Organización de Aviación Civil Internacional
Oficina Regional Sudamericana - Proyecto Regional RLA/03/901
Sistema de Gestión de la REDDIG y Administración del Segmento Satelital
Tercera Reunión Técnico-Operacional sobre la Implantación de la Nueva Red Digital REDDIG II (RTO/3)
Bogotá, Colombia, 28 al 29 de julio de 2014

Cuestión 1 del orden del día: **Seguimiento de las actividades de implantación de la REDDIG II ejecutadas hasta la fecha**

Seguimiento de actividades de implantación de la REDDIG II

(Nota de estudio presentada por la Secretaría)

RESUMEN

Esta nota de estudio presenta información sobre las actividades de implantación de la nueva red digital REDDIG II desde la Segunda Reunión Técnico Operacional sobre la implantación de la REDDIG II (RTO/2)

REFERENCIAS

- Segunda Reunión Técnico Operacional sobre la implantación de la REDDIG II (RTO/2) (Lima, Perú 26 al 28 de marzo de 2014)
- Informe de las Pruebas de Recepción en Fábrica (http://ww1.lima.icao.int/reddig)

Objetivos estratégicos de la OACI:	*A – Seguridad operacional* *B - Capacidad y eficiencia de la navegación aérea*

1. Antecedentes

1.1 La Reunión RTO/2 analizó el plan de acción para la implantación de la Fase 2 de la REDDIG II, procedió a la actualización de la lista de puntos focales de la REDDIG II, y tomó nota del avance en la preparación para la capacitación prevista en la REDDIG II, las pruebas de aceptación en fábrica y consideraciones adicionales en la instalación de la REDDIG II.

1.2 Como **Apéndice A** de esta nota de estudio, se presenta el cronograma actualizado revisado en la CRPP/2

2. Análisis

2.1 Para dar seguimiento a las actividades de implantación de la REDDIG II, a continuación se hace una descripción de los siguientes aspectos:

- Puntos focales de la REDDIG II
- Curso en fábrica de la REDDIG II
- Pruebas de aceptación en fabrica (FAT) de la REDDIG II
- Otras consideraciones REDDIG II

Puntos focales de la REDDIG II

2.2 La Reunión RTO/2 procedió a la actualización de la lista de puntos focales, la cual se presenta como **Apéndice B** de esta nota de estudio. La Reunión debería informar cualquier cambio en la misma con el fin de poder tener actualizada dicha lista.

Curso en fábrica de la REDDIG II

2.3 El curso en fábrica, tal como estaba previsto, se llevó a cabo en Vélizy, Francia, del 21 de abril al 9 de mayo de 2014. El curso estaba dirigido a personal que trabajara en los NCC de Manaos y Ezeiza; al mismo participaron tres delgados de Brasil, tres delegados de Argentina y el Administrador de la REDDIG. El programa del curso se presenta como **Apéndice C** de esta nota de estudio. El material del curso se ha colocado en la página WEB de la REDDIG II www.lima1.icao.int/reddig.

2.4 El curso fue desarrollado en forma normal, cumpliéndose todos los tópicos de acuerdo al programa Factory Training. Los tópicos fueron teóricos y con ejercicios prácticos y de laboratorio donde eran aplicables.

2.5 Como recomendación, se consideró que en el curso teórico práctico a dictarse en Río de Janeiro del 11 al 22 de agosto de 2014 y del 25 de agosto al 5 de septiembre, INEO ampliara las horas de dictado del tópico referido al NMS de las estaciones, específicamente al software WhatsUp Gold y que la próxima reunión de coordinación de la REDDIG analizará la posibilidad de programar para el 2015 un curso especializado sobre el manejo y operación del software WhatsUp Gold dirigido a los técnicos que atienden los nodos de la REDDIG.

Pruebas de aceptación en fábrica (FAT) de la REDDIG II

2.6 Del 12 al 16 de mayo de 2013 se llevaron a cabo las pruebas de aceptación en fábrica de la REDDIG II. Las pruebas se realizaron en Vélizy Paris en las instalaciones de INEO. En las pruebas participaron representantes miembros del Proyecto RLA/03/901 de Argentina, Brasil, Paraguay y Perú y de la Gerencia del Proyecto de la REDDIG II.

2.7 Durante las pruebas de aceptación en fábrica se realizaron las siguientes actividades:

- Chequeo de las instalaciones del cableado y equipos en cada uno de los racks de la REDDIG II
- Verificación de los modelos y seriales de todos los equipos de la REDDIG II
- Pruebas de enlaces de comunicaciones entre los sitios en un ambiente simulado
- Pruebas en los equipos out door
- Pruebas en los equipos in door
- Pruebas en el sistema de monitoreo de la REDDIG II

2.8 Para las pruebas, INEO montó en su laboratorio todos los equipos, cables y conectores en los respectivos racks de todos los nodos de la REDDIG II. Para las conexiones entre los nodos, se tendieron cables coaxiales entre los modem satelitales utilizándose combinadores y divisores En la página 6 del documento relacionado a los resultados de la FAT (Ver **Apéndice D** de esta nota de estudio) se muestra la configuración de cómo se simuló la implantación de la red mixta satelital/terrestre .

Resultados de las pruebas de la FAT

2.9 Se procedió a la revisión de los diagramas que conforman los nodos de la REDDIG II. Los diagramas presentados presentaban correcciones realizadas a mano, no contándose por lo tanto, durante la FAT con los diagramas finales de instalación. Faltaron los diagramas del nodo REDDIG II de Maiquetía, Venezuela.

2.10 Como resultado de la revisión de los diagramas de instalación de los nodos de la REDDIG II que contienen diagrama de configuración de los racks, cableado eléctrico y de comunicaciones y sus identificaciones y equipos a instalar, se tiene lo siguiente:

Aspectos resaltantes encontrados en la revisión de los diagramas de instalación de la REDDIG II

2.11 En los documentos se utiliza para identificar las páginas, la palabra folio en español y *sheet* en inglés. Al respecto, favor utilizar un solo término estándar para la identificación. Los diagramas de configuración no están identificados de acuerdo a su contenido; los mismos deben estar también identificados en el cuadro inferior derecho de la página.

2.12 No se representan en su totalidad la vista de los gabinetes; en los diagramas falta una vista lateral. Asimismo, en las vistas laterales de los gabinetes se deben representar todas las bandejas o escaleras donde pasan los cables. No está dibujado el UPS en la mayoría de los diagramas de los gabinetes (vista frontal).

2.13 En la vista posterior del diagrama de los gabinetes en algunas de las localidades, la representación gráfica de los breakers no coincide con lo que está instalado en los gabinetes. En la hoja donde se muestra el listado de conectores y equipos instalados en los gabinetes, se indica que hay un blank panel de 5U, pero en todos los gabinetes lo que está instalado es un blank panel de 3U.

2.14 Se indica en la misma hoja que hay 22 conectores RJ45 y 9 DB 25, pero se observó que en todos los gabinetes hay un número reducido de conectores diferentes al indicado; asimismo, se indica que los conectores DB 25 son M/M, pero los instalados son M/H; no se incluye en la hoja de listado de equipos el KVM Exender.

2.15 Todas las observaciones arriba citadas serán incluidas en cado uno de los diagramas finales que el consorcio INEO & Level 3 enviará a cada uno de los nodos de los Estados miembros de la REDDIG II, junto con el equipamiento correspondiente a cada uno de los nodos. En la página WEB de la REDDIG II www1.lima.icao.int/reddig se presentan las observaciones realizadas en cada uno de los diagramas durante la FAT.

Seriales equipos

2.16 El grupo procedió a comprobar el número de serie de todos los equipos instalados en cada uno de los racks que conforman los nodos de la REDDIG II, así como de algunos de los seriales de monitores, impresores y amplificadores que se encontraban en sus cajas, en vista que no se instalaron en la configuración montada en la FAT.

2.17 Como resultado de la revisión de los seriales se obtuvo que en la mayoría de los Dataprobe RSS-16 Slot 4U, el listado de serial indica que es 1150102xxxxxxxx, pero al ver lo indicado en los equipos, se tiene 1150101xxxxxx. En todos los seriales de los routers CISCO se tiene una S delante que no corresponde a lo indicado en el serial del equipo que no tiene dicha letra inicial. En el Ciscco 2901 UC Bundle PDVM3-16 Lic de Chile, el serial es SFCZ 175092KT el serial en el equipo es SFCZ 175092K.

2.18 El **Apéndice E** de esta nota de estudio presenta la lista de todos los seriales de los equipos y las observaciones como resultado de la FAT.

Resultados de las pruebas de los equipos outdoor indoor y sistema NMS

2.19 Las siguientes pruebas no pudieron realizarse en vista que no estaban disponibles los elementos necesarios para la realización de las mismas por parte del contratista:

- Todas las pruebas radar
- Las pruebas de teleconferencia se realizaron con aparatos telefónicos analógicos y solamente pudo probarse con el servidor de Manaos (1111). Por tal motivo, consideramos que aún cuando la teleconferencia está funcionando, la prueba total como requerida no se cumplió en vista que debería haberse realizado con teléfonos IP
- La prueba de BER en el AFTN
- La prueba SAT LOOP BER TEST
- Las pruebas en la sección REDUNDANCY TEST correspondientes al radar y el AFTN
- Las pruebas (user access control) de local user del Server Fileover de Ezeiza y el user server del Central Server de Manaos

2.20 Las siguientes pruebas no funcionaron (Referencias ver **Apéndice D** para mayor detalle)

- La prueba 7.9 (página 92 y 93)
- La prueba de database (Sección 7.10)
- Las pruebas de TEST CONNECTION THROUGH SERIAL PORT en el Failover server (página 98 y 99)

2.21 Las observaciones en todas las pruebas realizadas se presentan en el documento de la FAT mostrado en el **Apendice D** de esta nota de estudio.

Otras observaciones notadas en la FAT

2.22 En las especificaciones técnicas de la REDDIG II se indica que los conectores AC deben ser tipo americano; se observó que hay conectores AC europeo en el UPS y el KVM.

2.23 Hay tomas AC que no están conectadas en las regletas AC instaladas en las parte laterales de los racks; las mismas están instaladas sobre una plancha metálica horizontal de una forma no estética (toma AC para el NETGEAR utilizado para acceso remoto INTERNET y el KVM que no es aceptable). No están Identificados los equipos en la parte frontal de los gabinetes.

2.24 La gráfica de representación de los equipos en los nodos en el NMS debe mejorarse de forma tal que la imagen sea nítida y se pueda ver en forma detallada lo indicado. De la misma forma, la gráfica donde se muestran todos los nodos de la REDDIG II no es aceptable. Debe incluirse en todas las partes del sistema de gestión el nodo de COCESNA.

2.25 Todos los servicios nativos en IP (unicast y multicast) deberían ingresar por un solo puerto (soportando todas las VLANs) al RSS Switch de banda base, puesto que en caso de falla de

uno de los NetGear Switch, todos los servicios en IP (VLANs) serían conmutados a través del RSS Switch al otro NetGear Switch. Además, de esta forma se podrá optimizar la utilización de las direcciones de Red asignadas a cada país para subdividirlas por cada servicio en IP (AMHS, RADAR, AIDC, VoIP y otros futuros).

2.26 En caso de falla del Servidor Central NMS en Manaus, el Servidor de respaldo en Ezeiza debería asumir las funciones completas de Servidor Central NMS con todas las atribuciones de monitoría y control sobre todas las estaciones de la red. De acuerdo a la explicación proporcionada por INEO E&S, en caso de falla del Servidor Central NMS en Manaos, el servidor de respaldo en Ezeiza no asumirá las funciones completas de Servidor Central NMS.

2.27 De acuerdo al documento SDD, todos los servicios de datos, sean seriales o digitales, deberían ser monitoreados para casos de fallas. Durante las prácticas del NMS, esto no estaba incluido en la monitoreo configurada.

Conclusión resultado de la FAT

2.28 Como resultado de la FAT el grupo procedió a la aceptación de la FAT con todas las observaciones arriba indicadas, las cuales deberán ser resueltas en su totalidad y representarán condiciones para la aceptación de las pruebas en sitio PSAT.

2.29 Después de un proceso de coordinación entre el proveedor de la REDDIG II, la OACI y los Estados, se procedió a determinar los requisitos para la internación en cada uno de los Estados miembros de la REDDIG II, así como la dirección y nombre de la persona a la cual el proveedor de la REDDIG II debe enviar los equipos. El **Apéndice F** presenta una tabla con la información indicada.

2.30 Intelsat procedió a la asignación de las nuevas frecuencias para la REDDIG II, las cuales se presentan como **Apéndice G** de esta nota de estudio. Al respecto, los puntos focales de la REDDIG deberían proceder a actualizar la información registrada en las entidades nacionales que administran el espectro de radio frecuencia.

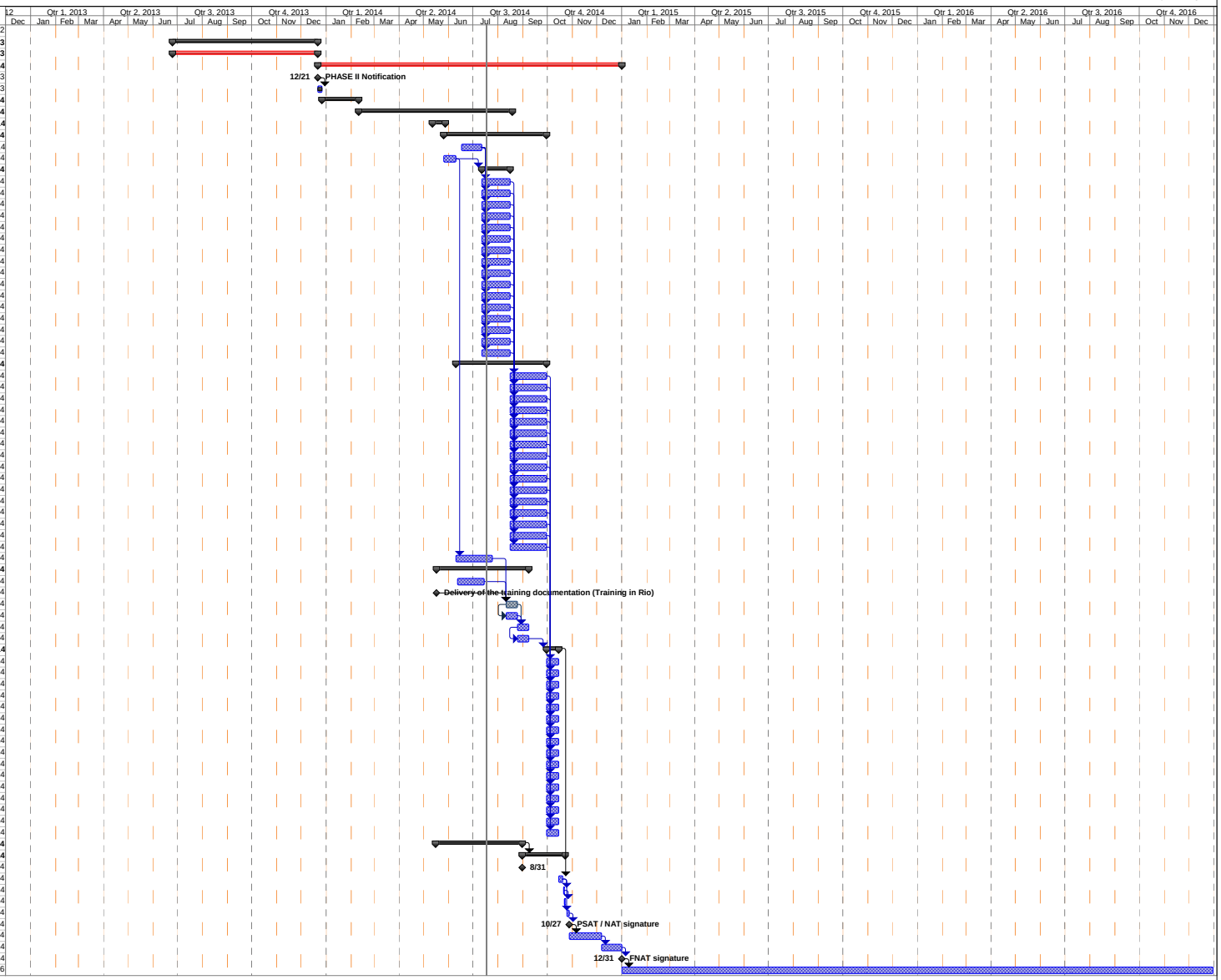
3. **Acción sugerida**

3.1 Se invita a la Reunión a:

a) tomar nota de la información presentada;
b) analizar las acciones indicadas en la sección 2 de esta nota de estudio y los respectivos apéndices para su ejecución; y
c) analizar otras consideraciones al respecto que la Reunión considere necesario

- FIN –

ID	Nom de la tâche	Start	Finish
1	**Site survey (performed during tendering stage)**	Fri 4/20/12	Thu 5/10/12
2	**Project Tentative Work Schedule**	**Tue 6/25/13**	**Sat 12/21/13**
3	**Phase 1 of the REDDIG II Project**	**Tue 6/25/13**	**Sat 12/21/13**
16	**Phase 2 of the REDDIG II Network**	**Sat 12/21/13**	**Wed 12/31/14**
17	PHASE II Notification	Sat 12/21/13	Sat 12/21/13
18	Kick off phase II	Sat 12/21/13	Thu 12/26/13
19	**VSAT Goods Purchasing and delivery in France**	**Thu 12/26/13**	**Sun 2/9/14**
21	**Factory Intergation and training**	**Sun 2/9/14**	**Mon 8/18/14**
28	**Factory Acceptance Test**	**Mon 5/12/14**	**Tue 5/27/14**
32	**Dispatch to the sites**	**Mon 5/26/14**	**Mon 9/29/14**
33	Packing of goods	Mon 6/16/14	Fri 7/11/14
34	Rio Spare/training	Mon 5/26/14	Tue 6/10/14
35	**TRANSPORT**	**Fri 7/11/14**	**Fri 8/15/14**
36	Ezeiza	Fri 7/11/14	Fri 8/15/14
37	La Paz	Fri 7/11/14	Fri 8/15/14
38	Santiago	Fri 7/11/14	Fri 8/15/14
39	Bogota	Fri 7/11/14	Fri 8/15/14
40	Guayaquil	Fri 7/11/14	Fri 8/15/14
41	Georgetown	Fri 7/11/14	Fri 8/15/14
42	Cayenne	Fri 7/11/14	Fri 8/15/14
43	Asuncion	Fri 7/11/14	Fri 8/15/14
44	Lima	Fri 7/11/14	Fri 8/15/14
45	Paramaribo	Fri 7/11/14	Fri 8/15/14
46	Piarco	Fri 7/11/14	Fri 8/15/14
47	Montevideo	Fri 7/11/14	Fri 8/15/14
48	Maiquetia	Fri 7/11/14	Fri 8/15/14
49	Manaus	Fri 7/11/14	Fri 8/15/14
50	Recife	Fri 7/11/14	Fri 8/15/14
51	Curitiba	Fri 7/11/14	Fri 8/15/14
52	**custom clearance**	**Tue 6/10/14**	**Mon 9/29/14**
53	Ezeiza	Fri 8/15/14	Mon 9/29/14
54	La Paz	Fri 8/15/14	Mon 9/29/14
55	Santiago	Fri 8/15/14	Mon 9/29/14
56	Bogota	Fri 8/15/14	Mon 9/29/14
57	Guayaquil	Fri 8/15/14	Mon 9/29/14
58	Georgetown	Fri 8/15/14	Mon 9/29/14
59	Cayenne	Fri 8/15/14	Mon 9/29/14
60	Asuncion	Fri 8/15/14	Mon 9/29/14
61	Lima	Fri 8/15/14	Mon 9/29/14
62	Paramaribo	Fri 8/15/14	Mon 9/29/14
63	Piarco	Fri 8/15/14	Mon 9/29/14
64	Montevideo	Fri 8/15/14	Mon 9/29/14
65	Maiquetia	Fri 8/15/14	Mon 9/29/14
66	Manaus	Fri 8/15/14	Mon 9/29/14
67	Recife	Fri 8/15/14	Mon 9/29/14
68	Curitiba	Fri 8/15/14	Mon 9/29/14
69	Rio Spare/training	Tue 6/10/14	Fri 7/25/14
70	**Theoretical / Pratical training in Rio de Janeiro**	**Sat 5/17/14**	**Mon 9/8/14**
71	Mundial de futbol	Thu 6/12/14	Mon 7/14/14
72	Delivery of the training documentation (Training in Rio)	Sat 5/17/14	Sat 5/17/14
73	Session 1 (10 persons in spanish)	Mon 8/11/14	Mon 8/25/14
74	Session 2 (10 persons in spanish)	Mon 8/11/14	Mon 8/25/14
75	Session 3 (10 persons in spanish)	Mon 8/25/14	Mon 9/8/14
76	Session 4 (10 persons in english)	Mon 8/25/14	Mon 9/8/14
77	**Installation**	**Mon 9/29/14**	**Tue 10/14/14**
78	Ezeiza	Mon 9/29/14	Tue 10/14/14
79	La Paz	Mon 9/29/14	Tue 10/14/14
80	Santiago	Mon 9/29/14	Tue 10/14/14
81	Bogota	Mon 9/29/14	Tue 10/14/14
82	Guayaquil	Mon 9/29/14	Tue 10/14/14
83	Georgetown	Mon 9/29/14	Tue 10/14/14
84	Cayenne	Mon 9/29/14	Tue 10/14/14
85	Asuncion	Mon 9/29/14	Tue 10/14/14
86	Lima	Mon 9/29/14	Tue 10/14/14
87	Paramaribo	Mon 9/29/14	Tue 10/14/14
88	Piarco	Mon 9/29/14	Tue 10/14/14
89	Montevideo	Mon 9/29/14	Tue 10/14/14
90	Maiquetia	Mon 9/29/14	Tue 10/14/14
91	Manaus	Mon 9/29/14	Tue 10/14/14
92	Recife	Mon 9/29/14	Tue 10/14/14
93	Curitiba	Mon 9/29/14	Tue 10/14/14
94	**Ground backbone preparation**	**Fri 5/16/14**	**Sun 8/31/14**
98	**commissioning**	**Sun 8/31/14**	**Wed 10/22/14**
99	ground backbone verification	Sun 8/31/14	Sun 8/31/14
100	Installation (all sites simultanouesly)	Tue 10/14/14	Sun 10/19/14
101	satellite service verification	Mon 10/20/14	Tue 10/21/14
102	switching from REDDIG I to REDDIG II	Tue 10/21/14	Wed 10/22/14
103	PSAT / NAT (all sites simultanouesly - validation by AAA)	Fri 10/24/14	Mon 10/27/14
104	PSAT / NAT signature	Mon 10/27/14	Mon 10/27/14
105	Operational Readiness Demonstration (ORD)	Mon 10/27/14	Sat 12/6/14
106	FNAT (each site approved by ICAO)	Sat 12/6/14	Wed 12/31/14
107	FNAT signature	Wed 12/31/14	Wed 12/31/14
108	2-Year Guarantee	Wed 12/31/14	Fri 12/30/16



APPENDIX B / APENDICE B

REDDIG II FOCAL POINTS / PUNTOS FOCALES REDDIG II

STATE / ESTADO	Name / Nombre	Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
ARG	Moira Lidia Callegare, ANAC	Jefe Departamento Proyectos – DNSA	mcallegare@anac.gov.ar	(54 11) 594-13097; (54 911) 3138-4581	Edificio ANAC Central Paseo Colón 1452, Ciudad Autónoma de Buenos Aires, CP 1063
	Sergio Alberto Vallone, ANAC	Inspector de Navegación Aérea, Depto. Regional Noroeste de Inspecciones de la Dirección Nacional de Inspecciones de Navegación Aérea	svallone@anac.gov.ar	(54 35) 1475-6414; (54 935) 1520-5543	Dirección Regional Noroeste Camino Pajas Blancas Km. 8.5, CP 5000, Córdoba Capital
	Obdulio Gouarnalusse, DGCTA - FFAA	Jefe Departamento de Proyectos	ogouarna@faa.mil.ar ; ogouarnalusse@gmail.com	(54 11) 4480-2362; (54 11) 5166-2362; (54 911) 6720 1528	Av. Comodoro Pedro Zanni 250, Edif. Cóndor, Sector Amarillo, Of. 472, 1104 Buenos Aires
	Cristian Javier Vittor, DGCTA - FFAA	Asesor de la Dirección C.N.S.	jvittor@anac.gov.ar; javiervittor@gmail.com	(54 11) 4480-2362; (54 11) 5166-2362; (54 11) 44802350; (54 911) 6894 0692	Av. Comodoro Pedro Zanni 250, Edif. Cóndor, Sector Amarillo, Of. 472, 1104 Buenos Aires
BRA	Francisco Almeida , DECEA	Jefe de Division de Coordinación técnia SDTE/DECEA	franciscoalmeida@hotmail.com	(55 21) 2101-6230; (55 21) 99499-6762	Av. General Justo 160, Rio de Janeiro, Brasil
	Joan Magno Correia Macêdo	Jefe de la Sala Técnica	ttst@cindacta4.decea.gov.br	(55 92) 3652-5470	CINDACTA IV Departamento de Control del Espacio Aéreo (DECEA) 1350 at Turismo Av. Tarumã Manaos-AM, Brasil, CEP 69041-010
	Denniel Sancho Zorzal Rossi	Jefe Subdivisión de telecomunicaciones	rossidszr@cindacta2.gov.br	(55 41) 3251-5341	CINDACTA 2 – Curitiba Departamento de Control del Espacio Aéreo (DECEA) Av. Erasto Gaertnet, 1000, Bacacheri Curitiba-PR, Brasil, CEP 82510-901

STATE / ESTADO	Name / Nombre	Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
	Thiago Batista De Oliveira Roma	Adjunto Sección de Enlaces	tten@cindacta3.aer.mil.br	(55 81) 2129 8181	CINDACTA III Departamento de Control del Espacio Aéreo (DECEA) Av. Cent Alberto Santos Dumont s/n Jordao, Recife, Pernambuco, Brasil, CEP 51250 000
BOL	Hernando Lara, AASANA	Jefe Unidad Nacional CNS AASANA	nanos_24@hotmail.com	(591 2) 212-7959	Aeropuerto Internacional El Alto, Bloque Técnico AASANA
	Remigio Blanco, AASANA	Responsable de Telecomunicaciones AASANA	rblanco@aasana.bo	(591 2) 237-0340	Aeropuerto Internacional El Alto, Bloque Técnico AASANA
CHI	Christian Vergara Leyton, DGAC	Supervisor de Mantenimiento Técnico Centro de Control de Santiago	cvergara@dgac.cl	(56 2) 836-4005; (56 2) 836-4011; (56 2) 644-8345	Avenida San Pablo 8411, Comuna de Pudahuel, Santiago, Chile
	Pedro Pastrián Céspedes, DGAC	Supervisor de Mantenimiento Técnico Centro de Control de Santiago	ppastrian@dgac.cl	(56 2) 836-4005; (56 2) 836-4011; (56 2) 644-8345	Avenida San Pablo 8411, Comuna de Pudahuel, Santiago, Chile
COL	Henry Mendoza Sandoval, UAEAC	Director de Telecomunicaciones y Ayuda a la Navegación Aérea	henry.mendoza@aerocivil.gov.co	(57 1) 296-2224; (57) 317-5170996	Aeropuerto Internacional El Dorado, Av. El Dorado N° 112-09 Edif. C.N.A. (Centro Nacional de Aeronavegación)
	Gabriel Enrique Guzmán Pachon	Jefe del Grukpo de Sistemas de Comunicaciones	gabriel.guzman@aerocivil.gov.co	(571) 296-2940; (57) 317-656 7202	Aeropuerto Internacional El Dorado, Av. El Dorado N° 112-09 Edif. C.N.A. (Centro Nacional de Aeronavegación)
ECU	Rául Avellán Oña, DGAC	Especialista CNS 1	ravellan1@hotmail.com; raul.avellan@aviacioncivil.gob.ec	(593 4) 269-2829; (593 9) 9530-2735	Aeropuerto José Joaquín de Olmedo, Edificio Servicio para la Navegación Aérea, Av. De las Américas, Guayaquil
FRA	Michel Metzelard, SNA-AG/Centre de Contrôle de Cayenne Félix Eboué	Chef de maintenance	michel.metzelard@aviation-civile.gouv.fr	(594) 594-359317 (Tech room); (594) 594-359321 (Antenna station)	Aviation Civile, Aeroport de Cayenne Félix Eboué, 97351 Matoury, Guyane Francaise

STATE / ESTADO	Name / Nombre	Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
GUY	Mortimer Salisbury, Guyana Civil Aviation Authority	Supervisor - AN & T	mbsalisbury2000@yahoo.com	(592) 261-2569	Control Tower complex, Cheddi Jagan International Airport, Timehri, East Bank Demerara, Guyana
	Sewchan Hemchan, Guyana Civil Aviation Authority	Electrical Engineer	sewchan_hemchan@yahoo.com	(592) 261-2569	Control Tower complex, Cheddi Jagan International Airport, Timehri, East Bank Demerara, Guyana
PAR	Víctor Morán Maldonado, DINAC	Jefe Departamento Comunicacones	moranchu@gmail.com	(595 21) 758 5208	Centro de Control Unificado, Gral. Artigas y Fernando de Mompox, Mariano Roque Alonso, Paraguay
	Aldo Pereira Alcaraz, DINAC	Jefe Sección Radiocomunicaciones	aldopereira26@gmail.com	(595 21) 758 5208	Centro de Control Unificado, Gral. Artigas y Fernando de Mompox, Mariano Roque Alonso, Paraguay
PER	Luis Silva Gárate, CORPAC	Jefe del Equipo encargado de la Operac. y Mantto. del Nodo REDDIG-Lima	lsilva@corpac.gob.pe	(51 1) 515-3015; (51 1) 414-1250	Aeropuerto Internacional Jorge Chávez, Av. Elmer Faucett s/n, Callao, Perú
SUR	Mitchell Themen Ministry of Transport, Communication and Tourism, Civil Aviation Department	CNS Technical Division	mickiano@live.com	(597) 325-123; (597) 325-172; (597) 497-143	J. A. Pengel International Airport, Zanderij, district Para, Zorg en Hoop Airport, Paramaribo
	Robby Venlo Ministry of Transport, Communication and Tourism, Civil Aviation Department	Acting Director	dca@cadsur.sr	(597) 498 898	J. A. Pengel International Airport, Zanderij, district Para, Zorg en Hoop Airport, Paramaribo
TTO	Rohan Garib, Civil Aviation Authority	Executive Manager Air Navigation Services	rgarib@caa.gov.tt	(1-868) 669-4806; (1-868) 669-4706	Trinidad and Tobago Civil Aviation Authority Complex, Caroni North Bank Road, Piarco
	Veronica Ramdath, Civil Aviation Authority	Manager Telecommunications and Electronics	vramdath@caa.gov.tt; vramdath@gmail.com	(1-868) 669-4806; (1-868) 669-4706; (1 868) 681-4407	

STATE / ESTADO	Name / Nombre	Cargo	E-Mail / Correo-e	Telephone / Teléfono	Address / Dirección
URU	Marcos Vignolo, DINACIA	Director de Electrónica	mvignolo@dinacia.gub.uy	(598 2) 6010932, Ext. 4520; (598 0) 9628 4796	Aeropuerto Internacional de Carrasco Av. Wilson Ferreira Aldunate 253 Paso Carrasco, Canelones
	Miguel Vera, DINACIA	Técnico de la División Comunicaciones	miguelvera@adinet.com.uy	(598 2) 6010932, Ext. 4520	Aeropuerto Internacional de Carrasco Av. Wilson Ferreira Aldunate 253 Paso Carrasco, Canelones
VEN	Vicente FioreFedullo, INAC	Jefe Región Maiquetía-Venezuela	v.fiore@inac.gob.ve	(58 212) 355-2143; (58 212) 355-1412	Edificio ATC, 2do piso, Depto. De Comunica., Maiquetía, Edo. Vargas, Venezuela
	Luis Escobar, INAC	Coordinador de los Sistemas de Comunicaciones CNS Región Maiquetía	l.escobar@inac.gob.ve	(58 212) 355-2143; (58 212) 355-1412	Edificio ATC, 2do piso, Depto. De Comunica., Maiquetía, Edo. Vargas, Venezuela

APPENDIX C / APENDICE C

	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 D / APENDICE D

FACTORY ACCEPTANCE TEST

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**		

INEO GDF SUEZ | ICAO OACI ИКАО | Level(3)

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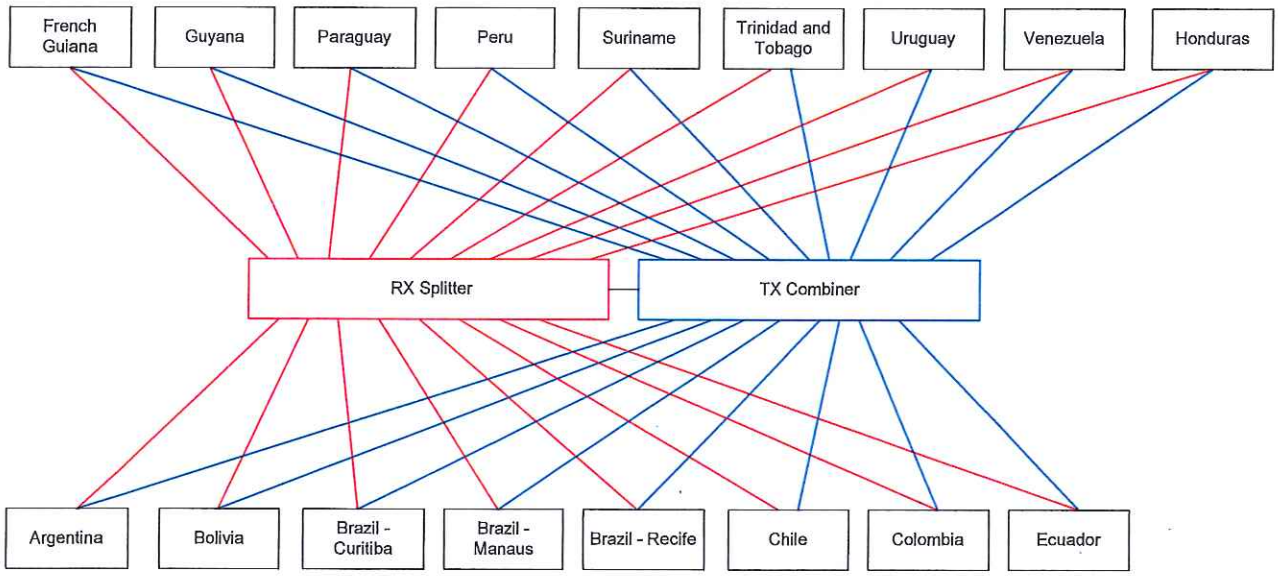
D	05/05/2014	63	File modification	I HEBRARD

Adjunto a este documento FAT se presenta:

- Rack / serial (gabinete) numero de serie (conjunto sección 2)
- Anexo A Seriales
- Anexo B diagramas
- Anexo C Observaciones sobre la FAT.

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

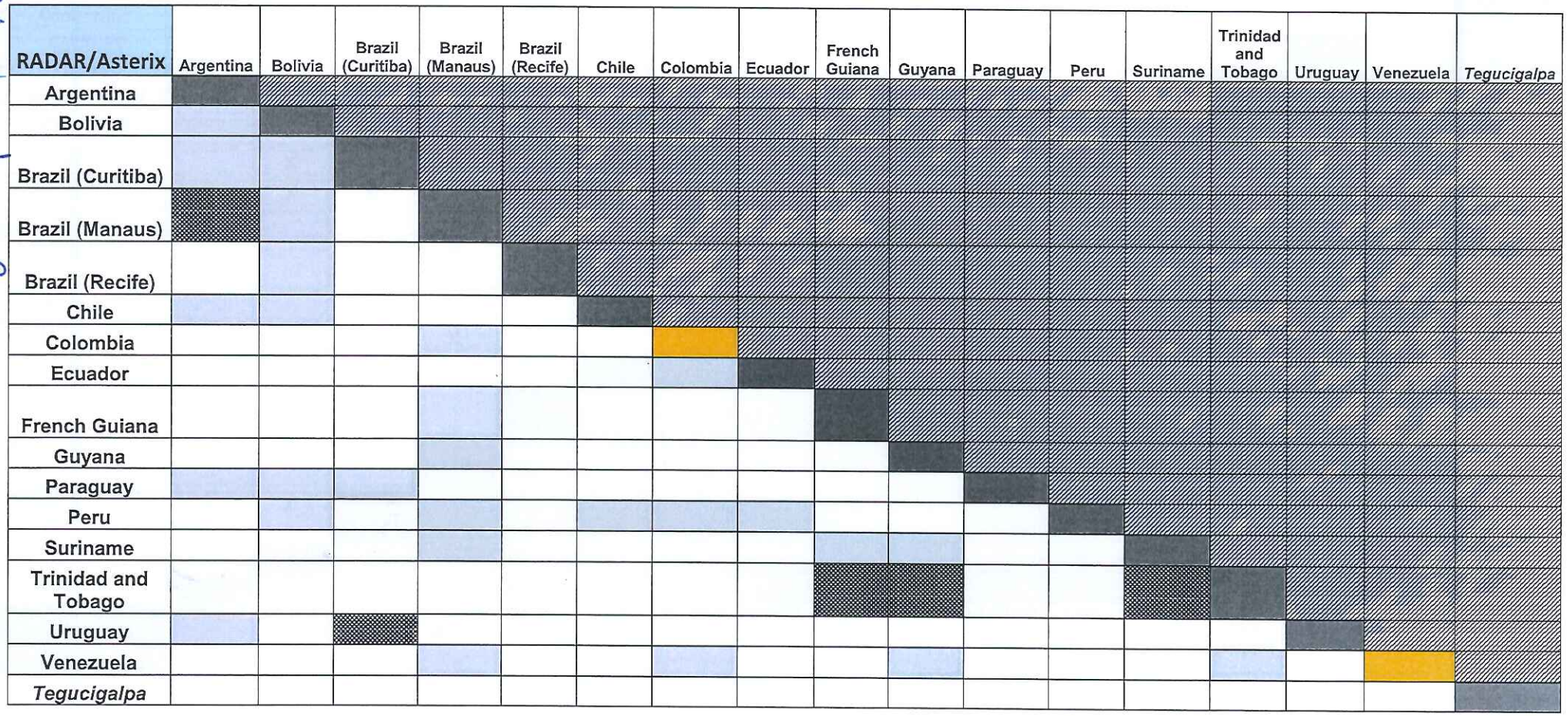


Figure 6 - RADAR / Asterix test cross matrix – Chain A

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.

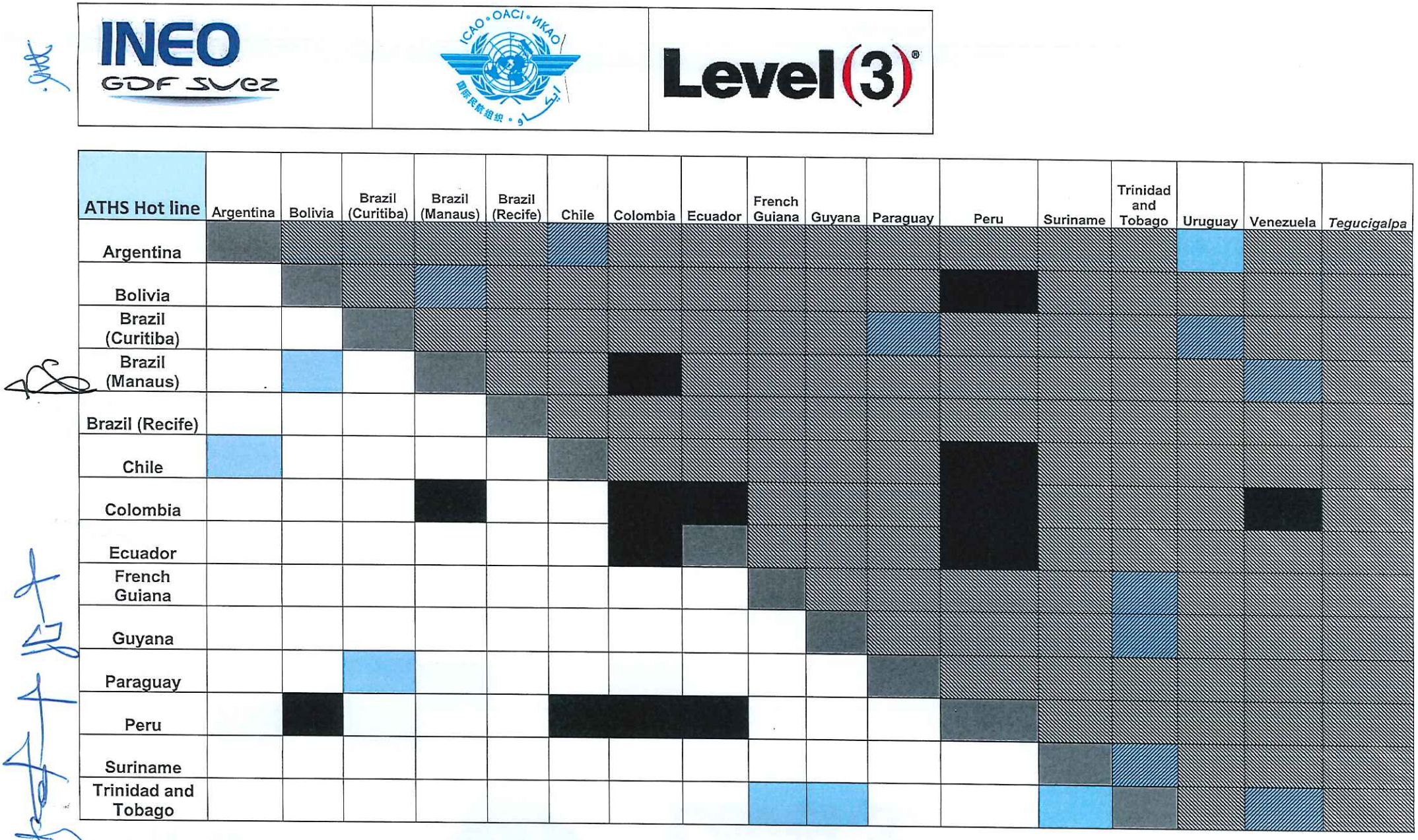
For E1 based circuits, to be connected to a VCS, this cannot be achieved nor simulated.

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 (ida y vuelta) 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

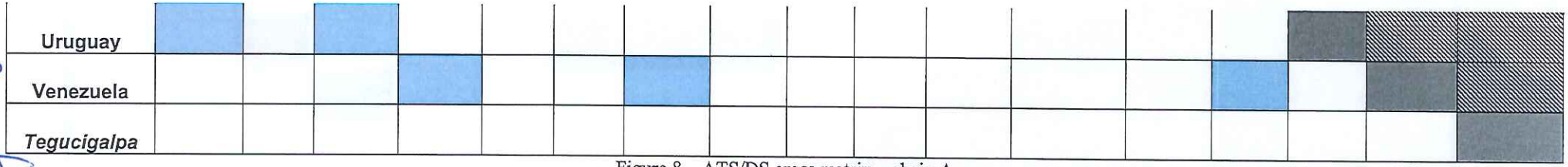
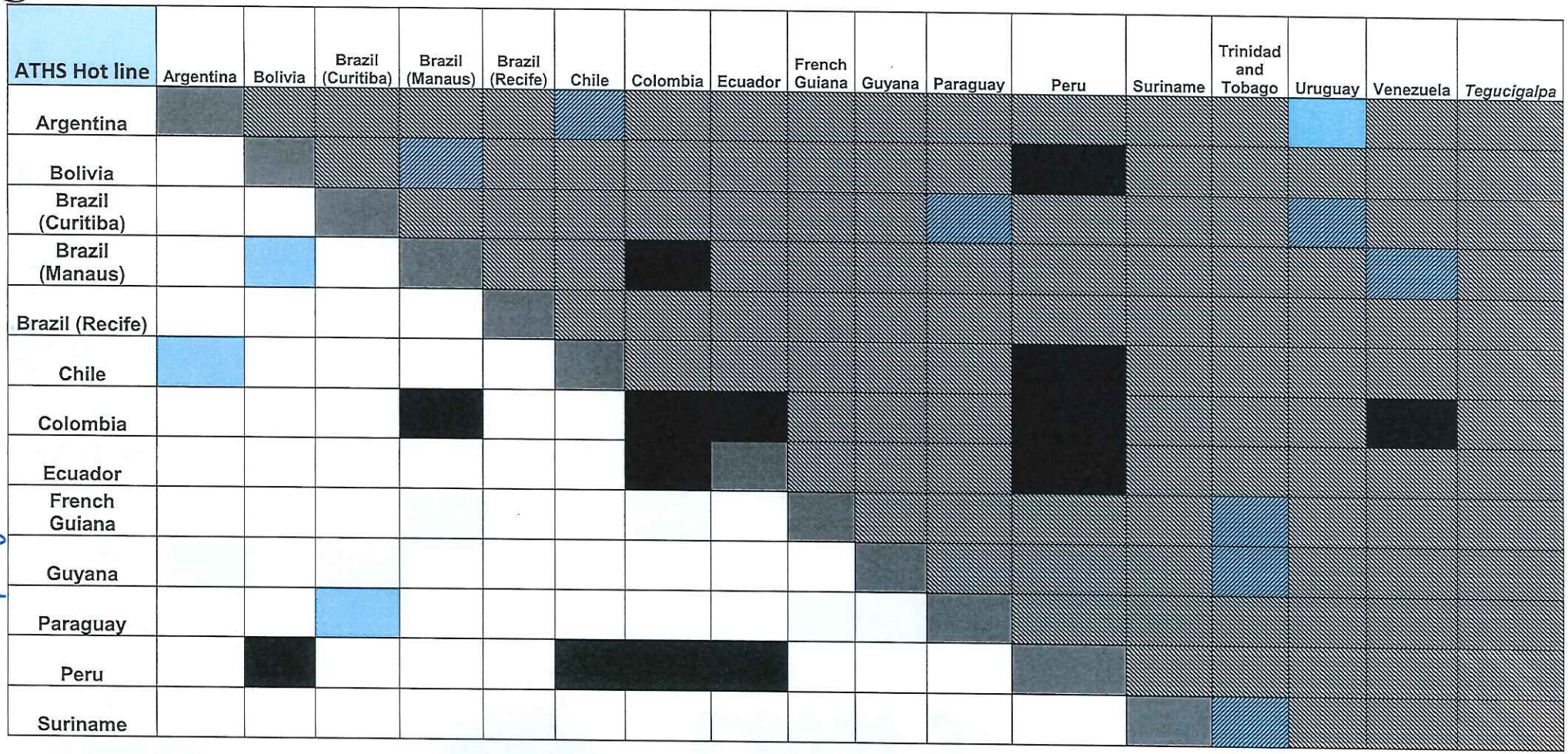


Figure 8 – ATS/DS cross matrix – chain A


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

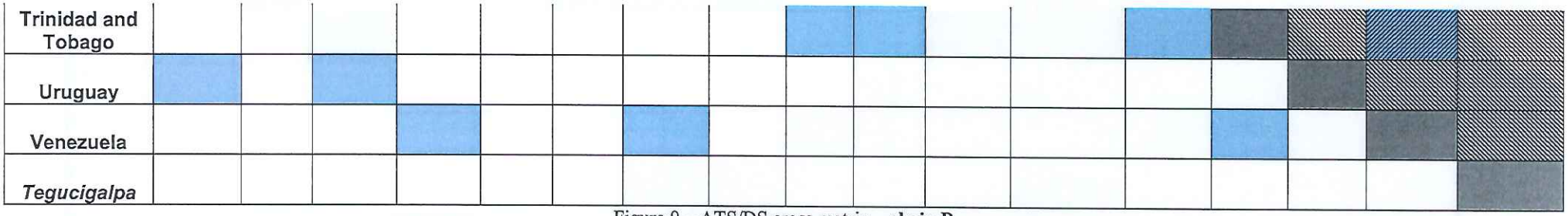


Figure 9 – ATS/DS cross matrix – **chain B**

4.4 ATS SWITCHED CIRCUITS

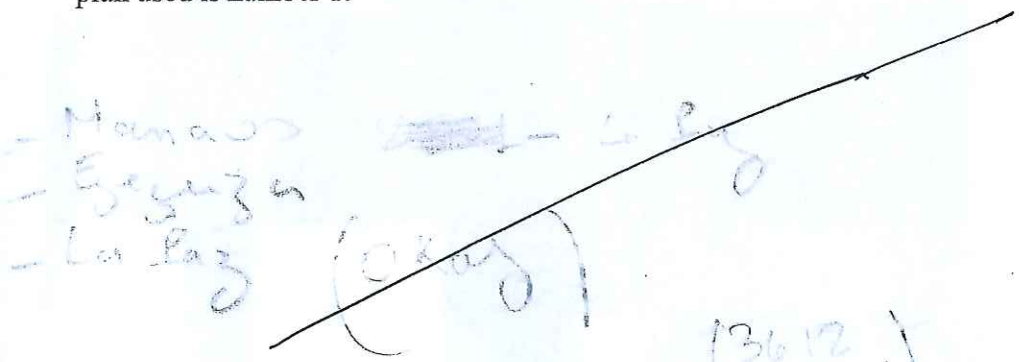
ATS switched calls are dialed. The communication is established after the user hangs up the phone and dials the remote dial number.

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 todas las pruebas fueron exitosas.

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																	

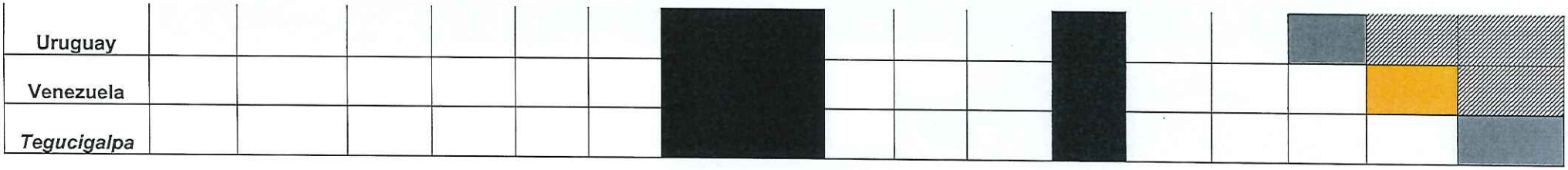
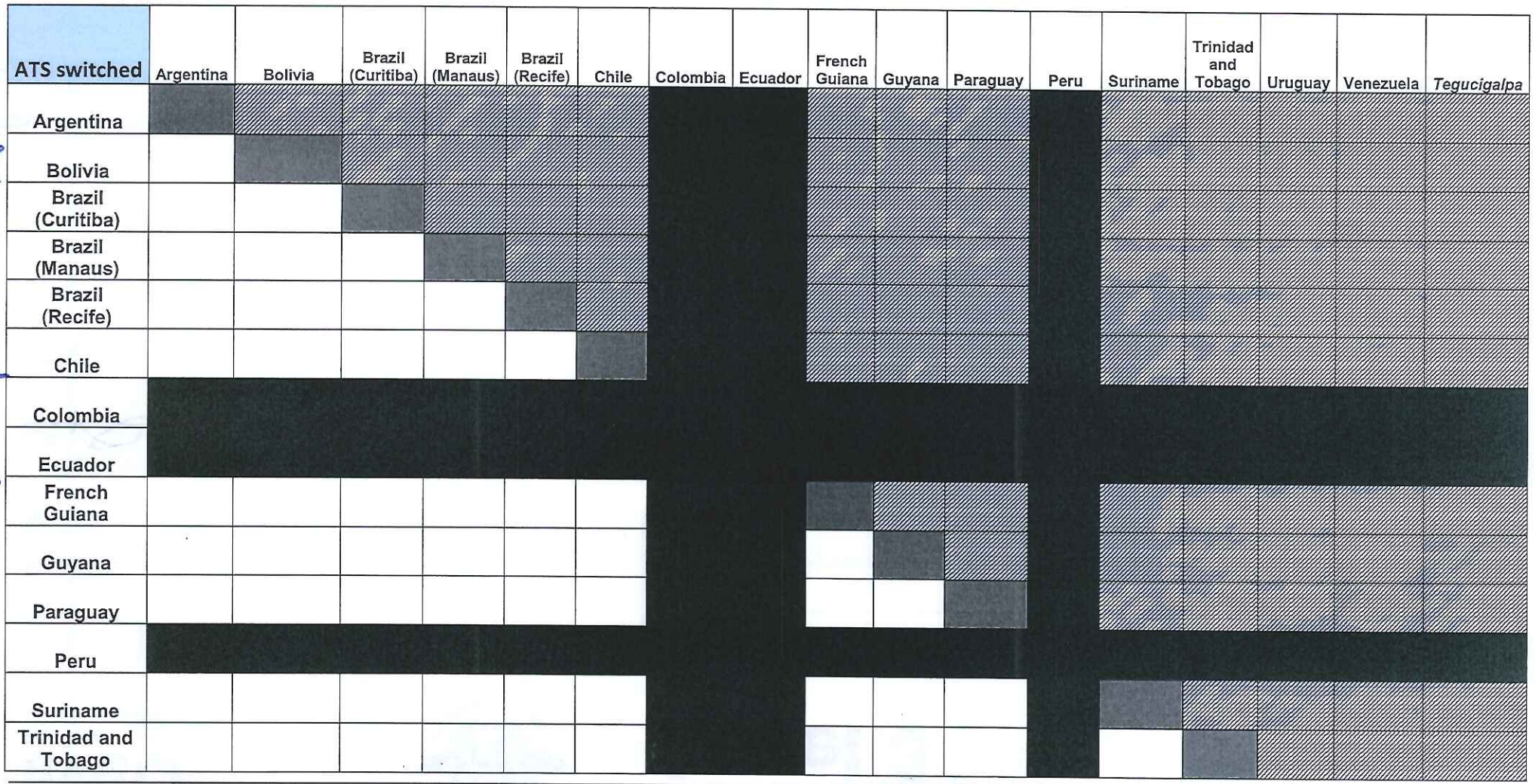


Figure 10 - ATS switched cross matrix – chain A


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

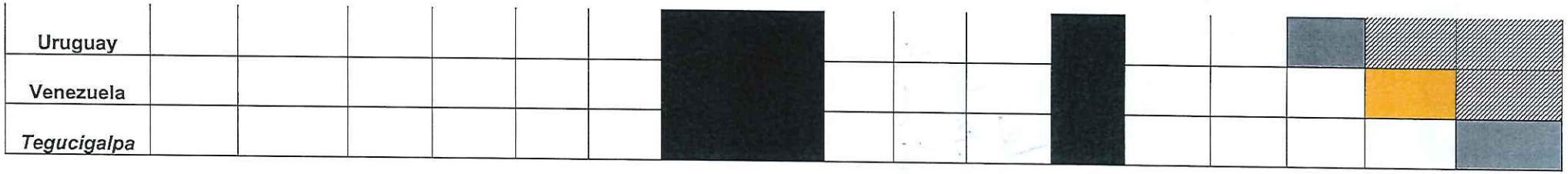


Figure 11 - ATS switched cross matrix – **chain B**

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 Madrid II simulado de

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																	
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Guyana																	
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Peru																	
Suriname																	
Trinidad and Tobago																	

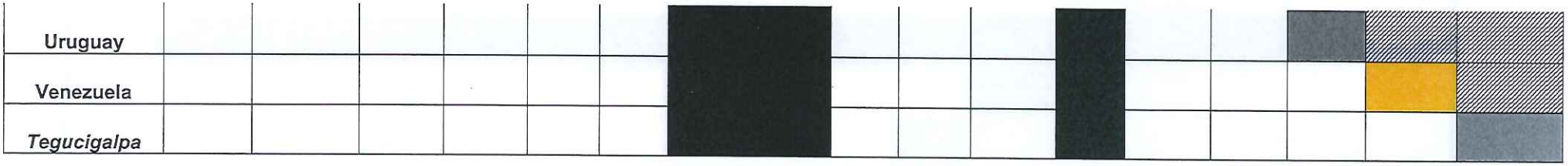


Figure 12 - Administrative cross matrix – chain A

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																	

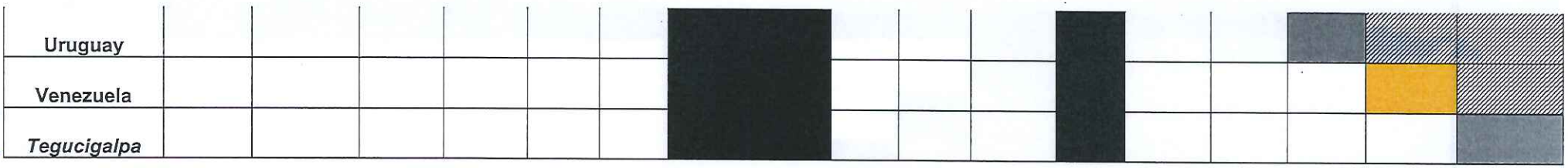


Figure 13 - Administrative cross matrix – **chain B**

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)

Falló prueba con —

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 los especificaciones técnicas.
Falló prueba con los teléfonos IP

Teleconference Ezeiza 1121	OK/KO	Comment
Sites participating: Se realizó teleconferencia con todos usuarios	NO Okey	[illegible]
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 .

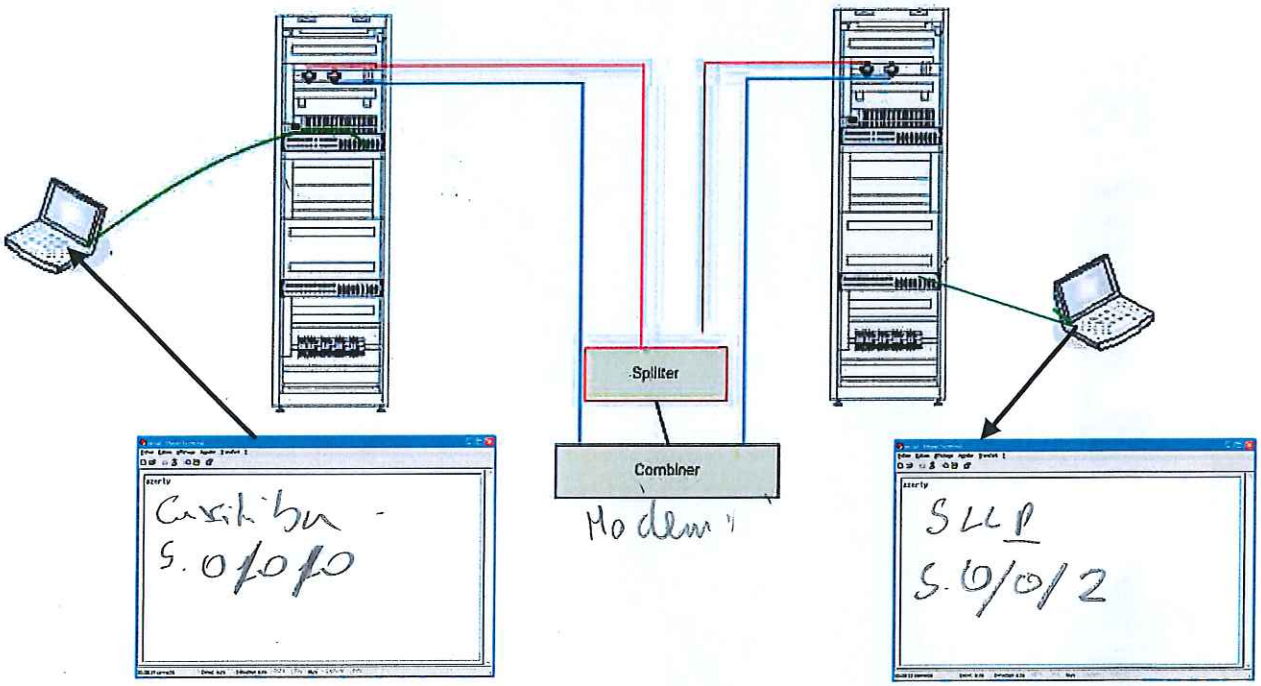


Figure 16 - AFTN test mounting

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
```

Those parameters can be reduced for a better reactivity.

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 simulando 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 realizó con éxito

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	00000000.000	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 31 . 254	00001010	00000000.000	11111.11111110
	2	Chile	10.0.32.0 /19	Primera	10 . 0 . 32 . 1	00001010	00000000.001	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 63 . 254	00001010	00000000.001	11111.11111110
	3	Brasil	10.0.64.0 /19	Primera	10 . 0 . 64 . 1	00001010	00000000.010	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 95 . 254	00001010	00000000.010	11111.11111110
	4	Uruguay	10.0.96.0 /19	Primera	10 . 0 . 96 . 1	00001010	00000000.011	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 127 . 254	00001010	00000000.011	11111.11111110
	5	Paraguay	10.0.128.0 /19	Primera	10 . 0 . 128 . 1	00001010	00000000.100	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 159 . 254	00001010	00000000.100	11111.11111110
	6	Bolivia	10.0.160.0 /19	Primera	10 . 0 . 160 . 1	00001010	00000000.101	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 191 . 254	00001010	00000000.101	11111.11111110
	7	Peru	10.0.192.0 /19	Primera	10 . 0 . 192 . 1	00001010	00000000.110	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 223 . 254	00001010	00000000.110	11111.11111110
	8	Ecuador	10.0.224.0 /19	Primera	10 . 0 . 224 . 1	00001010	00000000.111	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 0 . 255 . 254	00001010	00000000.111	11111.11111110
	9	Colombia	10.1.0.0 /19	Primera	10 . 1 . 0 . 1	00001010	00000001.000	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 31 . 254	00001010	00000001.000	11111.11111110
	10	Venezuela	10.1.32.0 /19	Primera	10 . 1 . 32 . 1	00001010	00000001.001	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 63 . 254	00001010	00000001.001	11111.11111110
	11	Guyana	10.1.64.0 /19	Primera	10 . 1 . 64 . 1	00001010	00000001.010	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 95 . 254	00001010	00000001.010	11111.11111110
	12	Surinam	10.1.96.0 /19	Primera	10 . 1 . 96 . 1	00001010	00000001.011	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 127 . 254	00001010	00000001.011	11111.11111110
	13	Guyana Francesa (France)	10.1.128.0 /19	Primera	10 . 1 . 128 . 1	00001010	00000001.100	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 159 . 254	00001010	00000001.100	11111.11111110
	20	Trinidad y Tobago	10.18.96.0 /19	Primera	10 . 18 . 96 . 1	00001010	00010010.011	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 18 . 127 . 254	00001010	00010010.011	11111.11111110
	-	VACANTE	10.1.160.0 /19	Primera	10 . 1 . 160 . 1	00001010	00000001.101	00000.00000001
				-	-		-	
				-	-		-	
				Ultima	10 . 1 . 191 . 254	00001010	00000001.101	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

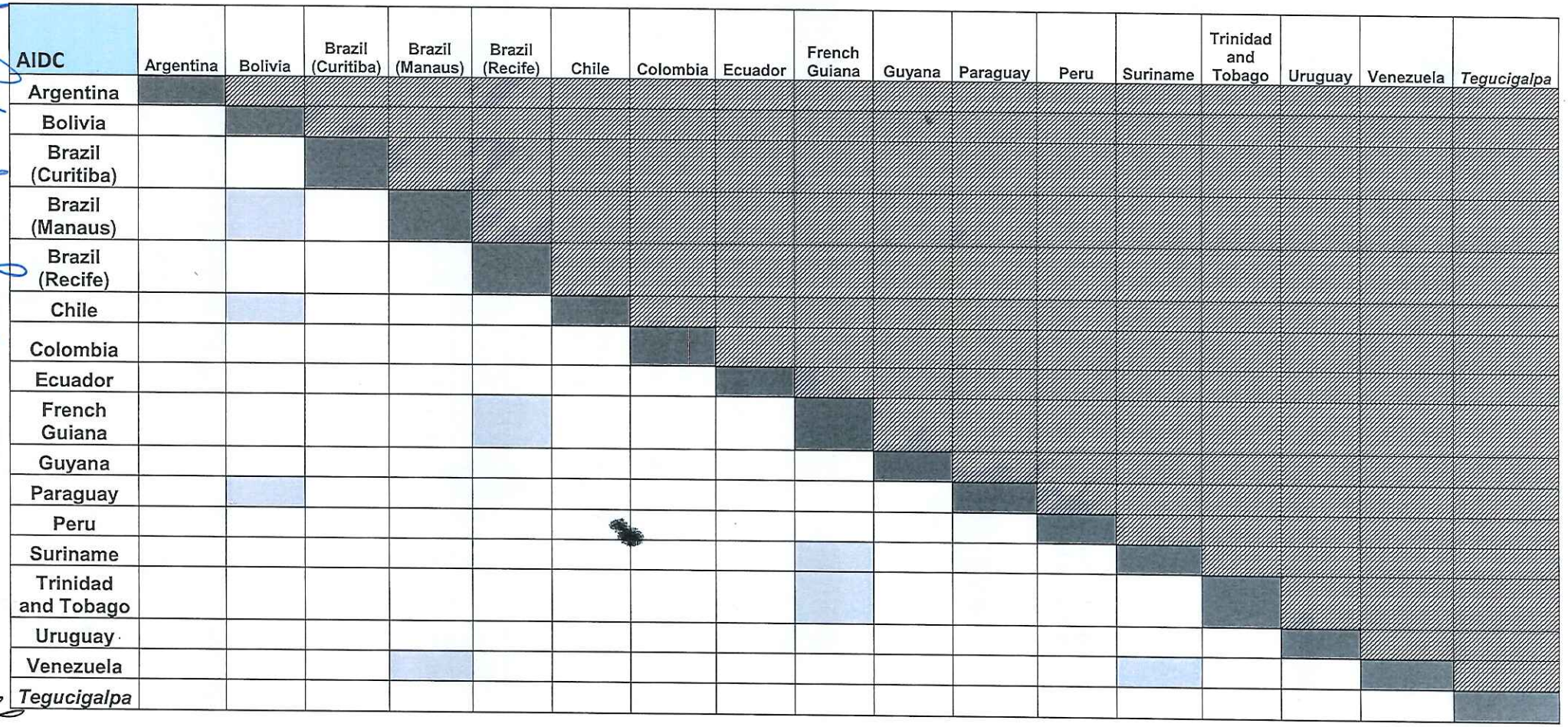
The gateway used is .254, the LAN ip addresses are .101, .102 and .121.

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

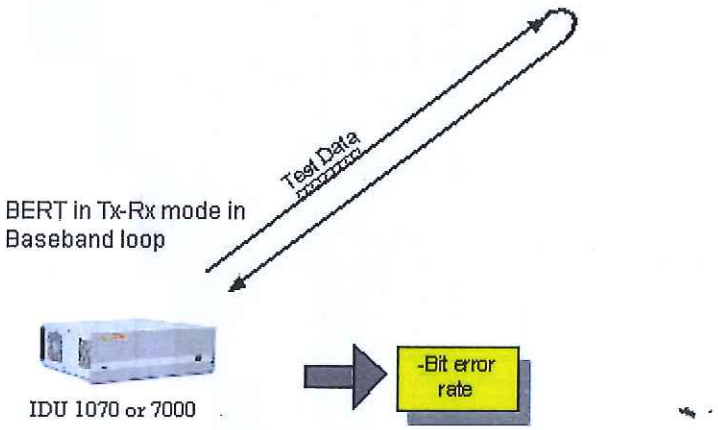


Figure 28 - Sat loop principle

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 problemas 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 # Manu	
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 Después de 43 seg pasó a B

Previous verifications		Results	
Gateway check		Gateway en B	
RSS position		Línea en 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 [illegible] [illegible] [illegible] AFTN		

Figure 31 - Cisco redundancy test table

La información 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		Pas A	
RSS position		Pas 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 mientras		

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 zgubu

Previous verifications		Results	
Gateway check		Caden B	
RSS position		Caden 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 realizan 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
7200L
7250L

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

Previous verifications		**Results**	
Gateway check		Passe en A	
RSS position		Passe en 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 simuló con Routers Cisco de la serie 1900 por falta de los Uruguay, Venezuela, Argentina y Belice.

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	OK	
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

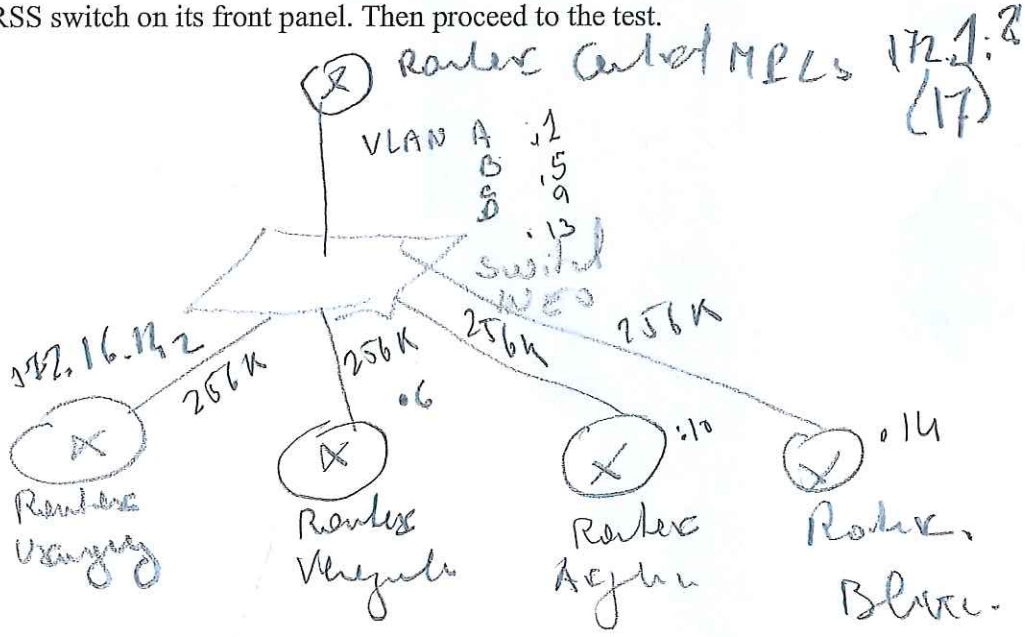
Service	DSCP	ToS
RADAR and ADS	AF41	PAMA
Asterix	AF41	PAMA
Voice	EF	DAMA real time dynamic
AFTN	AF31	DAMA
AMHS	AF31	DAMA
AIDC	AF31	DAMA
NMS	AF21	DAMA

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	0 8099
Tegucigalpa	NA

08099

020 99

A telephone must be manually connected to this interface.

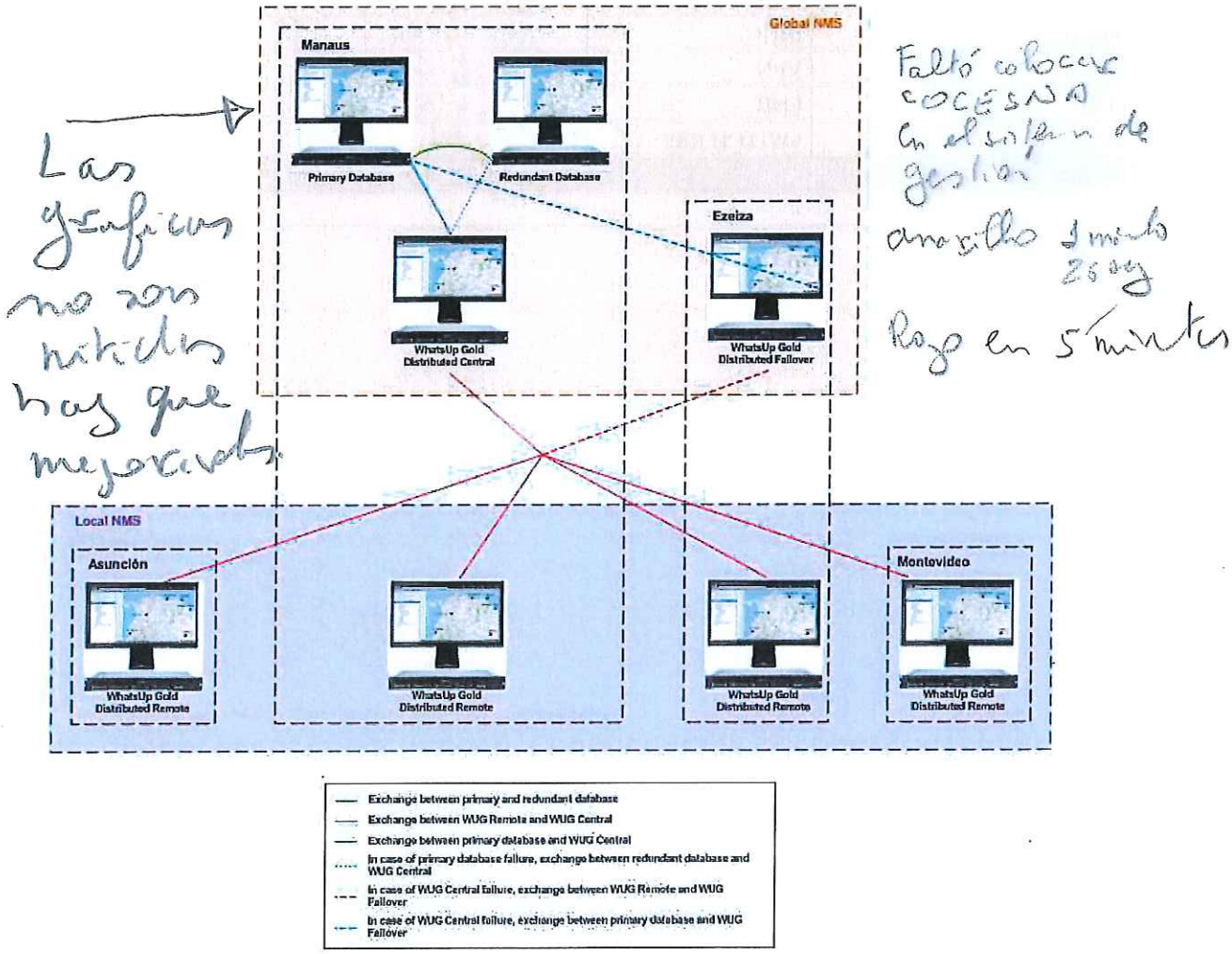
7 NETWORK MANAGEMENT STATIONS (NMS) TESTS

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	20.101.	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 Ezeiza	-	-
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	Results 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	Results 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	Results NOK
NMS Server	IP Address: 10.100.56.510 Mask:	OK	

	Gateway:		
Printer	IP Address: Mask: Gateway:		
Comments:			

7.4 ACTIVE MONITORING

Tests description:

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 -26.8
  - 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 CSCBL		
• 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		

No funciona

Comments:

NO se actualiza la información del estado de alarmas de los estaciones.

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~~ Saving?		
• 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

APPENDIX E / APENDICE E

NÚMEROS DE SERIE / SERIAL NUMBER EQUIPMENTS

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	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_2014040909 5336384.lic
					SKED-CISCO-VSAT-B	FCZ175092KG_201404090 95533347.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_2014040909 5757064.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	1150102200300008	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	1150102200300004	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				

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

ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
1. Argentina Datos ratificados mediante Nota ANAC N° 336/2014 del 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
2. Bolivia	Cnl DAEN Raul Velasco Ramos DIRECTOR GENERAL EJECUTIVO AASANA	Calle Reyes Oriz N° 74 Esp. Federico Suazo Edif. FEDEPETROL La Paz -Bolivia	1) La documentacion de la REDDIG II se debe remitr a nombre de: 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 tramites de desaduanización requerimos factura comercial (original) y el Packing list.
3. Brasil **Solicitud de enmienda mediante MSJ N°**	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**

ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
097/CERNAI/2014 **Ítem 6) corregido**			**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 CNPJ 00.394.429/0048-74. (IMPORTANTE) - 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.

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ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
			4) **Primeiramente, o exportador deverá encaminhar a Invoice e Packing List para análise. Somente depois de aprovados, deverá encaminhar o AWB ou BL. (MPORTANTE)** 5) Conhecimento de Embarque (AWB - Air Way Bill ou BL - Bill of Lading) - Emitido pela cia 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

ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
4.Chile **Datos ratificados mediante carta DGAC N° 04/3/311/3251 del 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) 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.
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
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

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ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
7.French Guyana	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
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 envió 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.
10.Perú	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. 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

ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
			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), mas el importe del flete pagado e importe del seguro. - **Lista de Contenido** (Packing list) - Consignado a nombre de Corporación Peruana de 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

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ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
			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. **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.

ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
			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 destino, de acuerdo a lo estipulado en el contrato.
11.Surinam	Ministry of Transport, Communication and Tourism. DeDepartment of Civil Aviation Suriname Att: Robby Venlo	Coesewijnestraat #1, Zorg & Hoop Airport.	Custom clearance requirement in Surinam: On this respect , the Consortium INEO Level 3 is going to supply the followin information: a) BL original and 2 copies 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.
12 Trinidad & Tobago	Trinidad and Tobago Civil Aviation Authority Attention: Director General Tel: 868 669 470/4302/4806 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.
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

APPENDIX D / APENDICE F

ESTADO	NOMBRE	DIRECCIÓN	REQUERIMIENTOS DE ADUANAS
14. Venezuela **Datos ratificados mediante carta N° PRE-ORI-GRO 2778/2014 del 26/5/14** **Correo-e corregido**	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 Mercancias* *Contrato, Orden de Compra, Convenio o cualquier otro documento que acredite la propiedad de los bienes.* 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 Gravamenes 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 relacion 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.

APPENDIX G / APENDICE G

INTELSAT

FRECUENCIAS REDDIG II / REDDIG II FREQUENCIES

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