right of users.

7.7.1 Ezeiza

Local NMS

Test	Results	
	OK	NOK
LocalUser		
• User **can** access device view, device details view and dashboard	OK	
• User **can't** add/remove device of monitors on device	OK	
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
GlobalUser		
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
LocalAdmin		
• User **can** access device view, device details view and dashboard	OK	
• User **can** add/remove device of monitors on device		
• User **can** add dashboard or modify dashboard		
• User **can** change password		
• User **can** add/remove user		
LocalAdmin		
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		

Test	Results	
	OK	NOK
• User **can't** add/remove user		
Comments:		

Failover Server

Test	Results	
	OK	NOK
LocalUser		
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
GlobalUser		
• User **can** access device view, device details view and dashboard	OK	
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
LocalAdmin		
• User **can't** access device view, device details view and dashboard	OK	
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
LocalAdmin		
• User **can** access device view, device details view and dashboard	OK	

Partly problem continue

Test	Results	
	OK	NOK
• User **can** add/remove device of monitors on device		
• User **can** add dashboard or modify dashboard		
• User **can** change password		
• User **can** add/remove user		
Comments:		

7.7.2 Manaus

Local NMS

Test	Results	
	OK	NOK
LocalUser		
• User **can** access device view, device details view and dashboard	OK	
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
GlobalUser		
• User **can't** access device view, device details view and dashboard	OK	
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
LocalAdmin		
• User **can** access device view, device details view and dashboard	OK	
• User **can** add/remove device of monitors on device		
• User **can** add dashboard or modify dashboard		
• User **can** change password		
• User **can** add/remove user		
LocalAdmin	OK	
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		

Test	Results	
	OK	NOK
Comments:		

Central Server

Test	Results	
	OK	NOK
LocalUser/		
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
GlobalUser		
• User **can** access device view, device details view and dashboard and export data	OK	
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
LocalAdmin		
• User ~~can't~~ can access device view, device details view and dashboard	OK	
• User ~~can't~~ can add/remove device of monitors on device		
• User ~~can't~~ can add dashboard or modify dashboard		
• User ~~can't~~ can change password		
• User ~~can't~~ can add/remove user		
~~Local~~Admin		
• User **can** access device view, device details view and dashboard	OK	
• User **can** add/remove device of monitors on device		
• User **can** add dashboard or modify dashboard		
• User **can** change password		

No

Test	Results	
	OK	NOK
• User **can** add/remove user		
Comments:		

7.7.3 Remote site 1

Local NMS

Test	Results	
	OK	NOK
LocalUser		
• User **can** access device view, device details view and dashboard	OK	
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
GlobalUser		
• User **can't** access device view, device details view and dashboard	OK	
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
LocalAdmin		
• User **can** access device view, device details view and dashboard	Ok	
• User **can** add/remove device of monitors on device		
• User **can** add dashboard or modify dashboard		
• User **can** change password		
• User **can** add/remove user		
~~Local~~Admin	OK	
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		

Test	Results	
	OK	NOK
• User ~~can't~~ add dashboard or modify dashboard		
• User ~~can't~~ change password		
• User ~~can't~~ add/remove user		
Comments:		

7.7.4 Remote site 2

Local NMS

Test	Results	
	OK	NOK
LocalUser		
• User **can** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
GlobalUser		
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
LocalAdmin		
• User **can** access device view, device details view and dashboard		
• User **can** add/remove device of monitors on device		
• User **can** add dashboard or modify dashboard		
• User **can** change password		
• User **can** add/remove user		
LocalAdmin		

Test	Results	
	OK	NOK
• User **can't** access device view, device details view and dashboard		
• User **can't** add/remove device of monitors on device		
• User **can't** add dashboard or modify dashboard		
• User **can't** change password		
• User **can't** add/remove user		
Comments:		

7.8 CENTRAL SERVER

Tests description:

Test information displayed in Central server (Manaus).

Verify that all equipment and information are available in central server NMS and that the states or values displayed are the same that in each local NMS.

Test	Results	
	OK	NOK
#Ezeiza	OK	
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Manaus	OK	
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Remote site 1 CSCEL		
• Cisco A	OK	
• Cisco B	OK	
• Switch A	OK	
• Switch B	OK	
• Skywan A	OK	

Test	Results	
	OK	NOK
• Skywan B	OK	
• Ground Backbone	–	
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Remote site 2 - (La Paz)	OK	
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
Comments:		

7.9 FAILOVER SERVER

Tests description:

Test information displayed in Failover server (Ezeiza).

Disconnect the central server of the network. Verify that all equipment and information are available in central server NMS and that the states or values displayed are the same that in each local NMS.

Test	Results	
	OK	NOK
#Ezeiza		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Manaus		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Remote site 1 (Paraná)		
• Cisco A	OK	
• Cisco B		
• Switch A		

Test	Results	
	OK	NOK
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Remote site 2		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
Comments:		

No se actualiza la información del estado de alarma de los esturiles.

No funcionan

7.10 DATABASE

7.10.1 Database redundancy

Disconnect the database server 1 from the network. Verify that all equipment and information are still available in central server NMS.

Test	Results	
	OK	NOK
Database redundancy Server 2		X
Comments:		
No apreció la interrupción		

Connect the database server 1 on the network and wait 10 minutes.
Then disconnect the database server 2 from the network. Verify that all equipment and information are still available in central server NMS.

Test	Results	
	OK	NOK
Database redundancy Server 1		X
Comments:		

Remove one hard disk (hot swap) of the NAS and observe the operation of the NMS
Write down the time needed to wait for reinstall de same hard disk.

Reinstall the hard disk removed and observe the operation of the NMS
Write down the time needed to NMS – NAS going to normal.

7.10.2 Database backup

Verify that a database backup is available on NAS storage and that the backup file has been modified today or yesterday (depending of the time when the database backup is done).

Test	Results	
	OK	NOK
Database backup	OK	
Comments:		

7.11 TEST OF CONNECTION THROUGH SERIAL PORT

Tests description:

Test the connection to equipment native console through serial port.

Local NMS

Test	Results	
	OK	NOK
#Ezeiza		
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
#Manaus		
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		

Test	Results	
	OK	NOK
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
#~~Asuncion~~ Sarting?		
• Cisco A	OK	
• Cisco B	OK	
• Switch A	OK	
• Switch B	OK	
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB	OK	
#Montevideo		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
Comments:		
OK		

Central Server

Use terminal services to connect to local NMS and test the connection to equipment native console through serial port.

Test	Results	
	OK	NOK
#Ezeiza		

Test	Results	
	OK	NOK
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
#Manaus		
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
#Asuncion		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
#Montevideo		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		

Test	Results	
	OK	NOK
• Switch AB		
Comments:		
Considerou que com uma prueba fue suficiente		

Failover Server

Use terminal services to connect to local NMS and test the connection to equipment native console through serial port.

Test	Results	
	OK	NOK
#Ezeiza		
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
#Manaus		
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		

Test	Results	
	OK	NOK
• Ground Backbone		
• Switch AB		
#Asuncion		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
#Montevideo		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
Comments:		

8 LIST OF PARTICIPANTS

16-5-2014

ENTERPRISE	NAME	RESPONSABILITY	SIGNATURE
INEO	HEBRARD	Project Manager	
ICAO	Smarrelli Onofrio	Administración REDDIG	
ARGENTINA	OMAR GOUARNALUSSE	JEFE DEPARTAMENTO PROYECTOS - DGCTA	
Argentina	Gustavo A. Chiri	Jefe Departamento Planificación - DGCTA	
PERU	JOSE LUIS PAREDES D.	coord. PROY. RESAT	
Paraguay	Aldo Omar Pereira	Jefe Sección Radiocomunicaciones DINAC	
BRAZIL	FRANCISCO ALMEIDA DA SILVA	JEFE DIVISIÓN DE COORDINACIÓN TECNICA	
ICAO	LUIS ALEJOS	Administrador REDDIG	

Aceptamos la FAT con las observaciones indicadas en este documento y los anexos correspondientes. Las cuales deberan ser resueltas en su totalidad por el contratista y representaran condiciones necesarias para la aceptación de las pruebas en sitio (RESAT)

FAT

ACTUALIZACIÓN NOMBRE Y DIRECCIÓN PARA ENVIO DE EQUIPOS Y REQUERIMIENTOS REQUERIDOS PARA LOS TRÁMITES ADUANEROS

UPDATE OF NAME AND ADDRESS FOR THE SHIPPING OF EQUIPMENT AND REQUIREMENTS FOR CUSTOMS CLEARANCE

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
1. Argentina Datos ratificados mediante Nota ANAC N° 336/2014 del 14/5/14 Data ratified through Letter ANAC N° 336/2014 dated 14/5/14	FUERZA AEREA ARGENTINA	PEDRO ZANNI 250 C1104AXJ CIUDAD AUTONOMA DE BUENOS AIRES ARGENTINA CONTRATO OACI 22501200	Para minimizar los tiempos de desaduanaje, necesitamos (en la secuencia temporal indicada): a) Lo antes posible, *los números de parte*, de acuerdo a como se desglosará el embarque. b) Antes del embarque efectivo, *por email*, los documentos requeridos en 9.9 del contrato, y con el *ship to* indicado más abajo. Asimismo, deberá indicar los datos de la compañia local donde retirar la guía de carga aérea original. c) Al embarque definitivo, la documentación requerida en el párrafo 9.9 del contrato, donde el "ship to" debe decir: FUERZA AEREA ARGENTINA PEDRO ZANNI 250 C1104AXJ CIUDAD AUTONOMA DE BUENOS AIRES, ARGENTINA CONTRATO OACI 2250120 ---------- *To minimize the periods of time for the custosm clearance, we need (in the indicated temporal sequence:* *a) As soon as possible, the part numbers, according to the shipment breakdown.* *b) Before the actual shipment , by e-mail, the documents required in 9.9 of the contract, and with the "ship to" indicated below. Likewise, should indicate the data of the local company where to pick up the original airway bill.* *c) Re. the definite shipment, the required documentation in paragraph 9.9 of the contract, where the "ship to" should say:* *FUERZA AEREA ARGENTINA* *PEDRO ZANNI 250* *C1104AXJ CIUDAD AUTONOMA DE BUENOS AIRES, ARGENTINA* *ICAO CONTRACT 2250120*
2. Bolivia	Cnl DAEN Raul Velasco Ramos DIRECTOR GENERAL	Calle Reyes Oriz N° 74 Esp. Federico Suazo Edif. FEDEPETROL	1) La documentacion de la REDDIG II se debe remitr a nombre de:

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
	EJECUTIVO AASANA	La Paz -Bolivia	Cnl DAEN Raul Velasco Ramos DIRECTOR GENERAL EJECUTIVO AASANA Calle Reyes Oriz N° 74 Esp. Federico Suazo Edif. FEDEPETROL La Paz –Bolivia 2) El equipamiento se debe enviar a: ADUANA LA PAZ de AEROPUERTO INTERNACIONAL EL ALTO. 3) Para los trámites de desaduanización, requerimos factura comercial (original) y el Packing list. ---------- *REDDIG II documentation should be sent in the name of:* *Cnl DAEN Raul Velasco Ramos* *DIRECTOR GENERAL* *EJECUTIVO AASANA* *Calle Reyes Oriz N° 74 Esp.* *Federico Suazo Edif.* *FEDEPETROL* *La Paz –Bolivia* *The shipment should be sent to:* *ADUANA LA PAZ de* *AEROPUERTO INTERNACIONAL EL ALTO.* *For the customs clearance arrangements, we need a commercial invoice (original) and packing list.*
3. Brasil/Brazil Solicitud de enmienda mediante MSJ N° 097/CERNAI/2014 Ítem 6) corregido *Request of amendment through MSJ Nª 097/cernai/2014* *Item 6) amended*	Comando da Aeronáutica - DECEA. Departamento de Controle do Espaço Aéreo	Av. General Justo 160, Centro, Rio de Janeiro, Brasil, CEP 20021-130 e CNPJ 00.394.429/0048-74.	**Invoice, Packing List e Conhecimento de Embarque (AWB ou BL).** 1) Estes documentos deverão ser encaminhados para nossa **Análise prévia (CISCEA), e somente após a nossa autorização, o embarque deve ocorrer.** (IMPORTANTE) 2) Na Invoice (Fatura), deverão conter os seguintes dados: - Nome e endereço do Exportador - Nome e endereço do Fabricante Nome e endereço do Importador: Comando da Aeronáutica - DECEA. Departamento de Controle do Espaço Aéreo, Av. General Justo 160, Centro, Rio de Janeiro, Brasil, CEP 20021-130 e

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			CNPJ 00.394.429/0048-74. - Nº do Contrato - Incoterm - Dados dos equipamentos: Descrição (ver OBS abaixo), Part Number, Quantidade, Serial Number (se houver), valor unitário e total , peso liquido e classificação tarifária do país exportador. - Dados de embalagem: Tipo, quantidade e dimensões das caixas e peso bruto total. - Aeroporto ou Porto de Destino - Condições de pagamento. OBS: Deverá ser listado o fornecimento como definido em contrato e seu respectivo preço. Ou lista-se como fornecimento maior (o todo) ou lista-se como sobressalentes. Exemplos de fornecimento maior: Radar de Uso Aeronáutico, Estação de Telecomunicação, Sistema de Inspeção em Vôo, Sistema de Comunicação Terra/Ar, Nova Rede Regional de Telecomunicação Aeronáutica (REDDIG II), etc. (IMPORTANTE) 3) Packing List - É o Romaneio da carga. Deverá conter todos os componentes do fornecimento maior, com suas respectivas descrições, PN, Qtde, SN e o nº da caixa onde estão embalados. - No caso de uma Invoice com sobressalentes, o Packing List deverá repetir todos os itens, e identificar em que caixa se encontram. 4) Primeiramente, o exportador deverá encaminhar a Invoice e Packing List para análise. Somente depois de aprovados, deverá encaminhar o AWB ou BL. (IMPORTANTE) 5) Conhecimento de Embarque (AWB - Air Way Bill ou BL - Bill of Lading)

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			- Emitido pela companhia aérea ou marítima ou pelo agente de carga. Contém os dados do embarque (migrados da Invoice/Packing List). ~~6) Despesas na Importação~~ ~~- Taxa de Utilização do SISCOMEX (valor mínimo de R$ 214,50 a ser paga via SIAFI pelo DECEA quando do Registro da Declaração de Importação)~~ ~~- Taxas administrativas para liberação dos conhecimentos de embarque originais no Brasil (INEO)~~ ~~- Quando Importação Marítima, armazenagem no Porto (INEO)~~ **ítem 6 –** las tasas administrativas para liberación de los conocimientos de embarque son de responsabilidad de la Administración brasileña – DECEA. Además, el responsable por los asuntos REDDIG en el Subdepartamento Técnico (SDTE) del DECEA es el Cel Esp Com FRANCISCO ALMEIDA DA SILVA, correo dcte@decea.gov.br y teléfono (55 21) 2101-6230. 7) Caberá ao Exportador utilizar madeira tratada em suas embalagens (preferencialmente com o carimbo explícito em suas caixas: HT - Heat Treatment (Fumigacão). 8) Responsáveis pelo desembaraço alfandegário Regio Marcos de Abreu Cel R1 marcosabreu@ciscea.gov.br --- ***Invoice, packing list and Bill of Lading (AWB or BL).*** *1) These documents must be sent to us for a* ***previous revision (CISCEA), and only after our authorization, the shipment will be made*** *(IMPORTANT).* *2)The invoice must contain the following data :*

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			- Name and adddress of exporter *- Name and addresss of manufacturer* *Name and address of Importer : Comando da Aeronáutica - DECEA. Departamento de Controle do Espaço Aéreo, Av. General Justo 160, Centro, Rio de Janeiro, Brasil, CEP 20021-130 e CNPJ 00.394.429/0048-74. (IMPORTANT)* *- Nº of Contract* *- Incoterm* *- Equipment data : Description (see note below), part number, Quantity, Serial Number (if any), unit and total value, liquid weight and tariff classification of the exporting country* *- Packing data: type, quantity and boxes' dimensions and gross weight.* *- Airport or port of destination* *- Terms of payment.* *NOTE: The supply should be listed as defined in the contract with its respective price, or listed as a greater supply (the whole) or listed as parts. Examples of higher supply: Radar of Aeronautical use, Telecommunication Station, Flight Inspection System, Earth/Air Communication System, New Regional Aeronautical Telecommunication Network (REDDIG II), etc. (IMPORTANT)* *3) Packing list* *It should contain all the components of the bigger supply, with their descriptions, PN, Qty, SN and the number of the box where they are packaged.* *- In case of an Invoice with parts, Packing List must repeat all the items, and identify in which case they are.* *4) First, the exporter must submit the Invoice and Packing List for analysis. Only after approval, shall*

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			send the AWB or BL. (IMPORTANT) *5) Bill of Lading (AWB-Air Way Bill or BL – Bill of Lading)* *- Issued by the airline or shipping company or he cargo agent. Contains shipment data (migrated from the Invoice/Packing List)* ***item 6** – the administrative charges rate for clearance of the bills of lading are of responsibility of the Brazilian Administration-DECEA. In addition, the person responsible for the REDDIG issues in the DECEA's Technical Sub-Department (SDTE) is Cel Esp Com FRANCISCO ALMEIDA DA SILVA, e-mail: dcte@decea.gov.br, and telephone (55 21) 2101-6230.* *7) The exporter will have to use treated wood in their containers (preferably with the explicit stamp on their boxes: HT - Heat Treatment (fumigation).* *8) Responsible for customs clearance* *Regio Marcos de Abreu Cel R1* *marcosabreu@ciscea.gov.br*
4. Chile Datos ratificados mediante carta DGAC N° 04/3/311/3251 del 22/5/14 *Data ratified through Letter DGAC N° 04/3/311/3251 dated 22/5/14*	Dirección General de Aeronáutica Civil Atención: Lorena Castillo E-Mail: lcastillo@dgac.gob.cl Fono (562) 24392712	Avda. Miguel Claro 1314 Providencia - Santiago Chile	1. Las mercancías deben ser embarcadas por el proveedor con flete prepaid (flete prepagado) consignadas a: Dirección General de Aeronáutica Civil Avda. Miguel Claro 1314 Providencia - Santiago Chile Atención: Lorena Castillo E-Mail: lcastillo@dgac.gob.cl Fono (562) 24392712 2. Una vez efectuado el embarque enviar por correo electrónico (lcastillo@dgac.gob.cl) los documentos de embarque (Air Way Bill, factura, packing List y póliza de seguro)

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			3. Cuando la carga se encuentra en el país, y se disponga de los documentos de embarque originales, la DGAC, en conjunto con el Agente de Aduana, con el cual mantenemos contrato, procede a la tramitación aduanera para liberar la mercancía desde Aduana, previa cancelación del IVA importación. ---------- *1. The merchandise should be shipped by the supplier with prepaid freight consigned to:* *Dirección General de Aeronáutica Civil* *Avda. Miguel Claro 1314* *Providencia - Santiago* *Chile* *Att: Lorena Castillo* *E-Mail: lcastillo@dgac.gob.cl* *Phone (562) 24392712* *Once the shipment is made, please send the documents by e-mail (lcastillo@dgac.gob.cl) the shipping documents (Air Way Bill, Invoice, Packing List, and Insurance Policy .* *3. When the cargo arrives in the country, and the original shipping documents are available, DGAC together with the Customs Agent, with which we maintain a contract, will go ahead with the customs clearance arrangements, prior payment of import IVA.*

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
5. **Colombia**	Sr. Gabriel Enrique Guzmán Pachon Jefe Grupo Sistemas de Comunicación (Punto Focal de la REDDIG)	Aeropuerto El Dorado, primer piso Centro Nacional de Aeronavegación Dirección de Telecomunicaciones Tel: (57-1) 296-2224, 296-2225, 296-2940 y 425-1000 Cel: (57) 3176561202	Empresa encargada de la nacionalización de los equipos en Colombia: GRUPO ALCOMEX - Carga Aérea Contacto: Campo Elías Rodríguez Camargo, Cel: (57) 3153669963 Dirección: Depósito Aduanero ALCOMEZ S.A., Carrera 103 N° 25B-86, Departamento Comercial, Bogotá, Colombia Tel: (57-1) 596-1666, Ext. 2192, 2129 y 2123 E-mails: crodriguezc@grupoalcomex com; areacomercial@grupoalcomex. Com ---------- *Company responsible for the nationalization of the equipment in Colombia:* *GRUPO ALCOMEX - Air Cargo* *Contact: Campo Elías Rodríguez Camargo, Cell: (57) 3153669963* *Address: Depósito Aduanero ALCOMEZ S.A., Carrera 103 N° 25B-86, Departamento Comercial, Bogotá, Colombia* *Tel: (57-1) 596-1666, Ext. 2192, 2129 y 2123* *E-mails: crodriguezc@grupoalcomex.com; areacomercial@grupoalcomex.com*
6. **Ecuador**	DGAC Atención: Raúl Alfredo Avellán Oña E-mail: ravellan1@hotmail.com; raul.avellan@aviacioncivil. gob.ec Tel. 593-4-2925495 Cel. 0995302735	Dirección General de Aviación Civil (RUC Nº 1768014410001) Edificio Servicios Para la Navegación Aérea- SNA Guayaquil-Ecuador Ave. De Las Américas Aeropuerto José Joaquín de Olmedo	• Documento del Proyecto • Contrato en español • Packing List correspondiente a Ecuador (con valores) • Factura Comercial del equipamiento a ser internado ---------- • *Project document* • *Contract in Spanish* • *Packing List corresponding to Ecuador (with values)* • *Commercial Invoice of equipment to be admitted.*
7. **French Guyana / Guyana Francesa**	Attn Mr Michel METZELARD or Alain BURTI	Centre de Contrôle de Cayenne-Félix Eboué Service Maintenance Aeroport de Cayenne Félix Eboué 97351 MATOURY	a) BL or AWB: 1 original and 2 copies b) Commercial invoice: 2 copies c) Certificate of origin: 1 original d) Certificate of insurance: 1 copy e) REDDIG II contract ----------

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			a) BL o AWB: 1 original y 2 copias. *b) Factura comercial: 2 copias* *c) Certificado de origen: 1 original* *d) Certificado de seguro: 1 copia* *e) Contrato de REDDIG II*
8. Guyana	Director General Control Tower Complex Cheddi Jagan International Airport Timehri Attention: Mortimer Salisbury Tel: 592-261-2569 Mobile: 592-625-7669	Control Tower Complex Cheddi Jagan International Airport Timehri East Bank Demerara - Guyana	
9. Paraguay	DINAC, en la atención a la Gerencia de Telecomunicaciones y Electrónica, además se puede poner la atención a nombre de Victor Moran y/o Aldo Pereira Y Gerente de Telecomunicaciones y Electronica el Sr. Jorge Szwako - 0985-893-689.	Aeropuerto internacional Silvio Pettirossi	Al respecto de envío de cargas (equipos y partes) informan que los documentos tales como Factura, Guía Aérea y otros exigidos por la compañía aérea, deben estar a nombre de la DINAC y a la atención de la Gerencia de Telecomunicaciones y Electrónica, a fin de facilitar la identificación de la carga. Se sugiere además la factibilidad de obtener copias o datos del embarque de los equipos por parte de la empresa. ---------- *Regarding the shipping of cargo (equipment and parts) the documents such as Invoice, AWB and others required by the airline, must be in the name of DINAC and to the attention of the Telecommunications and Electronics, to facilitate the cargo identification.* *The feasibility of obtaining copies or data of the equipment shipment, by the company, is also suggested.*
10. Perú / Peru	Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A “Material Para Uso Aeronáutico”		1. Establecer claramente si los bienes a adquirir se encuentran dentro de la clasificación de material Aeronáutico según el anexo B del Decreto Supremo Nº 064-2004-EF.

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			2. Señalar claramente la modalidad de la adquisición teniendo en cuenta las condiciones de entrega de los bienes, considerando el Incoterms 2010. 3. De tratarse de una adquisición bajo condiciones de entrega DAP, esta deberá señalar si su ingreso es con beneficio de Material para uso Aeronáutico (RIN 486). 4. Tener en consideración que el Plazo fijado por aduanas para los trámites de Material Aeronáutico es de 30 días calendario desde la llegada de la carga; después de esta fecha la carga es considerada en abandono legal. 5. Teniendo en consideración los párrafos anteriores es necesario, la siguiente documentación: 6. Documento de Embarque (B/L y/o AWB). Consignado a nombre de Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A. Rubro contenido indique en su primer párrafo que es “Material Para Uso Aeronáutico” Valor FOB del Flete. - **Factura Comercial** - Consignado a nombre de Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A. Rubro contenido indique en su primer párrafo que es “Material Para Uso Aeronáutico” y posteriormente su contenido. Valor FOB y/o detallado, considerando valor de mercadería (FOB), más el importe del flete pagado e importe del seguro. - **Lista de Contenido** (Packing list) - Consignado a nombre de Corporación Peruana de

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			Aeropuertos y Aviación Comercial - CORPAC S.A. Rubro contenido indique en primer orden que es "Material Para Uso Aeronáutico" y posteriormente su contenido detallado por bulto y /o equipo, señalando como mínimo; marca, modelo, número de parte y serie. - **Certificado de Seguro** - Consignado a nombre de Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A. Rubro contenido indique en su primer párrafo que es "Material Para Uso Aeronáutico" y posteriormente detalle genérico. Valor de cobertura y prima a declarar. 7. Teniendo en consideración el tipo de embarque, el proveedor tiene que realizar previamente lo siguiente: - **Embarque Aéreo** Pago de handling (por la entrega de conocimiento de embarque y volante de Almacen). - **Embarque Marítimo** Pago de handling (por la entrega de conocimiento de embarque) Pago de vistos buenos en navieras y agentes portuarios. Pago por derecho de estadía, sobreestadía y devolución en caso de contenedores. Con estos documentos la oficina de aduanas CORPAC S.A. solicita el volante marítimo al almacén. 8. Cualquier error en algunos de los documentos citados por parte del proveedor podría ocasionar (pago de tasa rectificaciones) demora en los trámites, perjudicando el despacho del Material para Uso Aeronáutico.

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			GESTIONES ADUANERAS POR PARTE DE CORPAC S.A. 1. Con la recepción de la documentación debidamente saneada por el proveedor, la oficina de aduanas de CORPAC S.A. realiza las siguientes gestiones: - **Embarque Aéreo** (Gestión en 5 días útiles como máximo, de acuerdo a lo estipulado en el contrato) Aforo previo Liquidación numeración de declaración de Ingreso de aduanas Aforo Físico Retiro de carga con acompañamiento aduanero a nuestro almacén DMA.. Entrega de carga al usuario. - **Embarque Marítimo** (Gestión en 10 días útiles como máximo, de acuerdo a lo estipulado en el contrato) Tramite la entrega del Volante de ingreso del almacén marítimo. Liquidación y numeración de solicitud de traslado de Aduana Marítima a la Aduana Aérea. Tramite ante oficina de resguardo para el traslado de carga del Almacén Marítimo al Almacén Aéreo con diligencia aduanera. Desconsolidación de la carga y manifiesto por el Almacén Aéreo. Recepción de nuevo volante de carga. Aforo previo Liquidación numeración de declaración de Ingreso en Aduanas Aforo Físico Retiro de carga con acompañamiento aduanero a nuestro almacén DMA.. Entrega de carga al usuario. Al tratarse de una modalidad DAP, corresponde al proveedor asumir los pagos de almacenaje y transporte de la mercadería hasta nuestro almacén DMA y/o último

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			destino, de acuerdo a lo estipulado en el contrato. ---------- *1. Clearly state if the goods to be acquired are within the classification of Aeronautical material, according to Annex B of Supreme Decree N° 064-2001-EF.* *2. Clearly indicate the acquisition mode, taking into account the terms of delivery of the goods, considering Incoterms 2010.* *3. In case of an acquisition under conditions of delivery DAP, this should indicate if its entry is benefited as Material for Aeronautical Use (RIN 486).* *4. Take into consideration that the time set by customs for the formalities for Aeronautical Material is of 30 calendar days from the arrival of the cargo; after this date the charge is considered legally abandoned.* *5. Considering the above paragraphs, the following documentation is required:* *6. Bill of Lading (B/L and/or AWB). Consigned in the name of Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A.* *Item content must indicate in the first paragraph that it is "Material for Aeronautical Use"* *FOB Value of Freight* - ***Commercial Invoice*** *- Consigned in the name of Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A.* *Item content must indicate in the first paragraph that it is "Material for Aeronautical Use" and subsequently its contents. FOB value and/or detailed, considering the merchandise value (FOB) and/or detailed, plus the amount of*

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			the freight paid and amount of insurance. - ***Packing List*** - *Consigned in the name of* - *Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A.* *Item content must indicate in first order that it is "Material for Aeronautical Use" and subsequently its contents detailed per package and/or equipment, noting at least the brand, model, part and serial number.* - ***Certificate of Insurance*** - *Consigned in the name of* - *Corporación Peruana de Aeropuertos y Aviación Comercial - CORPAC S.A.* *Item content must indicate in the first paragraph that it is "Material for Aeronautical Use" and subsequently the generic detail. Coverage and premium value to testify.* *7. Taking into consideration the type of shipment, the supplier has to previously do the following:* - ***Air Shipment*** *Payment of handling (for delivery of bill of lading and warehouse flyer).* - ***Ocean Shipment*** *Payment of handling (for delivery* of *bill of lading)* *Payment of approvals in shipping and port agents.* *Payment of fees to stay, demurrage and refund in case of containers.* *With these documents CORPAC SA customs office requests maritime flyer to the warehouse.* *8. Any mistake in some of the documents cited by the supplier may cause (payment of adjustment fare) delay in the processing, causing detriment in the shipment of the Material for Aeronautical Use.*

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			CUSTOMS ARRANGEMENTS BY CORPAC S.A. *1. Upon receipt of the documentation properly sanitized by the supplier, the customs office of CORPAC S.A. will perform the following arrangements:* *- **Air Shipment** (Management in 5 working days at the most, as stipulated in the contract)* *Previous capacity* *Clearance of numbering of Statement of customs entrance* *Physical capacity* *Pick up of cargo with customs support to our DMA warehouse.* *Delivery of cargo to the user.* *- **Ocean Shipment** (Management in 10 working days at the most, as stipulated in the contract)* *Delivery process for entrance flyer to the maritime warehouse.* *Liquidation and numbering of the transfer request from the Maritime Customs to the Air Customs.* *Process before the warehouse office for the transfer of cargo from the Maritime Warehouse to the Air Warehouse with customs diligence.* *Deconsolidation of cargo and manifest by the Air Warehouse.* *Reception of new cargo flyer* *Previous capacity* *Clearance of numbering of Statement of customs entrance* *Physical capacity* *Pick up of cargo with customs support to our DMA warehouse.* *Delivery of cargo to the user.* *Being a DAP mode, the supplier shall take over payments for storage and merchandise transport to our DMA warehouse and/or final destination, according to the terms of the contract.*
11. Suriname / Surinam	Ministry of Transport, Communication and Tourism. DeDepartment of Civil Aviation Suriname Att: Robby Venlo	Coesewijnestraat #1, Zorg & Hoop Airport.	Custom clearance requirement in Suriname: On this respect , the Consortium INEO Level 3 is going to supply the following information: a) BL original and 2 copies

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			b) Commercial invoice: 2 copies c) Packing list: 1 original and 2 copies d) Certificate of origin: 1 original e) Certificate of insurance: 1 copy f) REDDIG II contract According to customs these documents are enough. *Requerimientos de Aduana de Surinam:* *En este sentido, el Consorcio INEO/Level 3 va a proporcionar la siguiente información:* *a) BL original y 2 copias* *b) Factura comercial: 2 copias* *c) Lista de embalaje: 1 original y 2 copias* *d) Certificado de origen: 1 original,* *e) Certificado de seguro: 1 copia* *f) Contrato de REDDIG II* *De acuerdo a la Aduana, estos documentos son suficientes*
12. Trinidad & Tobago / Trinidad & Tabago	Trinidad and Tobago Civil Aviation Authority Attention: Director General Tel: 868 669 4706/4302/4806 Mobile: 868 681 4407	Caroni North Bank Road Piarco Trinidad	Commercial Invoice. The Commercial Invoice must include CIF (Cost, Insurance and Freight). If the equipment is shipped by air then the Airway Bill is also needed. If the equipment is shipped by sea then the Bill of Lading is needed. Items shipped by air can be cleared in two (2) days upon arrival, once the Airway Bill is sent in advance. A scanned copy can work. Items shipped by sea can be cleared in five (5) days upon arrival once the Bill of Lading is sent in advance. A scanned copy can work. --- *Factura comercial. La factura comercial debe incluir CIF (costo, seguro y flete). Si el equipo es enviado vía aérea, entonces también se requiere la Guía Aérea. Si el equipo es enviado por mar, se requiere el Conocimiento de embarque.* *Los artículos enviados por vía aérea podrán ser liberados en dos (2) días a su llegada, si el AWB es enviado por adelantado, Una copia*

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			escaneada puede ser útil. *Los artículos enviados por mar podrán ser liberados en cinco (5) días a su llegada si el BL es enviado por adelantado. Una copia escaneada puede ser útil.*
13. Uruguay	Dirección Nacional de Aviación Civil e Infraestructura Aeronáutica Proyecto RLA/03/901 – OACI - PNUD Atención Marco Vignolo	Avda. de la Industrias Wilson Ferreira Aldunate (Ex. Cno. Carrasco) 551 Paso Carrasco – Canelones – República Oriental del Uruguay C.P.: 14002	Mismos que lo indicado en la Conclusión RCC17/3 --- *Same as indicated in the Conclusion RCC17/3*
14. Venezuela **Datos ratificados mediante carta N° PRE-ORI-GRO 2778/2014 del 26/5/14 Correo-e corregido** **Data ratified through letter N° PRE-ORI-GRO 2778/2014 dated 26/5/14 E-mail amended**	*Instituto Nacional de Aeronáutica Civil (INAC)* *Lic. Aquiles Mentado;* *Coordinador de Aduanas;* *Cel 0416-6079309 y 0414-1359277; email:* ~~*aquiles.siciliani@inac.gov.ve*~~ *aquiles.siciliani@inac.gob.ve*	Torre Británica de Seguros, Av Josè Fèlix Sosa con Av Luis Roche, Urb Altamira, Piso 6, Caracas, DTTO CAPITAL ZONA POSTAL 1060, Venezuela.	Factura Comercial, Pro-forma de factura o documento sustitutivo de esta donde se contemple el Costo de las Mercancías. Contrato, Orden de Compra, Convenio o cualquier otro documento que acredite la propiedad de los bienes. 1. Deben enviarnos copia de la factura pro-forma con el valor FOB , debidamente sellada por el vendedor; a fin, de gestionar el Certificado de Insuficiencia Transitoria de Producción, ante el Ministerio del Poder Popular para las Industrias. 2. Deben enviarnos copia de la factura pro-forma valor CIF, para tramitar la exención total de Gravámenes y Tasas por Deterrminación del Regímen Legal aplicable ante el SENIAT. 3. El proveedor deberá consignar junto con lo requerido en los puntos 1y2, una relación detallada de los bienes describiendo: Parte o Componente, serial, peso neto, peso bruto, puerto o aeropuerto de llegada, valor CIF y valor FOB 4. **No** debe realizarse ningún envío sin la debida autorización de este Instituto. Esta se generará inmediatamente luego de contar con las prenombradas licencias y exenciones.

ESTADO/STATE	NOMBRE/NAME	DIRECCIÓN/ADDRESS	REQUERIMIENTOS DE ADUANAS /CUSTOMS REQUIREMENTS
			---------- *Commercial Invoice, Pro-forma invoice or its substitute document where the merchandise cost could be seen.* *Contract, Purchase Order Agreement or any other document proving the ownership of the goods.* *A copy of the Pro-forma Invoice with the FOB value is required, duly stamped by the seller; in order to manage the Transient failure Production Certificate at the Ministry of Popular Power for Industries.* *2. Copy of the pro-forma invoice CIF value is required, for the full exemption process of the charges and fees given by the legal regime applicable before the SENIAT.* *3. The supplier must provide along with the requirements in points 1 y 2, a detailed list of the goods describing: Part or Component, serial, net weight, gross weight, port or airport of arrival, CIF and FOB value.* *4. **No** shipping should not be done without permission of this Institute. This will be generated immediately after having the pre-named licenses and exemptions.*

APPENDIX F / APÉNDICE F

INTELSAT

REDDIG II FREQUENCIES / FRECUENCIAS REDDIG II

Satellite	Intelsat 14/315
Transponder	A28CV/A28CV
Beam	AMCV/AMCV
Polarization	V/V
Lease Assignment	6013.62/3788.62 - 6018.02/3793.02
Lease Resource	4.40 MHz

The following carriers will be activated:

Carrier ID		TX Freq MHz	RX Freq MHz	Modulation	IR (Kbps)	Coding	Bandwidth MHz	U/L EIRP dBW	D/L EIRP dBW (B.C.)	OBO dB
18663197		6014.49600	3789.49600	DIGITAL-8PHASE-PSK	2432	DIG*FEC=2/3*RS=1/1	1.45910	49.47	25.68	-18.01
18663200		6015.89350	3790.89350	DIGITAL-8PHASE-PSK	2216	DIG*FEC=2/3*RS=1/1	1.32950	49.12	25.32	-18.37
18663203		6017.18700	3792.18700	DIGITAL-8PHASE-PSK	2080	DIG*FEC=2/3*RS=1/1	1.24790	48.62	24.82	-18.87

The following carriers will be discontinued:

Carrier ID		TX Freq. MHz	RX Freq MHz	Modulation	IR (Kbps)	Coding	Bandwidth MHz
9794660		6014.49600	3789.49600	DIGITAL-4PHASE-QPSK	1144	BSN*FEC=1/2*RS=216/236	1.75000
9794663		6016.24600	3791.24600	DIGITAL-4PHASE-QPSK	1144	BSN*FEC=1/2*RS=216/236	1.75000
9794666		6017.56200	3792.56200	DIGITAL-4PHASE-QPSK	572	BSN*FEC=1/2*RS=216/236	0.87500

Agenda Item 2: Review of the activities carried out by the REDDIG member States on the initial arrangements for the REDDIG II implementation.

2.1 The subjects related to this agenda item were discussed in agenda item 1 and agenda item 3.

Agenda Item 3: Activities required to be undertaken by REDDIG member States for REDDIG II implementation

3.1 Although the contract for the implementation and commissioning of the REDDIG II is a turnkey contract, there are activities to be conducted by the REDDIG member States for INEO & Level 3 Consortium's execution and compliance of the tasks indicated in the latest implementation chronogram of Contract 22501200. In this regard, the Meeting was informed of a delay estimated in three weeks for the clearance of the equipment by INEO.

3.2 These activities are classified in:

a) Administrative/Logistic; and

b) Technical.

3.3 Administrative/logistical activities

a) For the drafting of the goods' shipment documentation (equipment and parts), responsibility of INEO & Level 3 Consortium, each of the REDDIG member States and COCESNA is to submit to the ICAO SAM Regional Office as soon as possible and by 15 April 2014, the "SHIP TO" information, as well as any other relevant information to be included in the shipment documentation (commercial invoice, packing list, AWB, B/L), for their proper importation and customs clearance.
Activity completed.

b) To obtain the "SHIP TO" information, REDDIG II focal points were recommended to consult and request it from the areas responsible for this in their respective States, explaining the importance of counting with this information within the target date.
Activity completed.

c) The ICAO SAM Regional Office consolidated the "SHIP TO" information received from States and COCESNA and will submit it to INEO & Level 3 Consortium.
Activity completed.

d) As per the latest INEO chronogram, Task No. 53 to 68, INEO has estimated 45 days (from 7 September to 22 October 2014) for the import and customs clearance of the goods at each State and COCESNA. Therefore, according to the above, the goods should arrive and each State and COCESNA are to receive the complete shipping documentation no later than 6 September 2014.

e) Once all States and COCESNA receive the complete set of shipment documents, they will review and verify they are correct, in order to immediately start with the goods customs clearance and importation. In the event that the information contained in the documentation is incorrect as regards the information submitted in activity a), the ICAO SAM Regional Office is to be immediately informed of it, so INEO is duly notified for the issuance of the respective rectification.

f) All Sates and COCESNA will have, once activity e) is completed, forty five (45) days for the goods' clearance, import and local transfer to the respective installation site. The target date is 22 October 2014.

g) With the aim of complying with activity f), States and COCESNA are requested to carry out all necessary previous arrangements (submission on of explanatory letters, coordination meetings) in order to receive appropriate support from the institutions and authorities responsible for the goods' customs clearance, import and local transport, with the aim of completing this process in forty five (45) days, maximum.

3.4 **Technical activities**

a) Antenna maintenance. A general cleaning and maintenance was requested to be made to every antenna at the REDDIG stations, as per the following chronogram:

SAEZ	16 July 2014	***Activity completed***
SBCT	10 September 2014	
SBMN	26 September 2014	
SBRF	11 September 2014	
SCEL	12 September 2014	
SEGU	22 September 2014	
SGAS	16 September 2014	
SKED	17 September 2014	
SLLP	18 September 2014	
SMPM	19 September 2014	
SOCA	04 August 2014	
SPIM	15 September 2014	
SUMU	23 September 2014	
SVMI	24 September 2014	
SYGC	25 September 2014	
TTZP	07 August 2014	

b) Update the information registered at the national entities administrating the radio frequency spectrum, regarding the new equipment and frequencies composing REDDIG II, was requested. The new REDDIG II frequencies are shown in **Appendix F** to the agenda item 1.

c) In accordance with the latest INEO chronogram, Tasks No. 78 to 93, INEO has scheduled 23 October 2014 as the date to start with the installation at all the nodes (sites). Therefore, it is the responsibility of each State that the 16 REDDIG nodes have available, at the site designated for the installation of the new rack, the corresponding connector cabling of all services (voice and data) specified and detailed in the approved REDDIG II final design documents. Those nodes having a different site to the current one designated for the installation, must have the connector cabling in parallel up to the new rack installation site, of all services (voice and data). The target date is 22 October 2014.

d) Ground Backbone Commissioning, Tasks N° 97 and 99 of the latest schedule submitted by INEO.
It is responsibility of each State to verify that each one of the services (voice and data) be operating normally in the terrestrial network (Ground Backbone) with all its respective counterparties. It is worth mentioning that the current REDDIG I satellite network will only be deactivated to start the installation of the new REDDIG II satellite network, and when all the services of the 16 nodes be normally operating in the terrestrial network (Ground Backbone).

e) Commissioning, Tasks N° 100, 101 and 102 of the latest schedule submitted by INEO.
It is responsibility of each State to verify that INEO & Level 3 Consortium complies with the appropriate requirements previous to the commissioning of the PSAT tests, as it is the execution of the nine (9) phases of installation, described in document SDD, VSAT, Part 3, including the tests ("Pol Alignment" and Downlink Adjustment") for the two (2) SSPA, which must be approved by Intelsat for each station. Please report to ICAO Regional SAM Office in case of a negative observation.

f) Assembly and installation of equipment in COCESNA.
The ICAO SAM Regional Office will send a specialized technician to the COCESNA node in Tegucigalpa, Honduras from 7 to 10 November 2014 for the assembly of equipment ('router' plus satellite modem) using current band combiners/dividers type L type N (F). It must be taken into consideration the wiring (type, length and connectors) to be used for the "router" equipment and satellite mode, as well as between the satellite modem and the combiners/dividers of L band. Also it must be taken into account the frequency of the local oscillator of the current RF amplifier of the station.
It is INEO's responsibility the commissioning of the COCESNA node in REDDIG II once it has been completed the assembly of the above equipment. For this, INEO must provide in advance the operational configuration files for the 'router' and the satellite modem so as to be locally 'loaded' in the COCESNA node by the technician sent by the ICAO SAM Office. Once this is done, all the tests listed in the schedule will be made.

g) PSAT/NAT, tests, Tasks No. 103 and 104 of the schedule submitted by INEO.
It is the responsibility of each State verifying the implementation and compliance of the protocols of the PSAT tests as well as its validation, and then the respective NAT tests under the coordination of the ICAO SAM Regional Office.
The ICAO SAM Regional Office shall verify that all the observations in the FAT be fully resolved this, being this a condition for the acceptance of the PSAT tests.

h) FNAT tests, Tasks N° 106 and 107 of the schedule submitted by INEO.
The ICAO SAM Regional Office, together and in coordination with each of the States, will check that the INEO & Level 3 Consortium successfully meet all the PSAT/NAT tests that were not passed, and will evaluate the performance of the satellite and terrestrial networks during the period called "Operational Readiness Demonstration" (ORD). When all the indicated above is satisfactorily fulfilled, will proceed to sign the certificate of final acceptance, from which the warranty period of two (2) years will begin.

Agenda Item 4: Other business

4.1 The Meeting considered to carry out, if necessary, a fourth technical operational meeting once the REDDIG II installation is completed. The estimated date for the REDDIG II commissioning is at the end of October 2014; therefore, it would take place during the month of November or in early December 2014.