Organización de Aviación Civil Internacional
Oficina Regional Sudamericana - Proyecto Regional RLA/03/901
Sistema de Gestión de la REDDIG y Administración del Segmento Satelital
Decimonovena Reunión del Comité de Coordinación (RCC/19)
Lima, Perú, 7 al 9 de marzo de 2016

Cuestión 3 del Orden del Día: **Informe de las actividades realizadas hasta la fecha desde la última reunión del Comité de Coordinación**

(Nota de estudio presentada por la Secretaría)

RESUMEN	
Esta nota presenta información sobre el avance en la implantación de las actividades acordadas en la última reunión del Comité de Coordinación (RCC/18) a ser incluidas en el plan de trabajo del año 2015.	
Referencia • Contrato REDDIG 22501200; • Informe de la Decimoctava Reunión del Comité de Coordinación de la REDDIG (RCC/18) (Lima, Perú, 2-4 de marzo de 2015); • Informe primera reunión de coordinación MEVA III / REDDIG II (Oranjestad, Aruba, 23-26 de mayo de 2015); e • Informes de teleconferencias realizadas (11 de diciembre de 2015 y 25 de enero de 2016).	
Objetivos estratégicos de la OACI:	*A – Seguridad operacional; y* *B – Capacidad y eficiencia de la navegación aérea*

1. **Antecedentes**

1.1 Las principales actividades acordadas en la última reunión del Comité de Coordinación (RCC/18) a ser incluidas en el plan de trabajo de 2015 y adicionales a las de operación, soporte y mantenimiento de la red, fueron las siguientes:

a) Programa de entrenamiento de la REDDIG II;
b) Operación de la REDDIG II y análisis de implantación de nuevos servicios; e
c) Instalación y operación de la interconexión MEVA III / REDDIG II.

1.2 Asimismo, se presentan en esta nota de estudio los aspectos logísticos en la REDDIG desde la RCC/18 hasta la fecha.

2. **Análisis**

PROGRAMA DE ENTRENAMIENTO DE LA REDDIG II

2.1 En referencia a las actividades de entrenamiento, se realizaron los siguientes cursos:

a) Curso especializado sobre el software de gestión “WhatsUp Gold”; y
b) Curso básico de routers y switch IP CISCO.

Curso especializado sobre el software de gestión "WhatsUp Gold"

2.2 La reunión RCC/18 consideró la necesidad de llevar a cabo un curso avanzado sobre el Whats Up Gold, la aplicación de software utilizada para el monitoreo y gestión de los equipos que conforman la REDDIG II, como resultado de la recomendación formulada por los participantes en el curso en fábrica de la REDDIG II, que informaron que la capacitación recibida en fábrica sobre el WhatsUp Gold era básica y que se requeriría un curso avanzado.

2.3 En este sentido, la RCC/18 aprobó la realización de un curso especializado sobre el software de gestión WhatsUp Gold, que se llevó a cabo en la ciudad de Manaos, Brasil, del 21 al 24 de abril de 2015, en las instalaciones de la Sección de Actualización Técnica del Cuarto Centro Integrado de Defensa Aérea y Control del Tránsito Aéreo – CINDACTA IV.

2.4 El curso fue dictado por el Sr. Camilo Luis Zamai, Soporte Técnico Corporativo, de la empresa Mentat Soluções Ltda., SP, Brasil. Asistieron al curso 8 Estados miembros (Argentina, Brasil, Chile, Ecuador, Paraguay, Perú, Trinidad & Tobago y Uruguay) con un total de 21 participantes.

2.5 El programa del curso se presenta como **Apéndice A** 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. El costo del curso ha sido de USD 4,767.00, este costo no incluye la traducción simultánea, así como las becas otorgadas a los participantes.

Curso básico de routers y switch IP CISCO

2.6 La reunión RCC/18, como resultado de los cursos de entrenamiento sobre la REDDIG II llevados a cabo en el 2014, consideró la necesidad de implantar un curso básico de routers y switches IP CISCO para el personal a cargo del mantenimiento y operación de la REDDIG II, debido a que se tiene un buen número de técnicos que no posee una base sólida de conocimiento sobre redes IP y sus equipos asociados (routers y switches CISCO).

2.7 En este sentido, la RCC/18 procedió a la aprobación de la ejecución de un curso básico de enrutadores y switches IP de CISCO, cuyas descripciones del contenido se presentan como **Apéndice B** de esta nota de estudio. El curso tuvo como objetivo proveer habilidades y conocimientos necesarios para instalar, operar y solucionar problemas de conectividad en la REDDIG II, incluyendo la configuración de switches, routers y la implantación de la seguridad respectiva.

2.8 El curso básico completo consta de dos partes independientes y, en vista del costo y duración de los mismos, se ha considerado realizarlo en dos partes: El primero, llamado "Interconnecting Cisco Network Devices Part 1 (ICND1) que se dictó del 9 al 13 de noviembre de 2015 y el segundo, "Interconnecting Cisco Network Devices Part 2 (ICND2)", se llevará a cabo del 4 al 8 de abril de 2016.

2.9 El costo del curso ICDN1 tuvo un USD 8,000.00 (OCHO MIL DÓLARES AMERICANOS) en el mismo no se incluye el costo de traducción simultánea, así como las becas de los participantes.

2.10 Asistieron al curso ICDN1 10 Estados miembros de la REDDIG II (Argentina, Brasil, Chile, Ecuador, Colombia, Paraguay, Perú, Surinam, Trinidad & Tobago y Uruguay) con un total de 16 participantes. El contenido de este curso se colocó en la página WEB de la REDDIG www.lima1.icao.int/reddig.

OPERACIÓN DE LA REDDIG II Y ANÁLISIS DE IMPLANTACIÓN DE NUEVOS SERVICIOS

Desempeño de la red satelital

2.11 La REDDIG II presentó problemas iniciales de funcionamiento en algunos servicios como el AFTN, AMHS, algunos circuitos orales ATS y administrativos, la red de telefonía IP para el servicio ATFM, el servicio de gestión (NMS) y el congelamiento en algunos de los modem satelitales.

2.12 Con el tiempo, la mayoría de las fallas se fueron solucionando, alcanzando a la fecha un rendimiento estable con alta disponibilidad. La red presenta todavía algunos problemas como el congelamiento en forma aleatoria en algunos de los modem satelitales (Skywan).

2.13 Con respecto a esta falla, INEO reportó que, de acuerdo con la investigación de NDsatCom, el fabricante del MODEM satelital, hay 90% de probabilidades que el problema se deba a falla de sincronización entre la parte RX RF y los módems satelital (Skywan).

2.14 Para resolverlo, NDSatCom informó que se requiere reemplazar todos los LNBs existentes (que actualmente generan su propia frecuencia intermedia de 10MHz internamente) por nuevos LNBs (que reciban la frecuencia intermedia de 10Mhz en forma externa desde el Modem satelital).

2.15 Adicionalmente, NDSatCom recomienda incorporar un filtro RF en el LNB para evitar perturbaciones que puedan provenir de fuentes externas como radares y/o transpondedores de aeronaves en cada aeropuerto o de comunicaciones móviles (WIMAX). Dicho filtro no será necesario en todos los lugares, pero se requerirá un análisis específico de cada punto.

2.16 Para la solución, INEO tomará las siguientes acciones sin costo para los Estados miembros de la REDDIG II:

Fase 1

a) Reemplazo de dos LNBs y la adición de filtros RF en cuatro puntos (Manaos, Recife, Ezeiza y Lima).
b) El reemplazo de items se realizará primero en Manaos para asegurar que las modificaciones no ocasionen otros problemas de hardware.
c) Luego, se efectuará el reemplazo de items en los otros tres puntos.
d) Una vez que los cuatro puntos estén modificados, NDSatCom hará un nuevo análisis del sistema para verificar si ha habido una reducción significativa de errores TDMA CRC (*).

** La modificación en estos cuatro puntos iniciales es solamente el punto inicial de observación. La completa reducción de los errores TDMA CRC solo puede ser observada cuando todos los nodos se hayan modificado.*

Fase 2

a) De notarse una reducción significativa de errores TDMA CRC, las mismas modificaciones se harán en el hardware de todos los puntos restantes.
b) A continuación, la red completa estará bajo observación durante algunas semanas para verificar que el problema se haya resulto completamente.
c) De lo contrario, NDSatcom tendrá que hacer una investigación más profunda en algunos puntos importantes (por ejemplo, Manaos y/o otros por definir).

2.17 INEO informó que las modificaciones de hardware que se realizarán en todos los puntos, no deberían tomar más de 2 días por cada lugar. Un técnico de INEO estará cargo de esta tarea.

2.18 INEO ya adquirió el nuevo modelo de LNBs y filtros para la primera fase y procedió a la sustitución del LNB en el nodo de Manaos el 11 de enero de 2016. Se espera que la sustitución de los LNB y la instalación de los filtros RF en los restantes nodos sea para mediados de marzo de 2016. Como **Apéndice C** de esta nota de estudio, se puede encontrar el procedimiento de reemplazo del LNB y de la instalación del filtro RF, así como las características técnicas de ambos.

2.19 Una vez implantada la solución y en caso de no presentarse más congelamientos en los Modem satelitales por un periodo de un mes y reducirse en forma significativa los errores TDMA CRC, se procederá a realizar la aceptación final de la red satelital.

2.20 Como **Apéndice D** de esta nota de estudio se presenta un cuadro en Excel con el estado de todos los puntos pendientes de la REDDIG II desde la fecha de realización de la Prueba de Aceptación Provisional de la REDDIG II (enero 2015) y otras fallas ocurridas después de la PSAT.

2.21 De los últimos eventos ocurridos en la REDDIG II que todavía no han sido solucionados, se tiene el cambio de la referencia de sincronización desde el NCC de Manaos al NCC de Ezeiza sin intervención del Administrador de la REDDIG II y los bajos niveles de recepción RF en Ezeiza, Montevideo y Guayaquil.

Actividades correspondientes a la implantación del nuevo nodo de Brasilia

2.22 Para la implantación del nodo de Brasilia, se procedió a realizar una enmienda III al contrato 22501200 de la REDDIG II. Esta enmienda se firmó el 3 de agosto de 2015 por parte de representantes de INEO, LEVEL 3 y la Oficina de Cooperación Técnica de la OACI. Copia de la Enmienda III del Contrato se presenta como **Apéndice E** de esta nota de estudio.

2.23 El nuevo nodo de Brasilia está compuesto, como todos los nodos de la REDDIG II, por cuatro partes con dos canales redundantes para garantizar una alta disponibilidad en la red. La primera parte son los equipos *outdoor* compuestos por una antena nueva de 3.8m de diámetros, los elementos del receptor LNB y el SSPA para la transmisión (amplificador de 40Watts). La segunda parte, que representa la más importante del nodo, está conformada por los routers CISCO 2901 como interfaz a los servicios y los módems satelitales (SKYWAN 1070) para transmitir y recibir la información satelital. Las otras dos partes consisten en el sistema de monitoreo y el router VPN para conexión externa.

2.24 Los equipos para el acceso a la red terrestre de fibra óptica de LEVEL 3 consiste en dos routers 2901 que actúan en caso de falla en la red satelital. El ancho de banda de acceso a la red terrestre como en los otros nodos de la REDDIG es de 256Kbits/seg.

2.25 Los servicios en el nodo de Brasilia son los siguientes un circuito AFTN con Guyana, 11 circuitos AMHS (todos los Estados adyacentes a Brasil y el circuito con Atlanta a través de la interconexión MEVA III REDDIG II). Con respecto a los circuitos orales, se tienen tres circuitos administrativos conmutados y cuatro circuitos orales ATS conmutados. El **Apéndice F** de esta nota de estudio presenta el detalle de la configuración de los servicios en el nodo de Brasilia.

2.26 Los trabajos de instalación del nuevo nodo de la REDDIG en Brasilia iniciaron en el mes de enero de 2016 y su instalación se completó el 3 de febrero de 2016.

2.27 El 20 de noviembre de 2015 se realizaron las pruebas en fábrica con resultado satisfactorio, procediéndose a su aceptación y firma. Las pruebas fueron realizadas por un representante de Brasil y el gerente técnico del proyecto REDDIG II. Los documentos correspondientes a la PSAT del nodo de Brasilia se encuentran en la página WEB de la REDDIG II www.lima1.icao.int/reddig.

Servicio de enlace de datos a través de la REDDIG II

2.28 Como seguimiento a la Conclusión 18/2 de la RCC/18 - *Pruebas de acceso al servicio de enlace de datos de SITA a través de la REDDIG II por parte de los ANSP*, desde el 8 de octubre de 2015 el servicio de enlace de datos ya está pasando por la REDDIG II; mayores detalles se presentan en otra nota de estudio en esta Reunión.

Desempeño de la red terrestre (LEVEL 3)

2.29 Los servicios de la red terrestre (LEVEL 3) fueron probados y aceptados a principios del mes de julio de 2015 por todos los puntos focales de la REDDIG II. En vista que la red satelital todavía seguía teniendo aspectos pendientes sin resolver, como se explica detalladamente en la sección desempeño de la red satelital de esta misma nota de estudio, no se podía proceder a realizar la aceptación final de la red terrestre en vista que la aceptación final de la REDDIG II se presentaba como un todo en el contrato.

2.30 Considerando que si no se procedía a la aceptación final de los servicios terrestres, el proveedor LEVEL 3 suspendería los servicios y considerando que los retrasos en la implantación de los aspectos pendientes en la red satelital no tenían nada que ver con los servicios de la red terrestre, todos los miembros de la REDDIG decidieron que se procediera a realizar dos pruebas de aceptación final, una con LEVEL 3 y otra, con INEO.

2.31 En este sentido, la Sección de Cooperación Técnica de la OACI procedió a realizar una enmienda al contrato de la REDDIG II (Enmienda IV al Contrato 22501200) para que en el mismo constaran los cambios indicados en el párrafo anterior de esta nota de estudio. Copia de la Enmienda IV y del certificado de aceptación final de la red terrestre se presentan como **Apéndice G** de esta nota de estudio.

2.32 De esta forma, a finales de diciembre de 2015, se completaron los 6 meses de servicios establecidos en el Contrato y un nuevo periodo de servicio directamente con LEVEL 3 se inició en enero de 2016 por un período de 4 años y medio, tal como se especifica en el contrato de la REDDIG II**.**

INSTALACIÓN Y OPERACIÓN DE LA INTERCONEXIÓN MEVA III / REDDIG II

2.33 Con el fin de coordinar las actividades finales requeridas para la implantación de los aspectos pendientes en la interconexión de las nuevas redes MEVA III – y REDDIG II, la implantación de nuevos servicios en la interconexión y la revisión del Memorando de Entendimiento (MoU), que establece las coordinaciones técnicas, operacionales y administrativas entre la red MEVA III y REDDIG II, se realizó la primera reunión de coordinación MEVA III / REDDIG II en Oranjestad, Aruba, del 25 al 26 de mayo de 2015.

2.34 La reunión de coordinación contó con la presencia de 29 delegados de 9 Estados/Territorios de las Regiones CAR y SAM, un organismo internacional (COCESNA), el proveedor de servicio de la MEVA III y el Administrador de la REDDIG II. De los aspectos más importantes obtenidos de la reunión, se resalta:

a) la formulación de acciones para completar la implantación de circuitos de voz conmutados y datos (AFTN) previstos en la interconexión MEVA III / REDDIG II.
b) Acciones para completar la implantación de las líneas calientes en Bogotá y Caracas y los circuitos AFTN con Atlanta desde Bogotá y Caracas.
c) El análisis para implantar nuevos circuitos en la interconexión MEVA III / REDDIG II a corto plazo en el periodo 2015 a 2017. Los circuitos considerados fueron los siguientes:

No.	Circuitos requeridos	Fecha de implementación estimada
1	Intercambio datos radar entre Curacao y Venezuela	Antes de 2017
2	Intercambio de datos radar entre Colombia y Panamá	A mediados de 2016
3	Implementación de circuitos SAM AMHS con Atlanta • Caracas - Atlanta • Brasilia - Atlanta • Lima - Atlanta	2016-2017
4	Circuito AMHS Bogotá-Panamá	2016
4	Implantación circuito AMHS Atlanta- Piarco a través del nodo REDDIG II de COCESNA	2016
5	Circuito AFTN Piarco-Curacao	Después del 15 de junio de 2015

2.35 Al respecto, la reunión formuló la Conclusión MIII/RII 1/2 - *Confirmación de requerimientos de nuevos circuitos en la interconexión*, en la cual se solicita a los Estados involucrados que confirmen la implantación de los circuitos indicados en la tabla indicada en el párrafo 2.3, para iniciar las coordinaciones necesarias para su implantación.

2.36 Finalmente, esta reunión revisó y aprobó el MoU entre los Estados/Territorios/Organización Internacional miembros de las redes MEVAIII y REDDIG II para los procesos de coordinaciones y cooperación de la interconexión MEVA III – REDDIG II a través de la Conclusión M III/ RII 1/3. Como **Apéndice H** de esta nota de estudio se presente el MoU enmendado.

ASPECTOS LOGÍSTICOS DE LA REDDIG

2.37 Las operaciones logísticas, originadas principalmente por averías en los nodos, incluyen el envío de equipos o partes del lote de repuestos de la REDDIG desde el almacén situado en la Oficina Regional de la OACI en Lima o de cualquier otro nodo hacia los nodos que los requieran, incluyendo las coordinaciones con las fábricas para la reparación de equipos, pago del transporte y de los costos involucrados, así como la coordinación y apoyo a los Estados para las operaciones de importación y exportación involucradas.

2.38 Desde la RCC/18 hasta la fecha, se realizaron con la nueva REDDIG II cinco (5) operaciones logísticas. El resumen de las averías y partes de los equipos se presentan en el **Apéndice I** de esta nota de estudio.

2.39 En el **Apéndice J** se presentan las estadísticas correspondientes al número de las principales atenciones a los nodos de la red, así como su distribución en cuanto al tipo de equipo que dio origen a la atención desde la RCC/18.

2.40 En el **Apéndice K** se presenta el cuadro de disponibilidad de la red desde el año 2004 hasta fines del año 2015. En el mismo, se puede observar que ha habido una disminución de la disponibilidad debido a la puesta en marcha de la red REDDIG II y sus problemas iniciales.

3. **Acción sugerida**

3.1 Se invita al Comité de Coordinación a:

a) Tomar nota de la información suministrada;
b) analizar las actividades realizadas desde la RCC/18 hasta la fecha que se presentan en la sección 2 y los Apéndices A a K de esta nota de estudio; y
c) analizar cualquier otro aspecto que considere necesario con respecto a esta cuestión del orden del día.

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APPENDIX A / APENDICE A

Programa: **Curso especializado sobre el software de gestión "WhatsUp Gold**

Interconnecting Cisco Network Devices Part 1 (ICND1)

Quién debería asistir

Target candidates:
Individuals seeking the Cisco CCENT certification, or Cisco CCNA Routing and Switching certification. The course is also appropriate for support technicians involved in the basic installation, operation, and verification of LAN networks.

Key job tasks:
Configure: Implement the identified solution by applying the planned implementation processes using Cisco IOS commands and applications in the correct order to the selected devices and portions of the network.
Verify: Use the appropriate show commands and applications to ensure that the solution was correctly implemented and is performing as desired.
Job roles: Entry-level network engineer, network administrator, network support technician, and help desk technician

Prerrequisitos

The knowledge and skills that a learner must have before attending this course are as follows:

- Basic computer literacy
- Basic PC operating system navigation skills
- Basic Internet usage skills
- Basic IP address knowledge

Objetivos del curso

Upon completing this course, you will be able to meet these objectives:

- Describe network fundamentals and build simple LANs
- Establish Internet connectivity
- Manage network device security
- Expand small- to medium-sized networks with WAN connectivity
- Describe IPv6 basics

Contenido del curso

Interconnecting Cisco Networking Devices, Part 1 (ICND1) v2.0 is a five-day, instructor-led training course that teaches learners how to install, operate, configure, and verify a basic IPv4 and IPv6 network, including configuring a LAN switch, configuring an IP router, connecting to a WAN, and identifying basic security threats. Optionally, this course can be followed by the Interconnecting Cisco Network Devices Part 2 (ICND2) course, which covers topics in more depth and teaches learners how to perform basic troubleshooting steps in enterprise branch office networks, preparing learners for Cisco CCNA certification.

Esquema Detallado del Curso

Day 1: Course Introduction, Building a Simple Network

- Course Introduction
- Module 1: Building a Simple Network
- Lesson 1-1: Exploring the Functions of Networking
- Lesson 1-2: Understanding the Host-to-Host Communications Model
- Lesson 1-3: Introducing LANs
- Lesson 1-4: Operating Cisco IOS Software
- Lesson 1-5: Starting a Switch
- Lab 1-1: Performing Switch Startup
- Lesson 1-6: Understanding Ethernet and Switch Operation
- Lesson 1-7: Troubleshooting common Switch Media Issues
- Lab 1-2: Troubleshooting Switch Media Issues

Day 2: Establishing Internet Connectivity

- Review of Day 1
- Module 2: Establishing Internet Connectivity
- Lesson 2-1: Understanding the TCP/IP Internet Layer
- Lesson 2-2: IP Addressing and Subnets
- Lesson 2-3: Understanding the TCP/IP Transport Layer
- Lesson 2-4: Exploring the Functions of Routing
- Lesson 2-5: Configuring a Cisco Router

Interconnecting Cisco Network Devices Part 1 (ICND1

- Lab 2-1: Performing Initial Router Setup and Configuration
- Lesson 2-6: Exploring the Packet-Delivery Process
- Lesson 2-7: Enabling Static Routing
- Lesson 2-8: Managing Traffic Using ACLs
- Lesson 2-9: Enabling Internet Connectivity

Day 3: Managing Network Device Security

- Review of Day 2
- Lab 2-2: Connecting to the Internet
- Module 3: Managing Network Device Security
- Lesson 3-1: Securing Administrative Access
- Lab 3-1: Enhancing the Security of the Initial Configuration
- Lesson 3-2: Implementing Device Hardening
- Lab 3-2: Device Hardening
- Lesson 3-3: Implementing Traffic Filtering with ACLs

Day 4: Building a Medium-Sized Network

- Review of Day 3
- Lab 3-3: Filtering Traffic withACLs
- Module 4: Building a MediumSized Network
- Lesson 4-1: Implementing VLANs and Trunks
- Lesson 4-2: Routing Between VLANs
- Lab 4-1: Configuring ExpandedSwitched Networks
- Lesson 4-3: Using a Cisco
- Network Device as a DHCP Server
- Lab 4-2: Configuring a DHCP Server
- Lesson 4-4: Introducing WAN Technologies
- Lesson 4-5: Introducing Dynamic Routing Protocols
- Lesson 4-6: Implementing OSPF
- Lab 4-3: Implementing OSPF

Day 5: Introducing IPv6

- Review of Day 4
- Module 5: Introducing IPv6
- Lesson 5-1: Introducing basic IPv6
- Lab 5-1: Configure and Verify Basic IPv6
- Lesson 5-2: Understanding IPv6
- Lab 5-2: Configure and Verify Stateless Autoconfiguration
- Lesson 5-3: Configuring IPv6 Routing
- Lab 5-3: Configure and Verify IPv6 Routing
- Lab: ICND1 Superlab

COFELY INEO
GDF SUEZ

PROCEDURE

Confidential ☐ ☒ **Restricted**

Date **October 23, 2015** **Free** ☐ ☐ **Internal**

LNB/Filter Changeover Procedure

From **INEO**
To **ICAO**
Cc NDSatcom
Ref ICAO REDDIG II Project

PURPOSE

The objective of this change is to get better the reception signal of all Reddig II stations.

The idea is to change the actual internal referenced LNB to news external referenced ones. The aim is that the NDSatcom Skywan, which is the satellite modem, could send itself the 10 MHz reference to the LNB in order to improve the LNB accuracy for catching up bursts from the Master station.

N.B.: For the Tx part, confirmation has been given by Terrasat that current iBUCs accept to receive an external 10 MHz reference without any hardware change.

SCOPE OF WORK

In a first step, the possibility of this change has to be confirmed in one site. It will be in Manaus for logistical reasons, and as TDMA Master of the network.

INEO ENGINEERING & SYSTEMS
23 rue Général Valérie André – Inovel Parc Sud - 78140 VELIZY VILLACOUBLAY - FRANCE
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Then, in a second step, the solution will be deployed in 3 other sites, in order to see if the changeover is improving the TDMA situation (see below). These sites have been chosen by NDSatcom, because they are relevant to observe the improvement for the following reasons:

- Manaus (SBMN): as main TDMA master station
- Ezeiza (SAEZ): as backup TDMA master station
- Lima (SPIM): station where Rx trouble logs have been identified
- Recife (SBRE): station with the highest number of issues occurred

Finally, if the solution is confirmed, it will be deployed in the whole network.

Figure 1 - Second step of changeover

HARDWARE MODIFICATION

Currently, Norsat 3120N LNB, with internal reference, are installed on site (see datasheet attached). They will be replaced by two Norsat 3020XN ones (see datasheet attached).

As they have same connectors, fixation, and almost same length, the replacement will not be a problem.

See below a view of the current configuration and future locations of new LNB equipment:

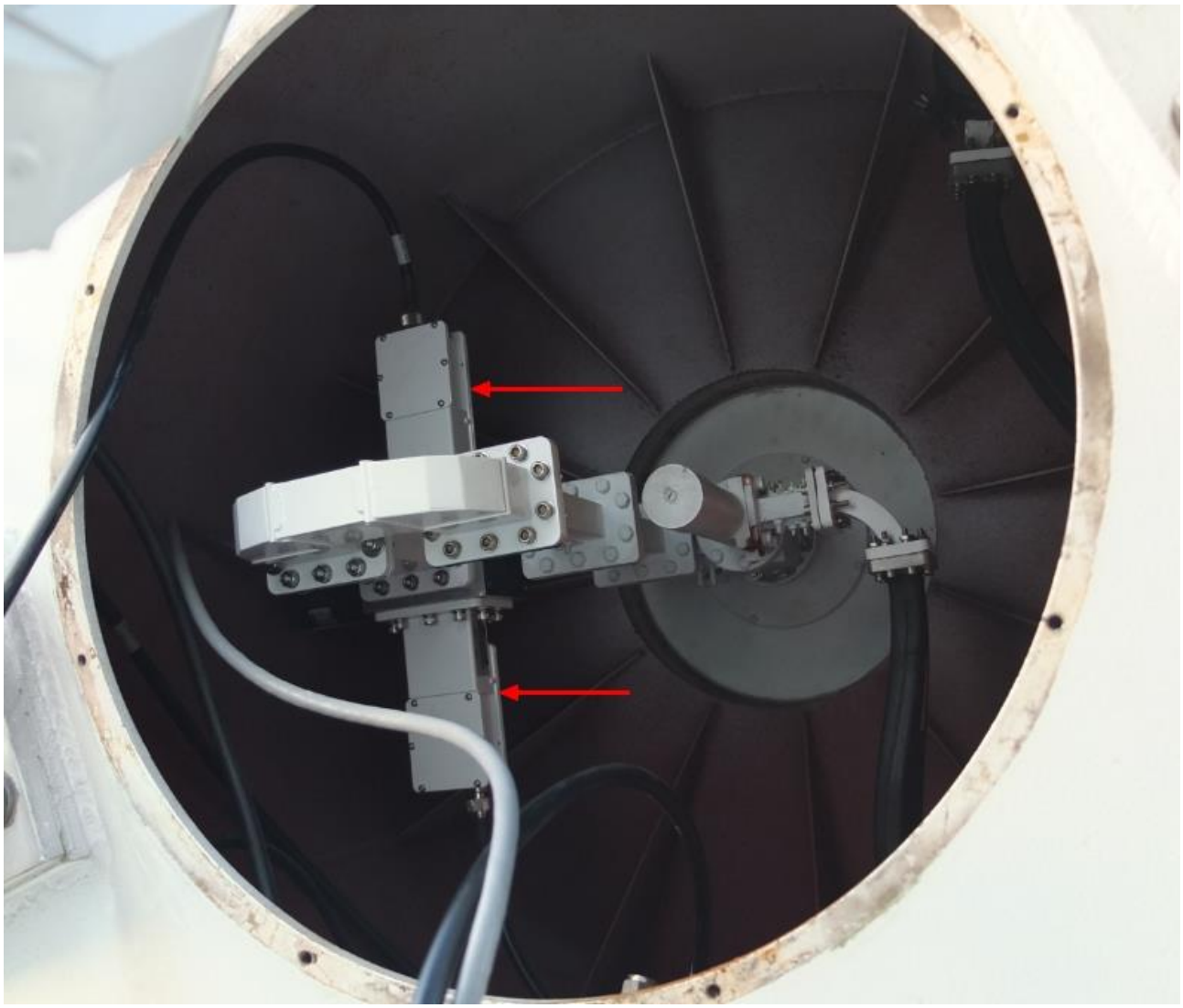


Figure 2 - LNB to be changed

Additionally, to guaranty the isolation of the received signal from any interference (Wimax, Radar…), a C-band pass filter will be added between the Rx-switch and the waveguide from the source.

This filter has already been provided in Lima. Model is BPF-C-1 (see datasheet attached).

This modification will induce a 0.5dB loss in the link budget. An engineering study is determining sites where adding this filter will not have any impact on the link budget. The filter will be installed only after this validation.

Confirmation has been given by Terrasat that we can replace the waveguide identified in the following figure, by the filter.

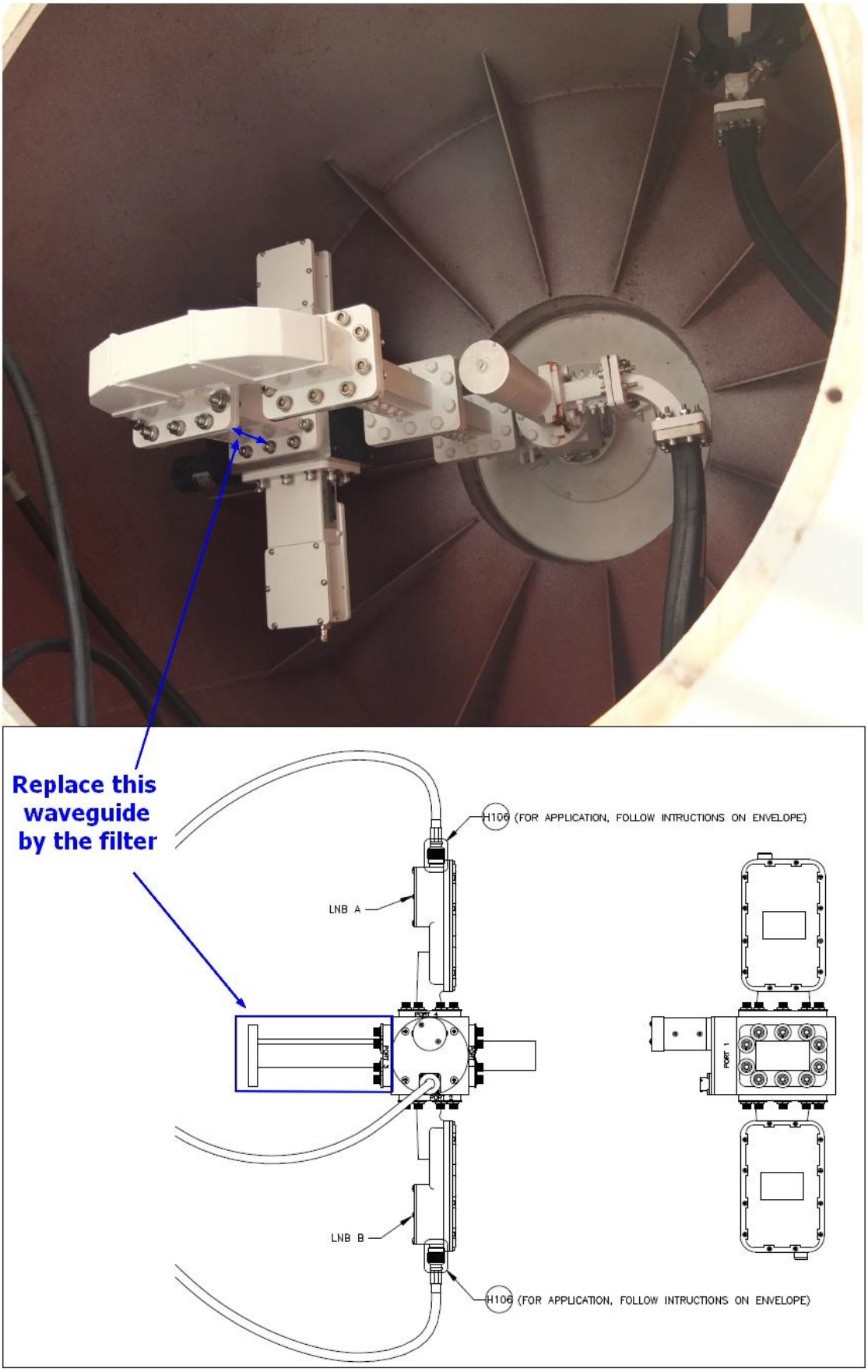


Figure 3 - Waveguide to be replaced by a filter

SOFTWARE MODIFICATION

As now the Skywan modem has to send the 10MHz reference to the LNB, and to avoid too many hardware changes, the NMS system will control the reference source.

The solution is currently in approval process over the Brasilia system, which is in integration phase in Cofely INEO factory.
It implies a modification in the WhatsUp Gold configuration, the NMS software. A new Action Policy will be added in each site, as it is already configured to switch from chain A to chain B.

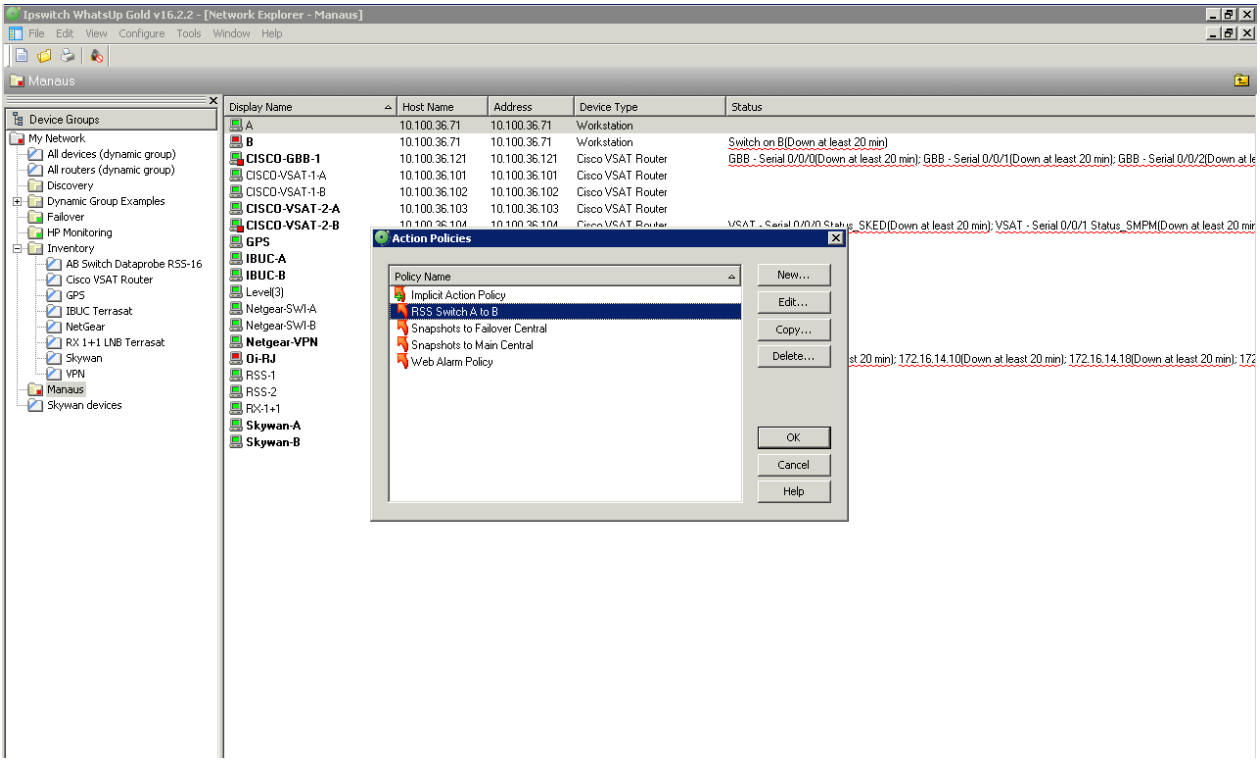


Figure 4 - WhatsUp Gold Action policies

This policy will permanently control which Skywan is assuming traffic, and send via SNMP the command to both Skywan to make them send the 10 MHz reference to "panelOnly" or "TxAndRxCable".
In no case both Skywan have to be in the situation of sending at the same time its reference.

VERIFICATION OF OPERATIONAL STATIONS

To see improvements of the solution deployed, several values will be observed in the SkyNMS after deployment in the first four sites. This list has been made in cooperation with NDSatcom.

1. Check power level for 8 PSK FEC 2/3 1 MSymbol (10-8 min 9 dB EsToNo; 10-7 min 8.6 dB EsToNo) suggested min mod max value 90, 110,120
2. Check EsToNo level RX from each individual station (should be not lower than EsToNo min)
3. Check channel input power (- 35dbm to – 70 dbm)
4. Check Header CRC errors (should not count up)
5. Check Frame plan crc errors (should not count up)
6. Check Frame plan loss count (should not count up)
7. Check Satmux bad dummy bits received by station
8. Check frequency drift with graph

Norsat International Inc.

Innovative Communication Solutions

35 YEARS OF EXCELLENCE

LNB

C-BAND EXT. REF. 3000X

TYPICAL SPECIFICATIONS

Noise temperature	20 K to 30 K depending on model number
L.O. stability	Phase Locked to External Reference
Gain Flatness (-40°C to +60°C)	1dBp-p @ 36 MHz
Gain Variation @ Fixed Freq. (-40°C to +60°C)	6 dBp-p max
Phase noise (SSB)	-70 dBc/Hz at 1 kHz -83 dBc/Hz at 10 kHz -93 dBc/Hz at 100 kHz
Input VSWR	2.3 : 1
Output VSWR	2.0 : 1

Conversion gain	62 dB
Output P1dB	5 dBm
Power requirements	±15 to ±24 V supplied through center conductor of IF cable
Current drain	200 mA
Input Waveguide	CPR229G
Dimensions	180 (L) x 100 (W) x 70 (H) mm (7.1 x 4.0 x 2.8 in)
Weight	425g / 15 oz
Ext. Ref. Frequency	10 MHz (sine-wave) -10 to 0 dBm
Temperature Range	-40°C to +60°C

FREQUENCY BANDS AVAILABLE

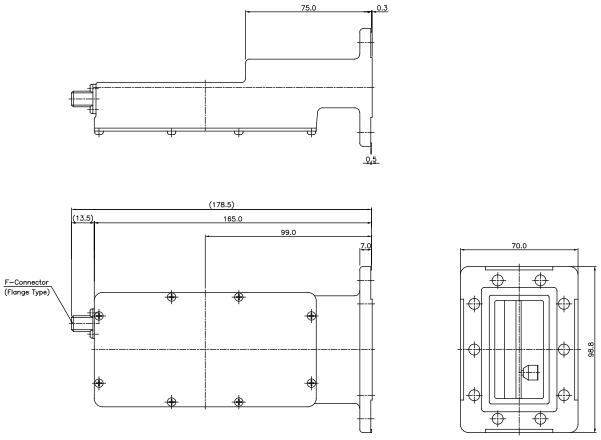
Input frequency (GHz)	3.40 to 4.20
L.O. frequency (GHz)	5.15
Output frequency (MHz)	950 to 1750

HOW TO ORDER

3020XN

CONNECTOR	F - 75 Ohm N - 50 Ohm
EXTERNAL REFERENCE	
NOISE TEMPERATURE	20 - 20 K 25 - 25 K 30 - 30 K
LNB SERIES #	

MECHANICAL DIAGRAM



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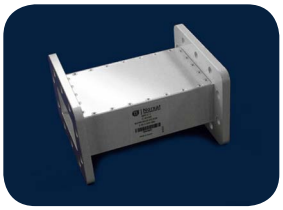
MICROWAVE COMPONENT

C-BAND BAND PASS FILTER



APPLICATIONS

- Rejects terrestrial interference in C-Band (WiMAX, Radar and C-Band transmitter)
- Easily installed between the feed and LNB
- Suitable for use with Norsat's C-Band LNBs
- Environmentally sealed and moisture resistant

TYPICAL SPECIFICATIONS (BPF-C-1)

Frequency range	3.70 to 4.20 GHz
VSWR	1.4 : 1
Insertion loss in band	0.5 dB
Waveguide flange	CPR-229 (input), CPR-229F (output)
Dimensions	120 (L) x 100 (W) x 70 mm
Weight	650 g

TYPICAL SPECIFICATIONS (BPF-C-2)

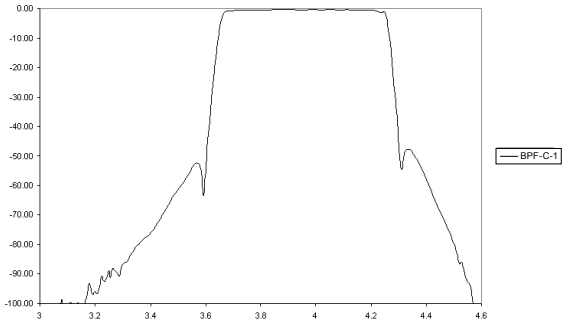
Frequency range	3.625 to 4.20 GHz
VSWR	1.4 : 1
Insertion loss in band	0.5 dB
Waveguide flange	CPR-229G (input), CPR-229F (output)
Dimensions	120 (L) x 100 (W) x 70 mm
Weight	650 g

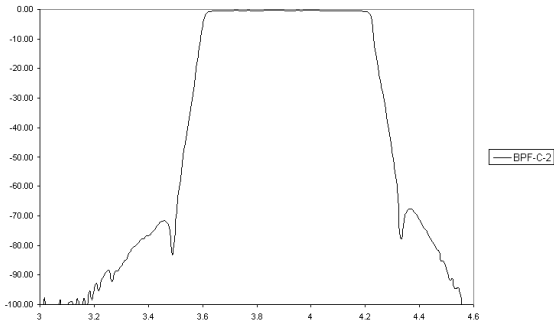
TYPICAL SPECIFICATIONS (BPF-C-BW36-CF)

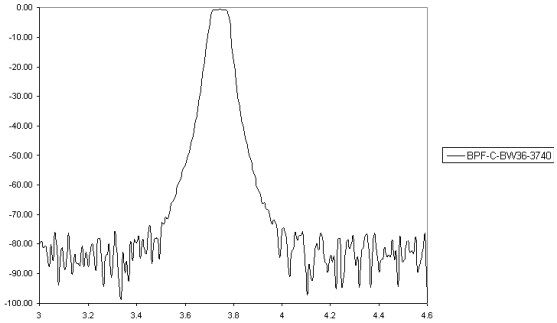
- BPF-C-BW36-CF is used for interference inside the standard receiver bands.
- The filter is a single transponder bandpass filter. The Center Frequency (CF) is
- determined by the individual customer's requirements.

Center Frequency (CF)	xxxx MHz
Bandwidth	36 MHz
VSWR	1.4 : 1
Insertion loss in band	0.6 dB
Waveguide flange	CPR-229G (input), CPR-229F (output)
Dimensions	120 (L) x 100 (W) x 70 mm
Weight	650 g

FREQUENCY PLOTS







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REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending issue
P4SAEZ02051	closed	P	4	**Argentina**	**SAEZ**	**Ezeiza**	**1**	Falta enmendar diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03/2015 => documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Argentina up to the the 22th of May will be corrected. 15/07: closed. No modification as far as known. As built delivered	~~31th March 2015~~ ~~27th March 2015~~ ~~30th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P3SAEZ02052	closed	P	3	**Argentina**	**SAEZ**	**Ezeiza**	**2**	Calidad telefonía IP pésima red terrestre y satelital	5 February 2015	1/ Diagnostic of the current configuration 2/ New configuration to be proposed after analysis 3/ Configuration implmented, to be tested (12/03)		~~27~~/03/2015 => diagnostic still on progress 13/03/2015 => modem configuration changed, test pending. 27/03/2015 => tests achieved with Manaus unsuccessful 30/04/2015: Pending test with new firmware 22/05/2015: new firmware not succesful. Pending configuration change and tests. 15/07: as per tests during Teleconference, quality was good. 21/09: test on laboratory is performed, new Cisco configuration will be provided	~~31th March 2015~~ ~~27th March 2015~~ ~~30th April 2015~~ ~~17/7/2015~~ end of september 2015		solved and closed	The IP teleconference met with the quality of voice and number of users(16)	INEO Solved and closed
P4SAEZ02053	closed	P	4	**Argentina**	**SAEZ**	**Ezeiza**	**3**	Pendiente pruebas BER circuitos AFTN	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: Problem is solved, as per tests conducted in Manaus. Pending closing as per email of 15/07 regarding AFTN between SAEZ and SCEL.	~~31th March 2015~~ ~~27th March 2015~~ ~~30th April 2015~~ 17/7/2015		closed and solved	Solved and closed	INEO Closed and solved
P4SAEZ02054	closed	P	3	**Argentina**	**SAEZ**	**Ezeiza**	**4**	Falsas alarmas en los puertos seriales del CISCO IA	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	~~28/04/15~~ ~~=> Problem identified~~ ~~=> implementation of the solution in progress~~ ~~27/03/2015: tests achieved, appears to be a communication instability between NMS and routers, as SSH connection is very sensitive~~ 21/09: problem solved after NMS works (cf email 18/09)	~~31th March 2015~~ ~~27th March 2015~~ ~~30th April 2015~~		Solved and Closed	The week of 20th April was checked and solved	INEO
P2SAEZ02055	Closed	P	2	**Argentina**	**SAEZ**	**Ezeiza**	**5**	Niveles de transmisión bajos SKywan A y B	5 February 2015	1/ Remote diagnostic 2/ Remote intervention by INEO Expert		~~17/03/2015 => INEO technician will go to SAEZ to check hardware~~ ~~27/03/2015 => INEO technician checked cables and WG, an antenna pointing will be achieved.~~ ~~22/05/2015 => INEO technician mission is being scheduled for antenna pointing check. Pending Cisco PVDM delivery before mission scheduling~~ 15/07: INEO's technicien mission succesful, antenna pointing increased power by 1-1.5dB	~~31th March 2015~~ ~~27th March 2015~~ ~~30th April 2015~~ 17/7/2015		Solved and Closed	Solved and cosed Some action was made but the RF level still low. Noted new date 8th May . The first week of July adjustments were made to improve the RF level otaining 1.5db more.	INEO closed and solved

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SAEZ02056	closed	P	3	**Argentina**	**SAEZ**	**Ezeiza**	**6**	Numero de emergencia dedicado GBB router (Fig 46. se comunica con Manaos con el numero 73601 y no con el numero indicado en la tabla de la figura 46	5 February 2015	To be corrected		27/02/2015 => targetted 04/03/2015 06/03/2015 => circuit down (cable cutted, was joined on 3/06/15 22/06/2015: pending test 21/09: new Cisco configurations are to be sent before end of september	13th March 2015 20th March 2015 10th April 2015 24th April 2015 end of september		Soved and closed	Closed Solved	INEO
P2SAEZ02057	closed	P	2	**Argentina**	**SAEZ**	**Ezeiza**	**7**	Perdida de paquetes en la red terrestre Manaos, Recife, Guyana, Paraguay y Santiago Issue with the AMHS between SAEZ and SGAS when using the terrestrial link	5 February 2015	Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: General state is ok, pending one issue with AMHS with Paraguay. 21/09/15: new test is to be done before end of september to determine where is localisated the problem (AMHS works without problem on the VSAT link)	13th March 2015 27th March 2015 10th April 2015 24th April 2015 end of september 2015		closed	OK Operational December 2015	OK
P3SAEZ02058	CLOSED	P	3	**Argentina**	**SAEZ**	**Ezeiza**	**8**	No se suministra el acceso a la página WEB de LEVEL 3 para la gestión de servicio	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**				LEVEL 3	closed	OK The user name and password to acces LEVEL was sent March 27th	ok
P4SAEZ02059	CLOSED	P	4	**Argentina**	**SAEZ**	**Ezeiza**	**9**	Dos conectores RJ45 del Patch Panel dañados	5 February 2015	To be corrected - New connectors will be sent to FP		08/04/2015 => Delivery cancelled due to AFIP restrictions (cf. mail Javier Vittor 08/04/2015)		4/8/2015	closed	OK	ok
P2SAEZ022410	closed	P	2	**Argentina**	**SAEZ**	**Ezeiza**	**10**	Continue intermittent problem in the AFTN circuit between Argentina and Brazil, Uruguay and Paraguay. Controllers report lost of flight plan	25 February 2015	Under analysis		27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week 15/07: as per precedent emails, retransmissions are not caused by REDDIG network.	13th March 2015 27th March 2015 10th April 2015 17/7/2015		Solved and Closed	Solved and Closed	INEO Solved and cclosed
P1SAEZ020511	closed	P	1	**Argentina**	**SAEZ**	**Ezeiza**	**11**	AMHS circuit between Ezeiza and Asunción	5 February 2015			30/04: solved and closed as per email 30/04 (clement chevallier), email from J. Vittor on 27/04			closed	OK	ICAO OK Solved in the REDDIG II satellite network additional test is required for the REDDIG II ground network

File update: 2/1/2016 18:18							REDDIG-II - Pending issues									
Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
O1SLLP17021	CLOSED	O	1	**Bolivia**	**SLLP**	**La Paz**	**1**	Communication problem with Manaus according to the email from ICAO (17th Feb.)	17 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	diagnostic on course after identification of the problem on the routing table with Level 3 expected resolution for 25/02	25/02/2015 => New configuration will be tested by Level3 as of today, on all routers, under recommendation made by our Cisco expert (CCIE certified) 27/02/2015 => New configuration implemented, activities monitoring under verification 28/02/2015 => Improvement of the routing assessed, but still to be confirmed 12/03/2015: communciation test achieved with SOCA, pending test with SLLP	30th March 2015 Test to be performed on 30th March 2015 test performed succesfully		closed	OK	
-																	
P2SBMN02051	closed	P	2	**Brazil**	**SBMN**	**Manaus**	**1**	Circuito AFTN Manaus Lima no funciona	5 February 2015	1/ Check of the Cisco configuration 2/ Local check-up with one of our expert (on-site) in Lima As soon as we have define where exactly is the problem, INEO E&S will correct the bugg.	Problem identified	25/02/2015 => Test must be conducted in cooparation with Manaus AFTN center, and REDDIG-II technical persons, waiting for their availability. 05/03/2015 => Problem solved, distrubings still apear but were already identifed in Reddig I 10/04/2015 => INEO engineer sent at Guayaquil for network-wide test. Improvement was noticed by Corpac 30/04: continuous test asked, to validate new configuration. 27/05: Lab test on going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: BER ok, service ok.	30th March 2015 27th March 2015 29th April 2015 17/7/2015		solved and closed	Solved and closed	INEO Solved and closed
P4SBMN02052	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**2**	Pendiente actualización diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	30th March 2015 27th March 2015 29th April 2015 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P3SBMN02053	closed	P	3	**Brazil**	**SBMN**	**Manaus**	**3**	La perdida de paquetes en la red terrestre están por encima de lo que especifica el SLA de LEVEL 3	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: after failure constated on the end of June, no more failure experienced.	30th March 2015 27th March 2015 29th April 2015 17/7/2015	LEVEL 3	solved and closed	OK Closed and Solved	LEVEL 3 INEO and ICAO Closed and Solved
P3SBMN02054	CLOSED	P	3	**Brazil**	**SBMN**	**Manaus**	**4**	Pruebas en los circuitos administrativos, conmutados ATS y AFTN realizados en una sola cadena en la red terrestre	5 February 2015	During the PSAT, it appears that this test was already performed. It could be easily checked, and upon request by ICAO, it could be done during the ORD period with the local FP and INEO remote coordination		27/02/2015 => INEO technician will conduct the test on site, on 28/02/15 05/03/15 => Test done with success	25th February 2015	3/5/2015	closed	OK closed	ok

File update: 2/1/2016 18:18

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P4SBMN02055	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**5**	Teleconferencia IP no trabaja de acuerdo a las especificaciones técnicas limitada a 10 usuarios	5 February 2015	1/ Diagnostic of the current licence 2/ New 16 users licences to be provided after analysis		15/03 : Hardware limitation found, solution to be provided. Will be under charge of hardware addition 21/07: hardware under order request 15/07: latest test unsuccsesful, pending confiugration change. 21/09: test on laboratory is performed, new Cisco configuration	~~30th March 2015~~ ~~30th March 2015~~ ~~15th April 2015~~ 31/7/2015 end of september		Solved and closed	The IP teleconference met with the quality of voice and number of users(16)	INEO closed and solved
P4SBMN02056	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**6**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	28/03/15 => Problem identified => Implementation of the solution in progress 12/05 => new NMS aspect approved by CAO (L.Vargas email of 12/05), to be deployed in all site 22/05/2015: command asked 15/07: finalized aspect.	~~30th March 2015~~ ~~30th March 2015~~ ~~15th April 2015~~ 17/7/2015		closed and solved	OK Closed and Solved	INEO Closed and Solved
P3SBMN02057	CLOSED	P	3	**Brazil**	**SBMN**	**Manaus**	**7**	Canal administrativo con Ecuador no opera	5 February 2015	1/ Analysis of the Cisco Configuration 2/ Correction to be proposed	To be solved from Ecuador side	27/03/2015 => new configuration sent to Ecuador, pending tests 15/03/2015 => test achieved, still not operational 27/03/2015 => A Cisco expert will assist us for the test on April 2nd 10/04/2015 => INEO engineer sent at Guayaquil	~~30th March 2015~~ ~~30th March 2015~~ ~~15th April 2015~~ 24th April 2015	4/20/2015	closed	OK	
P3SBMN02058	closed	P	3	**Brazil**	**SBMN**	**Manaus**	**8**	Observación pendiente desde la FAT: En caso de falla del servidor central del NMS en Manaos el servidor de reserva de Ezeiza debería asumir todas las funciones del servidor central con todas las atribuciones de monitoreo y control sobre todas las estaciones	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	27/02/15 => Problem identified => Solution will be implemented 04/03/15 28/03/15 => solution implemented, tests passed with success, one email with summary of the test 20/04/2015 => Complementary tests to be done by ICAO to confirm the QR is solved 15/07: pending new test 09/09: failover procedure has been checked and is working, but failover is only about the server and not the station	~~30th March 2015~~ ~~30th March 2015~~ ~~15th April 2015~~ 31/7/2015		solved but not closed	Solved but not closed missing the respective test to verify if the transference are working properly	INEO considers this observation solved and closed. (see email 09/09/2015)
P4SBMN02059	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**9**	Falta pruebas BER en canales AFTN	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/01/15 => Procedure for BER test rangimeal Watch Dog => supervisor coordination from ICAO, Lowa and FP to proceed 28/03/15 => waiting for a new diagnostic after a link analysis 14/05/2015 => AFTN link connected between SJDG and SUMU and they will be scripted 27/05: new tested to be conducted at SUMU and SJDG, in addition to that, hardware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO engineer sent at Guayaquil for network work test 27/05: Last test on going, local BER tests resulted with installation issue and latency but regular BER to do. Further progress expected next week 15/07: closed as per June tests	~~30th March 2015~~ ~~30th March 2015~~ ~~15th April 2015~~ 17/7/2015		Closed and solved	OK Closed and Solved	INEO AFTN Closed and Solved
P4SBMN020510	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**10**	Falta pruebas SAT LOOP BER TEST	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/02/2015 => INEO technician will conduct the test on site on 20/03/15 28/03/15 => As talked during teleconference, the test requires to shutdown the whole satellite network. Need to confirm and coordinate it 12/05/2015: procedure sent, pending on test to be coordinated by ICAO 30/06: new procedure sent with calendar (feedback on 01/07) 22/09: finalization should be on/in 30th of July 15/07: some stations were below the scope. Interference check asked.	~~30th March 2015~~ ~~30th March 2015~~ ~~15th April 2015~~ 17/7/2015		Solved	Solved	INEO After the first trials the BER SAT LOOP test was not positive it is required action to obtain the right BER value

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REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P4SBMN02011	CLOSED	P	4	**Brazil**	**SBMN**	**Manaus**	**11**	Pruebas pendiente en circuitos orales ATS , administrativos AFTN en una de las cadenas de la red satelital	5 February 2015	During the PSAT, it appears that this test was already performed. It could be easily checked, and upon request by ICAO, it could be done during the ORD period with the local FP and INEO remote coordination		27/02/2015 => INEO technician will conduct the test on site 06/03/2015 => Waiting for Result report	~~23th March 2015~~ 10th March 2015	3/10/2015	closed	OK solved	OK
P1SBRF05021	closed	P	2	**Brazil**	**SBRF**	**Recife**	**1**	Perdida de paquetes en la red terrestre LEVEL 3 con todos los nodos	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		~~25/02/2015 => New request retransmitted to Level 3~~ ~~06/03/2015 => individual tests to be performed~~ ~~27/03/2015 => tests conducted by LE were successful, except Rabelo Subsea. Procedure sent on 27th of March for individual tests~~ ~~22/05/2015: pending test result (22/05/2015)~~ 15/07: no more issue	~~23th March 2015~~ ~~24th March 2015~~ ~~28th April 2015~~ 17/7/2015	LEVEL 3	solved and closed	Closed	Closed and Solved
P4SBRF05022	closed	P	4	**Brazil**	**SBRF**	**Recife**	**2**	Pendiente pruebas BER AFTN	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		~~27/02/15~~ ~~=> Procedure for BER test organized during ORD~~ ~~=> requested coordination from ICAO Curitiba/CFP to proceed~~ ~~06/03/15 => waiting for a new diagnostic after some analysis~~ ~~23/03/2015 => AFTN test conducted between SJE2 and SUMU, and then will be started~~ ~~27/03 : new session to be conducted at SUMU and SJE2 to address to that, coordinated with support by INEO for operations team at INEO facility~~ ~~22/04/2015 => INEO engineer sent at Guayaramo for network audit and~~ ~~27/05 : Lab test on-going, local BER tests resulted with intermittent issue and passed but regular BER is ok. Further progress expected next week~~ 15/07: no issue regrding this point as far as known	~~23th March 2015~~ ~~24th March 2015~~ ~~28th April 2015~~ 17/7/2015		OK Colosed and Solved	OK Closed and Solved	INEO Closed and Solved
P3SBRF05023	closed	P	3	**Brazil**	**SBRF**	**Recife**	**3**	Falsa alarma NMS (IBUC) y RX 1 + 1	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	~~27/02/2015~~ ~~=> Problem identified~~ ~~=> implementation of the solution in progress, to be achieved on 06/03/15~~ ~~23/03/2015 => new NMS problem identified : graphical issue on representation~~ ~~22/04/2015 => INEO technician mission scheduled~~ ~~27/05/2015 => INEO technician mission for uPSD change and new NMS~~ ~~15/07: INEO prepares the device for automatic actualization, expected at its connection~~ 21/09: problem solved after total NMS check between the 7th and 21th of ~~september~~	~~23th March 2015~~ ~~24th March 2015~~ ~~28th April 2015~~ 17/7/2015		pending	Noted the new date week of 20July	**INEO**

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending issue
P2SCEL02051	closed	P	2	**Brazil**	**SBCT**	**Curitiba**	**1**	Switching of LNB does not work	5 February 2015			22/05/2015 => INEO technician mission pending on user delivery 15/07: switch changed, reported ok by technician.	24th March 2015 27th March 2015 29th April 2015 17/7/2015		Cllosed and Solved	OK Closed and Solved	INEO ok Closed and Solved
P3SCEL05021	CLOSED	P	3	**Chile**	**SCEL**	**Santiago**	**1**	Dañada pantalla del reloj GPS	5 February 2015	New equipment received in INEO Premises. Will be sent to the site asap		22/05/2015 => Coordination with GE for shipment in progress 15/07/2015 => New equipment sent 15/07/2015 pending to validate and integrate the new device 16/07/2015 => Release awaited 20/04/2015 => new equipment received, installed and correctly working (recovery of faulty equip to be organize by INEO)	6th March 2015 30th March 2015 TBD- pending on GE feedback	4/20/2015	closed and solved	OK Closed	OK INEO sent the equipment
P3SCEL05022	closed	P	3	**Chile**	**SCEL**	**Santiago**	**2**	NMS: refresco cambios de estados muy lento	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	15/04/2015 => in local NMS it seems correct refresh. For the distant NMS it is not possible to improve it due to satellite hop 30/04: information requested 22/05/2015: information asked to subcontractor for web/browser optimization 15/07: implementation Opera or Chrome in 64bits version shows better results in latency.	24th March 2015 27th March 2015 29th April 2015 17/7/2015	3/6/2015	solved and closed	OK Closed and Solved	INEO Closed and Solved
P3SCEL05023	CLOSED	P	3	**Chile**	**SCEL**	**Santiago**	**3**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	15/04/2015 => Problem identified => implementation of the solution in progress 22/05 => new NMS server approved by COMS & Alcatel email of 15/05/15 to be deployed in all site	28th February 2015 6th March 2015 30th March 2015 17th Marsh 2015	3/17/2015	closed	OK	
P3SCEL05024	closed	P	3	**Chile**	**SCEL**	**Santiago**	**4**	WEB IBUC : La indicación de voltaje no corresponde al valor real	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	22/05/2015 => Problem identified => implementation of the solution in progress, to be delivered on 29/05/15 30/04: information requested 22/05: email sent on 30/04, pending validation and Test track on 22/05/2015 15/07: as per manufacturer advise, this is not an issue (email 9/6/2015).	24th March 2015 27th March 2015 29th April 2015 17/7/2015		solved but not closed	Not closed Not relevant issue Chile reported that the problem was not solved	INEO Chile is reporting wrong lecture since the PSAT The manufacturer reported not relevant issue
P4SCEL05025	closed	P	4	**Chile**	**SCEL**	**Santiago**	**5**	Pendiente actualización de los diagramas	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	24th March 2015 27th March 2015 29th April 2015 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending issue
P1SCEL05026	closed	P	1	**Chile**	**SCEL**	**Santiago**	**6**	Circuito AFTN con Lima no operativo	5 February 2015	1/ Check of the Cisco configuration 2/ Local check-up with one of our expert As soon as we have define where exactly is the problem, INEO E&S will correct the bugg.	requested to FP to check cabling and RJ45 adaptator potential problem	27/1/2015 Test Procedure for BER test targetted March 15th Requested coordination from ICAO Lima and CP to proceed 28/02/2015 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN link configured between SAEZ and SUMU and then out of service 27/03: new testes to be conducted at SUMU and SAEZ, in addition to that, hardware was brought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network wide test 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: Lima reported circuit as OK.	4Jan.-Interim-2015-4Jan.-Interim-2015-29Dec.-Interim-2015- 17/7/2015	4/20/2015	solved and closed	OK Solved and Closed	INEO Closed and closed
P4SCEL05027	closed	P	4	**Chile**	**SCEL**	**Santiago**	**7**	Pendiente prueba BER AFTN	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/1/2015 Test Procedure for BER test targetted March 15th Requested coordination from ICAO Lima and CP to proceed 28/02/2015 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN link configured between SAEZ and SUMU and then out of service 27/03: new testes to be conducted at SUMU and SAEZ, in addition to that, hardware was brought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network wide test 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: BER test ok, as per tests from Manaus	4Jan.-Interim-2015-4Jan.-Interim-2015-29Dec.-Interim-2015- 17/7/2015		closed and solved	OK Solved and Closed	INEO Closed and Solved

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P1SCEK05021	closed	P	1	**Colombia**	**SKED**	**Bogota**	**1**	Circuito oral ATS Bogota Panamá no funciona	5 February 2015	1/ Analysis of the current configuration 2/ Expert to come on site to finalise the analysis and correct the problem	on site diagnostic to be conducted 21/02	25/02/2015 => INEO expert on investigation on site in coordination with FP and FADS local provider => Cisco cooperation with those persons is expected to address the problem probably 27/02/2015 => information on PSV received from provider. New configuration implemented by 02/03/2015 03/03/2015 => still in progress with active participation of all members concerned 12/03/2015 => test today with 0.x Pc and no longer 0.1 Sdw 13/03/2015 => configuration changed to 0.1SCO with the same issue 17/03/2015 => A Cisco expert will assist us for the test on April 3rd 20/03/2015 => MOUA first being installed at Bogota. Configuration files are required 25/03/2015 => no news received 27/03/2015: configuration will be generated between chain A and B and implanted on site 15/07: configuration changed.	~~30th March 2015~~ ~~27th March 2015~~ ~~22nd June 2015~~ 17/7/2015		closed and solved	OK Closed and Solved	OK Closed and Solved
P1SCEK05022	CLOSED	P	1	**Colombia**	**SKED**	**Bogota**	**2**	Circuito AMHS con Peru no funciona	5 February 2015	1/ Local diagnostic with our expert (on-site) in Lima 2/ Solutions to be implemented after diagnostic	Resolution pending of the item P2SBMN02051	25/02/2015 => Conflict of IP address was detected between AMHS system and Teldat's configuration => Member states must be responsible for the text translator between the two systems => Expecting article from ICAO 26/02/2015 => Status & configuration update asked to CORPAC for implantation 03/03/2015=>engaged in learning Agent SADC / Cisco to SARG course de-scheduled. Pending solution 20/03/2015 (eng) => waiting for updating code since new version 2.0.0.0 22/05/2015: considered closed	~~18th February 2015~~ ~~28th February 2015~~ 22/05/2015	~~20/04/2015~~ 28/05/2015	closed	OK. Circuit under evaluation by the respective AMHS Messages Centers	OK AMHS is OK on satellite network but present problem in the Ground Network (INEO/level 3 responsability)
P2SKED02053	CLOSED	P	2	**Colombia**	**SKED**	**Bogota**	**3**	Administrative voice circuits are not separated from Operational group inside the router.	5 February 2015			26/02/2015: configuration changed, pending 22/05/2015: considered closed	~~20/05/2015~~ 22/05/2015	5/27/2015	closed	OK	OK
P2SEGU05021	CLOSED	P	2	**Ecuador**	**SEGU**	**Guayaquil**	**1**	Circuitos de voz administrativos no operativos	5 February 2015	1/ Analysis of the current configuration 2/ Expert to come on site to finalise the analysis and correct the problem	Analysis in progress	24/02/2015: configuration sent, to be installed and tested 11/03: configuration did not solve the issue, it improved communication of hard detection 27/03 A Cisco expert will assist us for the test on April 3rd	~~15th March 2015~~ ~~20th March 2015~~ 10th April 2015		closed	OK	

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending issue
P2SEGU05022	closed	P	2	**Ecuador**	**SEGU**	**Guayaquil**	**2**	Perdida de paquetes red terrestre Level 3 con Manaos,Recife Guyana Uruguay	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request (unacceptable) to Level 3 26/02/2015 => individual tests to be performed 27/02/2015 => tests conducted by L3, were successful, except Fortaleza Guyana. Procedure sent on 27th of March for individual tests 22/05/2015: pending test result (22/05/2015) 15/07: no failure reported	17/7/2015	LEVEL 3	Solved and Closed	Solved and Closed	INEO & LEVEL 3
P4SEGU05023	Closed	P	4	**Ecuador**	**SEGU**	**Guayaquil**	**3**	Pruebas BER AFTN pendientes	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/11/13: => Procedure for BER test (registred overall 0036 => expected coordination from ICAO Lima and FP to proceed 18/02/14 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SKEC and SUMU, and then will be carried 27/03: new testsare to be conducted at SUMU and SKEC. In addition to that, hardware was bought by INECO to perform tests at INECO facility 03/04/2015 => INECO ingeneer sent at Guayaquil for network wide test 07/05: Lab test on going, local BER tests resulted with modulation issue and needs the regular BER to do. Further progress expected next week 15/07: no issue reported since new configuration in June, generalized configuration of the successful one.	17/7/2015		Solved and Closed	Solved and Closed	INEO
P3SEGU05024	CLOSED	P	3	**Ecuador**	**SEGU**	**Guayaquil**	**4**	Prueba Tx switch (7.1.1) no pasó	5 February 2015	After analysis, it appears that the IBUC needs to be updated. To do so, we need to be connected directly to the equipment. INEO requests from ICAO the support from the local FP in order to perform this action.		27/02/2015 => Procedure has been sent by INECO to FP as per Item # P3TSP/SEGU (Spanish) 03/03/2015 => procedure sent, but power / connector must be tightened before / after. But this solution directly realised by others areas 09/03/2015 => problem soved according to email from Raul Avellan of 09/03	28 February 2015	2/28/2015	closed	OK solved	ok
P3SEGU05025	CLOSED	P	3	**Ecuador**	**SEGU**	**Guayaquil**	**5**	Voz IP teleconferencia calidad pésima	5 February 2015	1/ Diagnostic of the current configuration 2/ New configuration to be proposed after analysis 3/ Configuration implmented, to be tested (12/03)		09/03/2015 => diagnostic still on progress 13/03/2015 => modem configuration changed, test pending 27/03/2015 => tests achieved with Warnaco unsuccessful 02/04/2015: Pending test with new firmware 22/05/2015: new firmware not successful. Pending configuration change and tests. 15/07: during teleconference tests in June, quality was good	17/7/2015		Quality of voice ok but not the IP telephone system	Quality of voice ok but not the IP telephone system	INEO

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending issue
P3SEGU05026	closed	P	3	**Ecuador**	**SEGU**	**Guayaquil**	**6**	Falsas alarmas de operación de las interfases seriales y E1	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	26/02/15 => Problem identified => Implementation of the solution in progress 27/03/2015: tested achieved answers to be a communication instability between SARC and routers as SSH connection is automatically 21/09: solved after NMS works	~~24th March 2015~~ ~~24th March 2015~~ ~~20th April 2015~~ 15/09/2015		Pending	OK action on progress but not completed. Noted the new date week of 20th July	INEO Pending
P4SEGU05027	CLOSED	P	4	**Ecuador**	**SEGU**	**Guayaquil**	**7**	Pending ATS voice circuit test between Guayaquil and CENAMER	5 February 2015	1/ Analysis of the current configuration 2/ Pending to interconnection between Bogota/Maiquetia and Honduras	resolution pending of the item P1SCEK05021	26/02/2015 Connection tests achieved, phone number changed in CENAMER, Panasonic Elsater installed, in Reprogramm 27/03: definitely solved 20/04/2015 => On monitoring	~~28th February 2015~~ ~~6th March 2015~~ ~~24th March 2015~~ 20/ March 2015		closed	OK Solved but not closed the circuit is under observation	ICAO OK Solved
P4SOCA05021	CLOSED	P	4	**French Guiana**	**SOCA**	**Cayenne**	**1**	El conector de energía del teléfono IP no funciona	5 February 2015	A solution will be proposed by INEO to the site		26/02/2015 => wire proposed to use a cyrstal program that could be telephones Sabre 7 model solved 2015 => confirmation sent on 17/03/2015 17/03/2015 => closed as per email of 17th of march	~~28th February 2015~~ ~~24th March 2015~~ 17h March 2015	3/17/2015	closed	OK	
P4SOCA05022	CLOSED	P	4	**French Guiana**	**SOCA**	**Cayenne**	**2**	Diagramas circuitales incorrectos (WVG)	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~24th March 2015~~ ~~24th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P3SOCA05023	CLOSED	P	3	**French Guiana**	**SOCA**	**Cayenne**	**3**	Dificultad leer la direcciónIP del WVG	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	26/02/15 => Problem identified => Implementation of the solution in progress 22/05/2015 => new NMS expert approved by DACO (L Arlains email of 22/05): to be deployed in all site 22/05/2015: graphical representation of SBUC position to be replaced 15/07: graphic actualized	~~24th March 2015~~ ~~24th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	Solved and closed	INEO
P3SOCA05024	CLOSED	P	3	**French Guiana**	**SOCA**	**Cayenne**	**4**	Error en la interface LAN no trabaja	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	26/02/15 => Problem identified => Implementation of the solution in progress, to be achieved on 06/03/15	~~28th February 2015~~ ~~6th March 2015~~ ~~6th March 2015~~ 20th Marsh 2015	3/20/2015	closed	OK	
P3SOCA05025	CLOSED	P	3	**French Guiana**	**SOCA**	**Cayenne**	**5**	Modem B no va en verde cuando se enciende	5 February 2015	1/ Diagnostic with FP to be performed 2/ If faulty equipment, will open an RMA number to replace the equipment	Analysis in progress with NDSatcom	26/03/2015 Kid Satcom will send us a new software and an upgrade procedure for the network 27/03: Kid Satcom is still working on the new version. Solutions should be exposed next week 10/04: New version to be deployed next week. SkyNMS 3.25 allready installed at Manaus 20/04: Software uploaded,test ok	~~24th March 2015~~ ~~24th March 2015~~ ~~24th April 2015~~ 24th April 2015	4/20/2015	closed	OK	

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending issue
P2SOCA05026	closed	P	2	**French Guiana**	**SOCA**	**Cayenne**	**6**	Problema posterior con el circuito AFTN con Manaos	5 February 2015	1/ Check of the Cisco configuration -> Conf. OK 2/ Discussions undergoing with local FP	problem already observed during REDDIG 1 operation	27/05: Lab test on going, local BGP tests resulted with initialization issue and latency but regular BGP is ok. Further progress expected next week 15/07: no issue reported since new configuration implemented in June	~~10th March 2015~~ ~~20th March 2015~~ ~~30th April 2015~~ 17/7/2015		closed and solved	Closed and Solved	INEO
O1SOCA05027	CLOSED	O	1	**French Guiana**	**SOCA**	**Cayenne**	**7**	Communication problem with Manaus according to the email from ICAO (17th Feb.)	17 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the Item M1SLLP17021	25/02/2015 => New configuration will be tested by Level3 as of today, on all routes under recommandation made by our Cisco expert (CCIE certified) 27/02/2015 => New configuration implemented, solution monitoring under validation 03/03/2015 => Improvement of the routing observed, but stil to be confirmed 12/03/2015: test successful, only SYGC was out due to last mile issue	~~6th March 2015~~	3/12/2015	closed	OK	
P3SYGC05021	CLOSED	P	3	**Guyana**	**SYGC**	**Georgetown**	**1**	No hay indicación de status en uno de los switches en el MAP VIEW	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	25/02/15 => Problem identified => Implementation of the solution in progress, to be achieved on 09/03/15 20/04/2015 => both switches are up	~~10th March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ 24th April 2015		closed	OK Solved	ICAO OK Solved
P3SYGC05022	CLOSED	P	3	**Guyana**	**SYGC**	**Georgetown**	**2**	No se puede hacer setting en las interfaces de voz	5 February 2015	INEO sent an email on the 18th Feb. explaining that modifications on voice interfaces are possible, mainly to change the attenuation or the gain to make the communication better. We sent to the FP a procedure.			18 February 2015	2/18/2015	closed	OK closed	
O1MHTG12051	CLOSED	O	1	**Honduras**		**Tegucigalpa**	**1**	Solicitud de activación de los servicios (email 12/02/2015)	12 February 2015	Procedure to declare the new station in the network to be done	problem identified and expected resolution for 21/02	25/02/2015 => Solved by NMS (Tested as per INEO) 21/04/2015 => On monitoring	25th february 2015		closed	OK Solved	ICAO OK Solved
P4SGAS05021	CLOSED	P	4	**Paraguay**	**SGAS**	**Asuncion**	**1**	Alarma sonora de la UPS en modo batería, prácticamente inaudible	5 February 2015	The equipment is working as presented during the FAT. Please precise the issue.			~~10th February 2015~~ 20 March 2015		closed	OK Solved	OK
P3SGAS05022	closed	P	3	**Paraguay**	**SGAS**	**Asuncion**	**2**	No se cuenta con el antivirus que se halla especificado en el Documento REDDIG II SDD Scope of Supply Rev. F	5 February 2015	To be provided by INEO		27/05/2015: Antivirus almost identified (two remaining systems) 28/05: procurement in progress 22/06/2015: license received. Pending procedure to be sent 15/07: procedure sent	~~10th March 2015~~ ~~20th March 2015~~ ~~30th April 2015~~ 17/7/2015		closed and solved	Closed and Solved	INEO The antivirus was provided and sent the link to download it the 16th of July
P3SGAS05023	CLOSED	P	3	**Paraguay**	**SGAS**	**Asuncion**	**3**	El breaker Q5 presenta un falso contacto por lo que deberá ser cambiado	5 February 2015	INEO have contacted his local subcontractor to perform the modification			26 February 2015	2/26/2015	closed	OK Solved	OK

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2SGAS05024	ON PROGRESS	P	2	**Paraguay**	**SGAS**	**Asuncion**	**4**	No se configuro la línea Administrativa IP	5 February 2015			27/02/2015 => As per SDD, this request seems to be out of scope of INEO ~~06/03/2015 A coordination email was sent to - Paraguay for configuration changes in the Cisco. We are pending to that information to - keep working on this issue and make - tests with Paraguay.~~ 12/03/2015: no news from Paraguay 16/03: configuration sent, pending tests 27/03: test resulted not succesful, but SIP proxy must be the VCS, not the Cisco 10/04: expert contracted and made Cisco configuration changes, and IPBX little changes. Specific test and config changes must be achieved by Paraguayan staff. 20/04: pending new info 22/05/2015:pending new info 15/07: pending new info regarding test achieved by Asuncion staff 21/09: test results pending	~~10h March 2015 20th March 2015 10th April 2015 24th April 2015~~ 31/07/2015		pending	Not solved still pending Noted new date 24thApril	INEO ICAO: The configuration of administrative line is INEO responsability INEO: the problem is the interconnection with the local system.
P3SGAS05025	closed	P	3	**Paraguay**	**SGAS**	**Asuncion**	**5**	La grafica de representación de los equipos en los nodos en el NMS no ha sido mejorada, tal como se había observado en la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	~~=> Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS version approved by ICAO (E. Allegre email of 12/03/), to be deployed in all sites~~ 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: modification achieved	~~10th March 2015 20th March 2015 10th April 2015 24th April 2015~~ 15/07/2015		solved and closed	OK Closed and Solved	INEO NMS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites
P3SGAS05026	CLOSED	P	3	**Paraguay**	**SGAS**	**Asuncion**	**6**	Al realizar la prueba de redundancia del Capítulo 7 Pag. 70/125 de la PSAT, las IBUCs no indican las fallas y no conmutan automáticamente	5 February 2015	After analysis, it appears that the IBUC needs to be updated. To do so, we need to be connected directly to the equipment. INEO requests to ICAO the support from the local FP in order to perform this action.		~~28/02/2015 => Solved by INEO (Closed as per INEO)~~	28 February 2015	2/28/2015	closed	OK	
P3SGAS05027	closed	P	3	**Paraguay**	**SGAS**	**Asuncion**	**7**	El puerto serial 0/0/0 del router GBB presenta una falla en donde pierde paquetes en Recepción, por lo cual la tarjeta 2-Port Async/Sync Serial WAN Interface Card debe ser reemplazada	5 February 2015	Analysis undergoing -> An RMA will be opened if necessary	waiting for a clear diagnostic from SGAS that it is a hardware problem	17/03: update asked to FP 20/04: update asked 30/04: pending test (see email 22/04) 22/05: idem 15/07: closed as per succesful configuration implementation 21/09/15: All BER tests done now	~~10th March 2015 20th March 2015 10th April 2015 24th April 2015~~ 15/07/2015		pending	Still pending the BER test. Noted the new date 24th April	INEO
P4SGAS05028	closed	P	4	**Paraguay**	**SGAS**	**Asuncion**	**8**	Pendiente actualización de los diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for ALL sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~10th March 2015 20th March 2015 10th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2SGAS05029	closed	P	2	**Paraguay**	**SGAS**	**Asuncion**	**9**	Perdida de paquetes en la red terrestre LEVEL 3 con Bolivia , Recife (Muy alta), Colombia,French Guyana, Guyana y Uruguay	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: General state is ok, pending one issue with AMHS with Paraguay.	~~30th March 2015~~ ~~2nd March 2015~~ ~~20th April 2015~~ 17/7/2015	LEVEL 3	solved and closed	OK closed and solved	ICAO/LEVEL 3 LEVEL 3/INEO
O3SGAS110210	CLOSED	O	1	**Paraguay**	**SGAS**	**Asuncion**	**10**	Communication problems which forced Paraguay to pass services through the Level 3 network (email OACI 11/02)	11 February 2015	1/ Remote analysis of the problem 2/ Expert from INEO to be send on site to point again the antena	problem Identified as a bad aligment of the antena. On site technitian for 23/02	25/02/2015 => Solved after intervention of INEO expert on site (Closed as per INEO)	~~17th February 2015~~ 25th February 2015	2/25/2015	closed	OK	
P1SPIM05021	CLOSED	P	1	**Peru**	**SPIM**	**Lima**	**1**	Circuito AFTN con Manaos y Santiago inoperativos	5 February 2015	Remote Diagnostic under progress	Resolution pending of the item P2SBMN02051	27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week 15/07: closed as per tests conducted on June	~~30th March 2015~~ ~~2nd March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	OK Closed and Solved	INEO
P2SPIM05022	CLOSED	P	2	**Peru**	**SPIM**	**Lima**	**2**	MODEM 1070 cadena A no operativo	5 February 2015	1/ Spare part installed 2/ Faulty equipment to be collected by INEO for reparation & replacement (Waiting for ICAO instructions) 3/ Spare Modem to be declared in the network		25/02/2015 Solved by INEO => Closed as per INEO	~~19th February 2015~~ 24th February 2015	2/24/2015	closed	OK	
P4SPIM05023	closed	P	4	**Peru**	**SPIM**	**Lima**	**3**	La grafica de representación de los equipos en los nodos en el NMS no ha sido mejorada, tal como se había observado en la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: graphical aspect changed	~~30th March 2015~~ ~~2nd March 2015~~ ~~20th April 2015~~ 17/7/2015		solved but not closed	Not closed. NMS aspect is not completed yet. No indication about which position (A or B) for IBUs and LNBs	INEO NMS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SPIM05024	closed	P	3	**Peru**	**SPIM**	**Lima**	**4**	Falta actualización de los diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~24th March 2015~~ ~~22th March 2015~~ ~~29th April 2015~~ 17/7/2015		Solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P2SPIM05025	closed	P	2	**Peru**	**SPIM**	**Lima**	**5**	Perdida de paquetes red terrestre Level 3 con Argentina,, Manaos, Colombia , Guyana y Venezuela	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: no failure reported so far	~~24th March 2015~~ ~~22th March 2015~~ ~~29th April 2015~~ 17/7/2015	LEVEL 3	closed and solved	OK Closed and Solved	LEVEL 3 INEO and ICAO
P2SPIM05026	closed	P	2	**Peru**	**SPIM**	**Lima**	**6**	Numero ATS d no corresponde	5 February 2015	Local intervention of our expert		27/02/2015 => Targetted 02/03/2015 20/04/2015 => no existe numero ATS-D configurado en la REDDIG II en Lima. Así debe ser el numero que manda la PBX que no corresponde. Necesitamos mas detalles. 15/07: issue corrected by Ecudaor	~~24th March 2015~~ ~~22th March 2015~~ ~~29th April 2015~~ 17/7/2015		Solved and Closed	Solved and Closed	INEO
P4SPIM05027	CLOSED	P	4	**Peru**	**SPIM**	**Lima**	**7**	Pruebas cadena A satelital no realizadas por falla del MODEM cadena A	5 February 2015			25/02/2015 Solved by INEO => Closed as per INEO	24th February 2015		closed	OK	OK
P4SPIM05028	closed	P	4	**Peru**	**SPIM**	**Lima**	**8**	Prueba BER no realizada	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		~~27/02/2015 => INEO technician will conduct the test on site, on 30/03/15~~ ~~30/03/15 => As talked during teleconference, the test requires to shutdown the whole satellite network. Need to confirm and coordinate it.~~ ~~12/05/2015: procedure sent, pending on test to be coordinated by ICAO~~ ~~20/05/ new procedure sent with calendar finalized on 1/2/06~~ 22/05: finalization should be onFr 22th of May	~~24th March 2015~~ ~~22th March 2015~~ ~~29th April 2015~~ ~~25/05/2015~~ 25/05/2015		pending	No completed pending issues	INEO After the first trials the BER SAT LOOP test was not positive it is required action to obtain the right BER value
P4SPIM05029	CLOSED	P	4	**Peru**	**SPIM**	**Lima**	**9**	Pendiente pruebas fallas de equipos (Sección 7.3)	5 February 2015	During the PSAT, it appears that this test was already performed. It could be easily checked, and upon request by ICAO, it could be done during the ORD period with the local FP and INEO remote coordination			25th February 2015		closed	OK	

File update: 2/1/2016 18:18							REDDIG-II - Pending issues									
Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SPIM050210	closed	P	3	**Peru**	**SPIM**	**Lima**	**10**	Errores plan de discado circuitos administrativos	5 February 2015	Local intervention of our expert		27/02/2015 => Targetted 02/03/2015 06/03/2015 => New configuration was sent to CORPAC on March 06th, pending to be implemented and tested. 12/03/2015 => configuration sent, first test ok. Pending confirmation 16/03/2015 => new test asked to confirm diagnostic 27/03/2015 => closed as per email of 19/03 22/05/2015: configuration changed, pending update from CORPAC. 15/07: no issue present in SPIM	~~[illegible]~~ 17/7/2015		Closed and Solved	Closed and Solved	INEO
P3SPIM050211	closed	P	3	**Peru**	**SPIM**	**Lima**	**11**	Calidad voz IP teleconferencia no satisfactoria	5 February 2015	1/ Diagnostic of the current configuration 2/ New configuration to be proposed after analysis 3/ Configuration implmented, to be tested (12/03)		05/03/2015 => diagnostic still on progress 13/03/2015 => modem configuration changed, test pending. 27/03/2015 => tests achieved with Manaus unsuccessful 30/04/2015: Pending test with new firmware 22/05/2015: new firmware not succesful. Pending configuration change and tests. 15/07: quality ok as per June tests	~~[illegible]~~ 17/7/2015		Quality of voice ok but not the IP telephone system	Quality of voice ok but not the IP telephone system	INEO
O2SPIM120212	closed	O	2	**Peru**	**SPIM**	**Lima**	**12**	anomalía que está presentándose en la comunicación AFTN de Santiago hacia Lima y Ezeiza (email OACI 12/02)	12 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the item P2SBMN02051	27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress exnected next week. 15/07: AFTN ok	~~[illegible]~~ 17/7/2015		Solved and Closed	Solved and Closed	INEO
P3SMPM05021	closed	P	3	**Suriname**	**SMPM**	**Paramaribo**	**1**	Presenta perdidas de paquetes en la red terrestre LEVEL 3 con Argentina, Manaus , Recife (muy alta). chile, Colombia, Ecuador, Guyana y Uruguay	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed. 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: no failure reported so far	~~[illegible]~~ 17/7/2015	LEVEL 3	solved and closed	solved and closed	LEVEL 3 INEO and ICAO

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P4SMPM05022	closed	P	4	**Suriname**	**SMPM**	**Paramaribo**	**2**	Pendiente pruebas BER	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/02/2015 => INEO technician will conduct the test on Tue. 3/3/2015 09/03/2015 => As talked during teleconference, the test requires to shutdown the whole satellite network. Need to confirm and coordinate it 12/03/2015: quarantine exist, pending on test to be coordinated by ICAO 20/04: new procedure sent with calendar (finalized on 21/05) 22/05: finalization should be onFr 22th of May	17/7/2015		solved and closed	solved and closed	INEO
P3SMPM05023	closed	P	3	**Suriname**	**SMPM**	**Paramaribo**	**3**	Teleconferencia IP solo con diez usuarios	5 February 2015	1/ Diagnostic of the current licence 2/ New 16 users licences to be provided after analysis		05/03/2015 => Hardware limitation found, solution to be provided. Will be codec change or hardware addition 21/04/2015 => DSP to be installed in Cisco SBMN & SAEZ 20/07: under procurement 21/09: test on laboratory is performed, new Cisco configuration will be provided			solved and closed	Solved and Closed	INEO
P3TTZP05021	closed	P	3	**Trinidad & Tobago**	**TTZP**	**Piarco**	**1**	NMS: refresco cambios de estados muy lento	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/2015 => In local NMCS status correct refresh. For the distant NMS it is not possible to improve it due to satellite hop 20/04: information requested 22/05/2015: information about to subcontractor for weatherwatch implementation 15/07: proposed browser Opera and Chrome appears faster, pending feedback	17/7/2015	3/6/2015	solved and closed	Solved and Closed	INEO
P4TTZP05022	closed	P	4	**Trinidad & Tobago**	**TTZP**	**Piarco**	**2**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed 15/07: graphical representation deployed	17/7/2015		solved but not closed	Not closed. NMS aspect is not completed yet. No indication about which position (A or B) for IBUs and LNBs	INEO MS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites
P3TTZP05023	closed	P	3	**Trinidad & Tobago**	**TTZP**	**Piarco**	**3**	Teleconferencia IP solamente trabaja con 11 usuarios no cumple con las especificaciones técnicas de la REDDIG	5 February 2015	1/ Diagnostic of the current licence 2/ New 16 users licences to be provided after analysis		05/03/2015 => Hardware limitation found, solution to be provided. Will be codec change or hardware addition 21/04/2015 => DSP to be installed in Cisco SBMN & SAEZ 20/07: under procurement 22/07: new configuration to be implemented 21/09: test on laboratory is performed, new Cisco configuration will be provided	end of september		closed and solved	The IP teleconference met with the quality of voice and number of users(16)	INEO
P2TTZP05024	CLOSED	P	2	**Trinidad & Tobago**	**TTZP**	**Piarco**	**4**	No hay conmutación automática en el IBUC en caso de falla solamente conmuta cuando se apaga la energía	5 February 2015	After analysis, it appears that the IBUC needs to be updated. To do so, we need to be connected directly to the equipment. INEO requests to ICAO the support from the local FP in order to perform this action.		28/02/2015 => New IBUC firmware successfully installed => Switching problem solved => Solved on site INEO	28 February 2015	2/28/2015	closed	OK solved	ok

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2TTZP05025	closed	P	2	**Trinidad & Tobago**	**TTZP**	**Piarco**	**5**	Perdida de paquetes en la red terrestre LEVEL 3 con Curitiba y Ecuador.	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		23/02/2015 => New request retransmitted to Level 3 25/02/2015 => Individual tests to be performed 27/02/2015 => tests conducted by L3, packet loss identified, except Panama, Curacao and Aruba on 27th of March the individual tests 27/04/2015: pending last result (27/04/2015) 15/07: no issue rteported so far	31/7/2015	LEVEL 3	closed and solved	OK Closed and Solved	LEVEL 3 INEO and ICAO
O2TTZP18026	CLOSED	O	2	**Trinidad & Tobago**	**TTZP**	**Piarco**	**6**	Communication problem with Paramaribo and Manaus according to the email from ICAO (18th Feb.)	18 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the item P2SBMN02051	25/02/2015 => New configuration will be tested by Level3 as of today, on all routers, under recommendation made by our Cisco expert (CCIE certified) 27/02/2015 => New configuration implemented, solution monitoring under validation 05/03/2015 => improvement of the network disabled, test still to be continued 21/04/2015 => New Skywan firmware installed => System on monitoring	21st April 2015		closed	OK	
P4SUMU05021	CLOSED	P	4	**Uruguay**	**SUMU**	**Montevideo**	**1**	Falta actualización los planos con los diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P4SUMU05022	solved	P	4	**Uruguay**	**SUMU**	**Montevideo**	**2**	Unidad 1070 cadena B no enciende luz verde aun cuando opera bien	5 February 2015	The faulty unit must be replaced by a spare part coming from ICAO-Lima premises. A RMA number will be generated once the faulty unit is ready to be shipped.		06/03/2015 => shipment of faulty unit towards NDSatCom pending 16/07/2015 => Waiting for spare part available at ICAO-Lima premises (spare IDU 1070 available, but still under Peru customs since 23/06/2015) 09/09/15: spare part available at ICAO office, waiting for ICAO shipment			pending	No action made solution required	ICAO A Modem from REDDIG II Lima spare part place will be sent to Montevideo
P3SUMU05023	CLOSED	P	3	**Uruguay**	**SUMU**	**Montevideo**	**3**	Falta cambiar Feed Horn	5 February 2015			25/02/2015 => New Feed Horn and antenna Unit ok to be done 24/03/2015 => New feed horn installed and antenna operational	24 March 2015	3/24/2015	closed	OK Closed	
P3SUMU05024	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**4**	NMS: refresco cambios de estados muy lento	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	25/02/2015 => a new NMS 3 version, current version. For the moment NMS 3 is not possible to migrate it due to satellite link 25/02: information requested 27/02/2015: information asked to subcontractor for validation/confirmation 15/07: proposed browser Opera and Chrome appears faster, pending feedback	17/7/2015	3/6/2015	solved and closed	Solved and Closed	INEO

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P4SUMU05025	closed	P	4	**Uruguay**	**SUMU**	**Montevideo**	**5**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	19/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect approved by CACI (L.Allaire email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be displayed 15/07: changed	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved but not closed	Not closed. NMS aspect is not completed yet. No indication about which position (A or B) for IBUs and LNBs Noted new date 24th April	INEO MS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites
P3SUMU05026	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**6**	Falta instalar antivirus en el NMS	5 February 2015	To be provided by INEO		27/03/2015: Antivirus almost identified (two remaining systems) 22/05/2015: procurement in progress 22/05/2015: license received. Pending procedure to be sent 15/07: procedure and FTP link sent	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		closed and solved	Closed and Solved	INEO
P3SUMU05027	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**7**	El NMS presenta información incorrecta	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	19/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect approved by CACI (L.Allaire email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be displayed 15/07: graphical aspect changed. Pending new info	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		closed and solved	Closed and Solved	INEO
P4SUMU05028	closed	P	4	**Uruguay**	**SUMU**	**Montevideo**	**8**	Pendiente pruebas BER	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/02/2015 => INEO technician will conduct the test on site, on 30/03/15 to 02/04/15 => As talked during teleconference, the test requires to destabilize the whole satellite network. Need to confirm and coordinate it 12/03/2015: procedure sent, pending on test to be coordinated by ICAO 22/05/: new procedure sent with calendar (finalized on 12/05) 22/05: finalization should be only 20th of June 15/07: tests shows a possible requirement of pointing checking, and possible interference	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 31/7/2015		pending	Pending BER Test.	INEO After the first trials the BER SAT LOOP test was not positive it is required action to obtain the right BER value
P4SUMU05029	solved	P	4	**Uruguay**	**SUMU**	**Montevideo**	**9**	La versión entregada de software para la VPN remota no es acorde al manual enviado para su instalación, no pudiendo instalarse según lo sugerido por INEO.	5 February 2015	An amendment to the User Manual will be sent to all the Reddig II Members by email.		17/03: new procedure sent, same as for SAEZ and SBMN 30/04: update requested, pending answer 22/05/2015: pending information, asked during conf call of 19/05 15/07: pending new info.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015 15 sept		pending	Not solved. Configuration must to be done by INEO the week of 20th July	INEO VPN equipment has been configured. We request a simple IP internet address to permit the connection. With the current configuration the connection is not possible.

File update: 2/1/2016 18:18

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SUMU050210	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**10**	Perdidas de paquetes en la red terrestre LEVEL 3 con Bolivia, French Guyana, Surinam, Trinidad &Tobago y Venezuela.	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		26/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by L3 were successful. Normal Remote Outbrief Procedure sent on 27th of March for statistical tests 22/06/2015 :pending test result confirmation 15/07: no issue reproted so far	24th March 2015 24th March 2015 29th April 2015 17/7/2015	LEVEL 3	closed and solved	Closed and Solved	LEVEL 3 INEO and ICAO
P1SUMU020511	closed	P	1	**Uruguay**	**SUMU**	**Montevideo**	**11**	Async circuit for radar data from SAEZ does not work since initial installation	5 February 2015			30/06 configuration changed, pending test 22/07: improvement commenced during con call of 15/07, pending more info 15/07: Configueration is the same as with AFTN.pending info	24th March 2015 24th March 2015 29th April 2015 17/7/2015		solved but in observation	Solved but in observation	INEO /ICAO Radar data of Argentina is now processed in the automation ceenter of Montevideo
P2SVIM05021	CLOSED	P	2	**Venezuela**	**SVIM**	**Maiquetia**	**1**	No se observa el switcheo automatico en el RSS	5 February 2015	We have contacted our site manager, and apparently it was the automatic switching of the RSS from B to A. It's normal that it's doesn't work because it's only possible manually. Please confirm that it's issue can be SOLVED		25/02/2015 Solved by INEO => Closed as per INEO	18 February 2015	2/18/2015	closed	OK closed	
O1SVIM18022	CLOSED	O	1	**Venezuela**	**SVIM**	**Maiquetia**	**2**	Communication problem with Georgetown, Paramaribo, and Manaus according to email of the 18th Feb.	18 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the item P2SBMN02051	25/02/2015 => New configuration will be tested by Level3 as of today on all routers under recommendation made by our Cisco expert (CCIE certified) 27/02/2015 => New configuration implemented, solution remaining under validation 28/02/2015 => improvement at the routers channels, but still to be confirmed 17/03/2015 => test failed to FP 27/03/2015 => no issue reported so far 21/04/2015 => New Skywan firmware installed => System on monitoring	27 March 2015		closed	OK System on monitoring	ok
O1SVIM25023	CLOSED	O	1	**Venezuela**	**SVIM**	**Maiquetia**	**3**	All the AFTN communication out of service	24 February 2015	Problem occured due to other equipment		26/02/2015 => Waiting for result after OSPF configuration modification done today on L3 VSU 3 network 27/02/2015 => solved 21/04/2015 => New Skywan firmware installed => System on monitoring	27th February 2015 21st April 2015		closed	OK Closing date	ok
#GBB_tests	CLOSED	O		**Multiple sites**	**Multiple sites**	**Multiple sites**	**1**	Issues experimented in GBB dedicated communication	4/2/2015	Individual configuration checks and tests.		30/06: configuration changed, need for re-issues 22/07: open 15/07: v14 has this issue checked, pending tests and possible correction.	24th March 2015 24th March 2015 29th April 2015 17/7/2015		CLOSED	OK closed final test was made December 2015	ok
	ON PROGRESS					**Muliples sites**	**1**	Freezing of MODEM	February 2015	Is under ND SATCOM		21/09: no more issue observed since deployment of new NDSatcom software and last configuration change in Recife. Date of observation: 15/09 Could we consider the problem closed by the end of september?	31th July end of september		P ending	INEO presented an action plan to solve the frezing that will be completed by the end of 2016	INEO (NDSatcom)

File update: 2/1/2016 18:18							REDDIG-II - Pending issues									
Item	**STATUS (as per INEO)**	**TYPE O/M**	**CRITICITY**	**Country**	**Node**	**City**	**Item #**	**Outstanding issues**	**Opening date**	**Action(s) to be performed**	**COMMENTS**	**Current update**	**Expecting closing date**	**Real closing date**	**STATUS (as per ICAO)**	**ICAO STATES Commentaries**	INEO / ICAO Responsible to solve the pending issue
Legend of colours																	
Legend colour	PENDING	The line remains uncolored since the status of the issue is still pending												Status (as per ICAO)		Customer initial color	
Legend colour	ON PROGRESS	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												pending	8	Customer initial color	
Legend colour	SOLVED	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												solved but not closed	5	Customer initial color	
Legend colour	Solution identified	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												closed	33	Customer initial color	
Legend colour	CLOSED	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												**TOTAL**	**46**	Customer initial color	

Example

Item	STATUS	TYPE P/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date
P 1 SAEZ 02 05 11	PENDING	P	1	Argentina	SAEZ	Ezeiza	11		05 / 02 / 2015
Type Criticity Node Month Day Item #									

M will be for Maintenance problem with the following Gradation
- 1 Critical
- 2 Urgent
- 3 Non-critical
- 4 Minor

P will be for PSAT observation with the following Gradation
- 1 Critical
- 2 Urgent
- 3 Non-critical
- 4 Minor

APPENDIX E / APENDICE E

Amendment III to Contract 22501200 for the Provision of a New Regional Aeronautical Telecommunication Network (REDDIG II) and associated equipment and services for the REDDIG II Member States.

Contract 22501200 for the Provision of a New Regional Aeronautical Telecommunication Network (REDDIG II) and associated equipment and services for the REDDIG II Member States (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay and Venezuela) is hereby amended to add one (1) node in Brasilia (Brazil), to increase the price of the Contract and to extend the implementation schedule accordingly.

This Amendment III shall form part of ICAO Contract 22501200 between the International Civil Aviation Organization (ICAO) acting on behalf of and as mandatary for the REDDIG II Member States, and the Consortium consisting of INEO Engineering and Systems and LEVEL 3 PERÚ S.A. and shall become effective on the date of signature of this document by ICAO, INEO Engineering and Systems and LEVEL 3 PERÙ S.A.

All articles of Contract 22501200 not covered in this Amendment III or previous Amendments I and II shall remain unchanged and in force.

Articles nos. 7.2.4, 8.4, 13.9 through 13.14 are added and Articles nos. 2.2, 2.3, 2.4, 5.1.1, 5.2.1, 5.2.2, 6.3, 6.5, 9.1, 11.3, 11.13 and 16.3 are hereby amended and shall become:

"2.2 This project covers equipment and Services for the Network required for the seventeen (17) + one (1) sites as further specified below:

Sites (countries):
Ezeiza (Argentina)
La Paz (Bolivia)
Manaus (Brazil)
Recife (Brazil)
Curitiba (Brazil)
Brasilia (Brazil)
Santiago (Chile)
Bogotá (Colombia)
Guayaquil (Ecuador)
Georgetown (Guyana)
Cayenne (French Guiana)
Asunción (Paraguay)
Lima (Peru)
Paramaribo (Suriname)
Piarco (Trinidad and Tobago)
Montevideo (Uruguay)
Maiquetía (Venezuela)

Honduras (Tegucigalpa), as per Attachment I, Technical Specifications Compliance Document from INEO E&S, Section C, 2.1.2 and 2.2.7"

ASESORIA LEGAL LEVEL 3 PERÚ S.A. V°B°

"2.3 A six (6)-month leasing of related ground communication services is included in the Contract [except for the node of Brasilia (Brazil)] and will be provided by Level 3 under the Contractor's responsibility [starting after successful Final Network Acceptance Tests (date of signed FNAT certificate)], as per Attachment I and XI. Such services may be invoiced directly from Level 3."

"2.4 The Contract shall be implemented in three phases:

- Phase I: provision of the System Design Document (SDD) as defined in Article 7.2 and approval of the SDD;
- Phase II: provision of the Network and related Services;
- Phase III: provision of the node of Brasilia (Brazil)."

"5.1.1 The total price of Phases I, II and III of this Contract as defined in Article 2.4 is **US $4,678,797.29 (four million, six hundred and seventy-eight thousand, seven hundred and ninety-seven United States dollars and twenty-nine cents)**, broken down as follows:

i-	Total price of Phase I:	US $285,455.00
ii-	Total Price of Phase II:	US $4,056,672.98
	Consisting of:	
	Original price of Phase II:	US $3,943,398.98
	Addition to Phase II, subject of Amendment I:	US $84,798.00
	Reduction to Phase II, subject of Amendment I:	-US $3,840.00
	Addition to Phase II, subject of Amendment II:	US $32,316.00
iii-	Total Price of Phase III, subject of Amendment III:	US $336,669.31"

"5.2.1 All invoices shall be issued to ICAO Finance Branch for payment in accordance with the payment schedule as indicated below:

Ref.	Payment Term for Phase I
1	**US $114,182** representing 40% of the price of Phase I as down payment with acceptable Bank Guarantee (as per invoice 8500006629)
2	**US $171,273** representing 60% of the price of Phase I upon approval of the SDD (as per invoice 8500007772)
Ref.	**Payment Term for Phase II**
3	**US $1,136,477.09** as down payment with acceptable Bank Guarantee (as per invoices 8500007773 and 8500008502)
4	a) **US $1,337,200.54** representing 35% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II); and b) **US $9,694.80** representing 30% of the addition to Phase II, subject of Amendment II (both payments as per invoice ESF1214003) upon the last shipment of equipment and acceptable Bank Guarantee
5	**US $382,057.30** representing 10% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II) (as per invoice ESF0914004), upon completion of theoretical-practical training
6	a) **US $573,085.95** representing 15% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II) (as per invoice ESF0315001); and

	b) **US $118,050** representing 50% of Table 1 of Attachment II upon satisfactory Provisional Site Acceptance Test (PSAT)
7	**US $382,057.30** representing 10% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II), upon satisfactory Final Network Acceptance Test (FNAT) and Acceptable Performance Bond
8	**US $118,050** representing 50% of Table 1 of Attachment II three months after satisfactory Final Network Acceptance Test (FNAT)
Ref.	**Payment Term for Phase III**
9	**US $134,467.72** representing 40% of the price of Phase III (excluding US $500 for installation of equipment for ground communication services), as down payment with acceptable Bank Guarantee
10	**a) US $201,701.59** representing 60% of the price of Phase III (excluding US $500 for installation of equipment for ground communication services), and **b) US $500** for installation of equipment for ground communication services upon satisfactory Site Acceptance Test (SAT)

"

"5.2.2 Correct invoices shall be accepted by ICAO for the above payments provided they are accompanied or preceded by the documents as set forth in Articles 5.2.2.1 to 5.2.2.10, using the table references as indicated under Article 5.2.1.

5.2.2.1 **Down Payment on placement of order for Phase I against invoice 8500006629 and submission of an acceptable Bank Guarantee:**
The Contractor shall submit:
i. One (1) original invoice 8500006629 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 1;
ii. Acceptable Bank Guarantee, as per Article 6.1.

5.2.2.2 **Progress Payment against invoice 8500007772 upon approval of the System Design Document (SDD):**
The Contractor shall submit:
i. One (1) original invoice 8500007772 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 2;
ii. Written confirmation of approval of the SDD from the REDDIG II PROJECT GROUP.

5.2.2.3 **Down Payment on placement of order for Phase II against invoices 8500007773 and 8500008502 and submission of an acceptable Bank Guarantee**
The Contractor shall submit:
i. One (1) original invoice 8500007773 and 8500008502 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 3;
ii. Acceptable Bank Guarantee, as per Article 6.2.

5.2.2.4 **Progress Payment at the last shipment of equipment against invoice ESF1214003 and submission of an acceptable Bank Guarantee:**
The Contractor shall submit:
i. One (1) original invoice ESF1214003 plus one (1) copy covering the cumulative amount as per Article 5.2.1, Ref. 4a and 4b);
ii. One (1) original Factory Acceptance Certificate duly signed as per Article 11.7;
iii. Acceptable Bank Guarantee, as per Article 6.3.
iv. Shipping documents and insurance certificate as per Article 9.9.

5.2.2.5 **Progress Payment at satisfactory completion of theoretical-practical training against invoice ESF0914004:**

i. One (1) original invoice ESF0914004 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 5;
ii. Written confirmation of satisfactory completion of theoretical-practical training from the REDDIG II PROJECT GROUP;

5.2.2.6 **Progress Payment at satisfactory Provisional Site Acceptance against invoice ESF0315001:**
The Contractor shall submit:
i. One (1) original invoice ESF0315001 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 6a);
ii. Sixteen (16) original Provisional Site Acceptance Certificates (one from each site) duly signed as per Article 13.1.
Level 3 shall submit:
iii. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 6b;
iv. A copy of the sixteen (16) Provisional Site Acceptance Certificates (one from each site) duly signed as per Article 13.1.

5.2.2.7 **Progress Payment at satisfactory Final Network Acceptance:**
The Contractor shall submit:
i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 7;
ii. One (1) original Final Network Acceptance Certificate duly signed as per Article 13.6;
iii. Acceptable Performance Bond as per Article 6.5.

5.2.2.8 **Final Payment three (3) months after satisfactory Final Network Acceptance:**
Level 3 shall submit:
i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 8;
ii. One (1) original Certificate of satisfactory provision of the ground communication services (Attachment X) duly signed by REDDIG II PROJECT GROUP.

5.2.2.9 **Down Payment on signature of Amendment III for Phase III and submission of an acceptable Bank Guarantee:**
The Contractor shall submit:
i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 9;
ii. Acceptable Bank Guarantee, as per Article 6.3.

5.2.2.10 **Progress Payment at satisfactory Site Acceptance of the Brasilia node:**
The Contractor shall submit:
i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 10a);
ii. One (1) original Site Acceptance Certificate duly signed as per Article 13.13;
iii. Acceptable Performance Bond as per Article 6.5:

The Contractor or Level 3 shall submit:
iv. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 10b);
v. One (1) original Site Acceptance Certificate duly signed as per Article 13.13."

"6.3 The progress payments of Phase II covering the cumulative amount shown in Article 5.2.1, Ref. 4a) and 4b), and the down payment of Phase III covering the amount shown in Article 5.2.1, Ref. 9, shall be secured by Bank Guarantees acceptable to ICAO as per the model under Attachment IV that shall be submitted to ICAO at the latest with the invoice for the progress payment. The guarantees shall remain valid and at its full value until final delivery of the equipment of the Network in the REDDIG II Member States customs."

"6.5 A Performance Bond in the form of a Bank Guarantee, as per the model under Attachment V, shall be provided by the Contractor to ICAO and shall remain in effect from the date of the FNAT Certificate for the full period of the warranty as detailed in Article 16. The amount of the performance bond shall be **US $370,729.90**. A separate Performance Bond for the Brasilia node for an amount of **US $33,666.93** shall be provided by the Contractor to ICAO and shall remain in effect from the date of the SAT Certificate for the Brasilia node for the full period of the warranty of the Brasilia node as detailed in Article 16."

"7.2.4 The Contractor shall provide, within five (5) weeks of the signature of Amendment III, for the REDDIG II PROJECT GROUP evaluation and approval, the revised SDD with the technical specification for the Brasilia node and revised configuration information and software management information impacting all other nodes. Together with the revised SDD the Contractor shall submit for the REDDIG II PROJECT GROUP's review and approval, copied to ICAO for information purposes, a detailed Implementation Schedule, the Factory Acceptance Test Procedures and the Site Acceptance Test Procedures for the Brasilia node. The review and approval times of Article 7.2.2 shall apply *mutatis mutandis* to the revised SDD with the technical specification for the Brasilia node."

"8.4 The meetings as per Article 8.1 through 8.3 shall apply *mutatis mutandis* for the node of Brasilia (Brazil) subject of Amendment III. The Kick Off Meeting for the node of Brasilia (Brazil) shall be held within two (2) weeks of signature of Amendment III and may be held remotely via teleconference."

"9.1 Delivery, installation and commissioning shall take place in accordance with the Contract Implementation Schedule in Attachment IX. The Contract Implementation shall not exceed **fifteen and a half (15.5)** months from the Commencement Date, excluding the Brasilia node. Delivery, installation and commissioning of the Brasilia node shall not exceed **seven** (7) months from the date of signature of Amendment III to the Contract."

"11.3 The Contractor shall arrange for one (1) FAT session, to run consecutively for the Network equipment and not fragmented sessions. The Contractor shall arrange one (1) separate FAT session for the Brasilia node."

"11.13 The Contractor shall allow the participation of six (6) personnel (four (4) from the REDDIG II Member States and two (2) from the REDDIG II PROJECT GROUP) for the Factory Acceptance Tests and shall provide air travel (economy class) from and to the respective REDDIG II Member State, terminal transportation (airport to hotel and return), medical travel insurance and DSA costs (US $358 /day /person) for the REDDIG II PROJECT GROUP's and REDDIG II Member States' Personnel. Additionally, for the

Brasilia node the Contractor shall allow the participation of two (2) personnel (one (1) from Brazil and one (1) from the REDDIG II PROJECT GROUP) for the Factory Acceptance Test and shall provide, for these two (2) personnel, air travel (economy class) from and to respective REDDIG II Member State, terminal transportation (airport to hotel and return), medical travel insurance and DSA costs (US $358 /day /person)."

"

13.9 Regarding the Site Acceptance of the node of Brasilia (Brazil), the SAT Testing and Procedures shall consist of verification of the site installation and its integration in the Network (satellite and ground), all Network performance and technical functional characteristics under this Contract in a true operational environment. The SAT must also verify that all the equipment under this Amendment III, including spare parts, has been delivered and that all Documentation, Drawings, As-Built Plans, etc., have been completed and delivered.

13.10 The Contractor shall submit for REDDIG II PROJECT GROUP's review and approval together with the SDD for the node of Brasilia (Brazil), copied to ICAO, the proposed Site Acceptance Test Procedures. The REDDIG II PROJECT GROUP shall notify the Contractor of its comments and decision within the same time frames as defined for the SDD in Article 7.2.2. The Contractor shall modify the SAT procedures accordingly and shall resubmit the procedures together with the SDD.

13.11 If the system or sub-system fails to pass one or more of the tests, i.e. the test(s) shows that the system is non-compliant with the requirements of the specifications, then the Contractor shall correct the cause of the failure(s). The REDDIG II PROJECT GROUP reserves the right to have all the tests or any single test performed again, on the Network and/or the node of Brasilia (Brazil) under this Contract. All such costs shall be borne by the Contractor, including travel and subsistence costs (covering accommodation, meals and local transportation) for the REDDIG II PROJECT GROUP's representative(s) re-participation.

13.12 Notwithstanding any other rights of, or remedies available to ICAO/ the REDDIG II PROJECT GROUP under the Contract, in case the Network and/or the node of Brasilia (Brazil) remain defective or otherwise do not conform to the specifications or other requirements of the Contract after the SAT, ICAO/the REDDIG II PROJECT GROUP, at its sole option, may reject or refuse to accept the node of Brasilia (Brazil), and within thirty (30) days following receipt of notice from ICAO of such rejection or refusal to accept the node of Brasilia (Brazil), the Contractor shall, in sole option of ICAO/ REDDIG II PROJECT GROUP:

i) repair the node of Brasilia (Brazil) in a manner that would enable the node of Brasilia (Brazil) to conform to the specifications or other requirements of the Contract; *or*,
ii) replace the node of Brasilia (Brazil) with equipment of equal or better quality; *and*,
iii) pay all costs relating to the repair or return of the defective equipment as well as the costs relating to the storage of any such defective equipment and for the delivery of any replacement equipment to Brasilia (Brazil).

13.13 The Site Acceptance Certificate (Attachment VI) will be signed immediately upon meeting satisfactory completion of the following conditions:

i. Successful SAT;
ii. All Training Programs have been satisfactorily completed:

iii. All Documentation, Drawings, As-Built, Plans, etc., have been completed and delivered;
iv. All Spare Parts supplied under this Amendment III have been verified in an operational manner and proved to operate correctly.

13.14 Minor defects that do not affect the operation and service of the Network, shall not permit the REDDIG II PROJECT GROUP/ the REDDIG II Member States to refuse to sign the on-Site Acceptance Certificate(s) and the Contractor shall undertake to resolve those defects at their own expense and in an agreed time frame."

"16.3 The Contractor's warranty shall remain in effect for a period of twenty-four (24) months from the final commissioning date of the Network (signed Final Network Acceptance Certificate) and with respect to the node of Brasilia (Brazil) for a period of twenty-four (24) months from the final commissioning date of Phase III (signed Site Acceptance Certificate), but in no case later than thirty-six (36) months from the FAT of the equipment of the Network if the Final Network Acceptance/ Site Acceptance of the node in Brasilia (Brazil) is delayed for reasons beyond the Contractor's control, provided that with respect to a major failure of the Network, the consequence of which being that the Network cannot be operationally available, the original period of warranty shall be extended for a warranty period equivalent to the time required for necessary repair.

Note: The warranty period shall begin anew for any part of the Network replaced or repaired pursuant to this article, however be valid no longer than thirty-six (36) months from the FNAT (date of signed FNAT-certificate) and with respect to the node of Brasilia (Brazil) be valid no longer than thirty-six (36) months from the SAT of Phase III (signed Site Acceptance Certificate)."

Attachment II - Scope of Supply and Pricing is hereby amended to revise the scope of supply and to increase the price of the Contract accordingly.

Attachment VI - Model Provisional Site/Final Network Acceptance Test Certificate is hereby amended to add the SAT Certificate for the node in Brasilia (Brazil).

Attachment IX – Implementation schedule is hereby amended to add the commissioning of the node in Brasilia (Brazil).

Signed on 3 AUGUST 2015. , on behalf of:
Date

ICAO
Technical Cooperation Bureau

Technical Co-operation Bureau

Jacques-Olivier KLOTZ
Aeronautical Export Department Director 24/07/2015
INEO Engineering and Systems

LEVEL 3 PERÚ S.A.

GIANNI HANAWA MAKABE
REPRESENTANTE LEGAL
LEVEL 3 PERÚ S.A.

OSWALDO CLAROS UGALDE
REPRESENTANTE LEGAL
LEVEL 3 PERÚ S.A.

ASESORÍA LEGAL LEVEL 3 PERÚ S.A. V°B°

"Revised Attachment II
Scope of Supply and Pricing
All prices in USD

Description	Qty	Total
Phase I - provision of SDD, which includes:		
SDD - NMS	Lot	$56,078.00
FAT Protocols - NMS	Lot	$8,084.00
SAT Protocols - NMS	Lot	$8,084.00
Installation Procedures - NMS	Lot	$32,322.00
Training Documentation - NMS	Lot	$14,860.00
SDD – VSAT and ground network	Lot	$79,205.00
FAT Protocols - VSAT and ground network	Lot	$14,266.00
SAT Protocols - VSAT and ground network	Lot	$14,266.00
Installation Procedures - VSAT and ground network	Lot	$38,912.00
Training Documentation - VSAT and ground network	Lot	$19,378.00
Sub Total Phase I		***$285,455.00***

Phase II - provision of the Network and related Services	
Original price of Sub Total Phase II	*$3,943,398.98*
Additional scope, subject of Amendment I	*$84,798.00*
Removed scope, subject of Amendment I	*-$3,840.00*
Addition to Phase II, subject of Amendment II	*$32,316.00*
Sub Total of Phase II	***$4,056,672.98***

Phase III - provision of the node in Brasilia (Brazil)	
Price of Sub Total Phase III, subject of Amendment III	*$336,669.31*
Sub Total of Phase III	***$336,669.31***

Total price, up to installation and site acceptance on every site in the countries identified in Article 2.2, on a DAP basis (Delivery At Place – Incoterms 2010)	**$4,678,797.29**

(see following page for detailed scope of supply and pricing for phases I, II and III)

Options:

No.	Description	Total
1	Extension of MPLS services for up to additional 54 months (for details see Table 2)	$33,090/ month (excl. node of Brasilia) $34,290/ month (incl. node of Brasilia)
2	a) Civil works for Chile (transfer of existing antenna)	$80,429
	b) Civil works for Chile (provision, transport and installation of a new antenna)	$86,736

ASESORIA LEGAL LEVEL 3 PERU S.A. V°B°

Detailed scope of supply and pricing for each site, excluding Brasilia (Brazil), subject of Amendment II

See Amendment II for corresponding 22 pages.

Detailed scope of supply and pricing for the node in Brasilia (Brazil), subject of Amendment III

	Unit	Qty	Unit Price USD	Total USD
Brazil(Brasilia)				
Equipment: Routing System				
NETGEAR SW F/E Stackable Managed Sw	u	2	559.50	1,119.00
NETGEAR ProSafe VPN Dual WAN Gigabit	u	1	471.00	471.00
RSS-16 : RSS 16 Slot 4U Chassis	u	1	5,264.00	5,264.00
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1		
IPC-16-R : Network Control Card - 16	u	1		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	7		
AB-D25-R : D25 A/B Card	u	4		
RSS-16 : RSS 16 Slot 4U Chassis	u	1	3,980.00	3,980.00
K16-RPC-WRI, 100-240 VAC, Mini : PWR MODULE, 1 Slot Redundant	u	1		
IPC-16-R : Network Control Card - 16	u	1		
AB-2RJ8-R : Dual 8 Wire Mod. Jack A/B Card	u	4		
AB-D25-R : D25 A/B Card	u	2		
FP-AB-RSS : Blank Panel for unused slots	u	15		
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	4	4,191.25	16,765.00
DATA license	u	2		
4-Port Async/Sync Serial HWIC	u	2		
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	8		
Two-port Voice Interface Card - E and M	u	6		
Two-Port Voice Interface Card - FXS and DID	u	2		
Four-port Voice Interface Card - FXO	u	2		
Cisco 2901 UC Bundle, PVDM3-16, UC License PAK	u	2	3,631.00	7,262.00
DATA LICENCE	u	1		
2-Port Async/Sync Serial WAN Interface Card	u	1		
RS-232 Cable, DCE Female to Smart Serial, 10 Feet	u	2		
Two-port Voice Interface Card - E and M	u	2		
Two-Port Voice Interface Card - FXS and DID	u	1		
Two-port Voice Interface Card - FXO	u	1		
extra cost for stand alone REDDIG node		15%		5,229.15
TOTAL Equipment: Routing System	**set**	**1**		**$40,090**
Equipment: VSAT Terminal				
IDU 1070 19" NS + PS AC	u	2	16,855.50	33,711.00
Lic-Key 1070 Full Power Package	u	2		
License OSPF	u	2		
Lic 8 PSK	u	2		
Lic-Key Mesh Topology	u	2		
Lic TCP-A	u	2		
extra cost for stand alone REDDIG node		15%		5,056.65
TOTAL Equipment: VSAT Terminal	**set**	**1**		**$38,768**

	Unit	Qty	Unit Price USD	Total USD
Equipment: VSAT antenna				
Supply, transport and installation of a new antenna	set	1	43,433.00	43,433.00
Supply and installation of a 3,8m Antenna	u	1		
New anchorage	u	1		
Transport DAP (Incoterm 2010) of the new antenna to the site	u	1		
VSAT antenna	set	1		
Civil work, including:	set	1	45,000.00	45,000.00
Construction of the slab with H30 concret and additives	u	1		
Ground system of the slab < 5 Ohms	u	1		
Trench and manholes from antenna to the technical room (considered distance < 70 m)	set	1		
TOTAL Equipment VSAT antenna	set	1		$88,433
	set	1		-
Equipment: Network Management System				
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	14,939.00	14,939.00
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		
HP Hard Disk 300Go 3.5 SAS 15000 tours/min	u	2		
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1		
HP LaserJet Pro 400 M401dn /33ppm	u	1		
Eaton Ellipse ECO 1200 FR USB	u	1		
WhatsUp Gold Distributed Remote 25 Devices	u	1		
Antivirus	u	1		
IP to serial converter	u	1		
TOTAL Equipment: Network Management System	set	1		$14,939
Other VSAT equipments				
IBUC 40W	u	2	11,952.00	23,904.00
Tx 1+1 switching system	u	1	6,858.00	6,858.00
Rx 1+1 switching system	u	1	7,501.00	7,501.00
LNB	u	2	569.50	1,139.00
Handheld Terminal	u	1	773.00	773.00
Set of breakers	u	1		
Coaxial connector	u	5	25.00	125.00
Coaxial cable	m	150	6.46	968.75
Power cable	m	400		
Cat 5 Cable	m	150	4.88	732.50
extra cost for stand alone REDDIG node		15%		6,300.19
TOTAL Other VSAT equipments	set	1		$48,301
Equipment: Ancillaries / Others				
Horloge RT CP 09	u	1	5,449.00	5,449.00
Rack	u	1	2,504.00	2,504.00
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical romm and configuration)	u	1	380.00	380.00
Installation accessories	u	1	1,147.00	1,147.00
TOTAL measuring & Test equipment	set	1		$9,480
Services: Installation				
Installation of equipment on site	set	1	27,470.75	27,470.75
TOTAL Services: Installation	set	1		$27,471
Measuring equipment and tools				
LAN/NETWORK Protocol Analyzer SignalTEK II	u	1	2,527.19	2,527.19
Multimeter (one for each site)	u	1	490.44	490.44
TOTAL measuring & Test equipment	set	1		$3,018

	Unit	Qty	Unit Price USD	Total USD
Documentation Preparation Studies office Installation drawing All Necessary documents for the Project As Built Drawing	set	1	4.852 59	4 852 59
TOTAL Documentation	**set**	**1**		**$4,852.59**
Factory acceptance test in France				
FAT preparation (procedures, plateform, organisation, etc ..)	set	1	1,351.03	1.351.03
FAT development	set	1	1,298 35	1 298.35
Travel Brasil & REDDIG representative	set	2	1.628 61	3 257.22
DSA Brasil & REDDIG representative	u	14	358 00	5.012.00
TOTAL Factory acceptance test in France	**set**	**1**		**$10,918.60**
Site acceptance test				
SAT preparation	set	1	1.458 75	1.458 75
SAT development:				
On-site pre SAT with AAA	set	1	3.194.81	3.194.81
Site tour with ICAO personnel- not applicable				
TOTAL Site acceptance test	**set**	**1**		**$4,653.56**
Theoretical-practical training sub-programme of ten (10) working days, to be conducted in Brasil (Air travel tickets included)				
Training cession (preparation, organization, air tickets, etc...)	set	1	20.000 00	20.000.00
DSA	u	10	290 00	2,900.00
TOTAL Training: theoretical-practical	**set**	**1**		**$22,900.00**
Technical assistance for ground backbone (including preventive maintenance) Included in MPLS Services offer				
TOTAL Technical assistance for ground backbone (including preventive maintenance)	**set**	**0**		**$0**
MPLS services during the first six (6) months of operation of the new network. Included in MPLS Services offer (For details see Table 1)				
TOTAL MPLS services during the first six (6) months of operation of the new network.	**set**	**1**		**$0**
Payment for the satellite segment during the first six (6) months of operation of the new network, if it is decided not to use the current satellite that provides such segment to the REDDIG (IS-14) N/A				
TOTAL Payment for the satellite segment during the first six (6) months of operation of the new network, if it is decided not to use the current satellite that provides such segment to the REDDIG (IS-14)	**set**	**0**		**$0**
Warranty (2 years)				
TOTAL Warranty (2 years)	**set**	**1**	**$11,099.75**	**$11,100**
Shipment DAP Incoterm 2010 on each site and insurance				
TOTAL Shipment DAP Incoterm 2010 on each site and insurance	**set**	**1**	**$11,245.19**	**$11,245**
Installation of the equipment for ground communication services	set	1	500.00	500.00
TOTAL Brasilia node (Brazil)	set	1		$336,669.31

Detailed scope of supply of the new antenna for Paraguay, subject of Amendment I:

	Unit	Qty.	Unit Price US$	Total US$
Paraguay (Asuncion)				
Supply, transport and installation of a new antenna	set	1	[illegible]	[illegible]
Supply and installation of a 5.5m Antenna				
New anchorage				
Transport CIF Peruvian port (Callao) to the Paraguayan port				
Civil work, including:	set	1	[illegible]	[illegible]
Construction of the platform of 30 concrete and adobe				
Grounding system of the slab + 8 Ohms				
Tie rod and manhole 1.20m and one in the pedestal room				
Considered distance = 50km				
Transfer of the equipment to the new location	set	1	[illegible]	[illegible]
Notes Ground studies of the new location of the radar antenna are not considered and not included above Slab foundation is standard 7.5m² with 150 Kg/cm² resistance The distance between the new location and the technical room should not exceed 20 meters No road or airfield crossing are included The installation of the antenna will be held before or during the migration from the existing network to the new one. However, in case this would take more time than foreseen for the migration time of the whole network, an interruption of the services of the site will be necessary. This case will be studied by INECO E&S and CCO				
TOTAL Paraguay (Asuncion)	set	1		581,798

Table 1 – Prices for MPLS services (ground communication services) during initial 6 months after commissioning of the Network (included in scope of supply)

	Site	BW	MRC
1	Argentina/Ezeiza	256 Kbps	$830.00
2	Bolivia/La Paz	256 Kbps	$3,300.00
3	Brazil/Curitiba	256 Kbps	$830.00
4	Brazil/Recife	256 Kbps	$1,050.00
5	Brazil/Manaus	256 Kbps	$2,500.00
6	Chile/Santiago	256 Kbps	$830.00
7	Colombia/Bogota	256 Kbps	$1,050.00
8	Ecuador/Guayaquil	256 Kbps	$830.00
9	French Guiana/Cayenna	256 Kbps	$5,400.00
10	Guyana/Georgetown	256 Kbps	$3,850.00
11	Paraguay/Asuncion	256 Kbps	$1,800.00
12	Peru/Lima	256 Kbps	$830.00
13	Suriname/Paramaribo	256 Kbps	$8,450.00
14	Trinidad and Tobago/Piarco	256 Kbps	$1,800.00
15	Uruguay/Montevideo	256 Kbps	$1,800.00
16	Venezuela/Maiquetia	256 Kbps	$4,200.00
		Sub-TOTAL per month	$39,350.00
	TOTAL for the first six (6) months of operation of the new network		$236,100.00

The above prices include all applicable taxes in the REDDIG II Member States.

The above prices include the leasing of modems and routers which remain the property of Level 3. At the time of installation, Level 3 will provide a detailed list of the leased equipment including serial numbers/ part numbers. Should ICAO/ the REDDIG II Member States choose not to continue to lease the MPLS services from Level 3 after the initial 6 month period, Level 3 will remove such equipment.

ASESORIA LEGAL LEVEL 3 PERÚ S.A. V°B°

Options

Option 1)

Table 2 – Prices for MPLS services (ground communication services) for additional 54 months after initial 6 month period.

	Site	BW	MRC
1	Argentina/Ezeiza	256 Kbps	$830.00
2	Bolivia/La Paz	256 Kbps	$2,700.00
3	Brazil/Curitiba	256 Kbps	$830.00
4	Brazil/Recife	256 Kbps	$1,050.00
5	Brazil/Manaus	256 Kbps	$1,500.00
6	Chile/Santiago	256 Kbps	$830.00
7	Colombia/Bogota	256 Kbps	$1,050.00
8	Ecuador/Guayaquil	256 Kbps	$830.00
9	French Guiana/Cayenna	256 Kbps	$5,400.00
10	Guyana/Georgetown	256 Kbps	$3,850.00
11	Paraguay/Asuncion	256 Kbps	$1,800.00
12	Peru/Lima	256 Kbps	$830.00
13	Suriname/Paramaribo	256 Kbps	$5,800.00
14	Trinidad and Tobago/Piarco	256 Kbps	$1,800.00
15	Uruguay/Montevideo	256 Kbps	$1,800.00
16	Venezuela/Maiquetia	256 Kbps	$2,190.00
	Sub-TOTAL per month		$33,090.00
	Total for twelve months of operation of network		$397,080.00
17	Brazil/Brasilia, subject of Amendment III	256 Kbps	$1,200.00
	Sub-TOTAL per month, including node of Brasilia (Brazil)		$34,290.00*
	Total for twelve months of operation of network, including node of Brasilia (Brazil)		$411,480.00

The above prices include all applicable taxes in the REDDIG II Member States and are valid up to 54 months after Final Network Acceptance Test of Phase II of the Contract. Regarding the node of Brasilia (Brazil) the foregoing shall apply mutatis mutandis and the price shall be valid 60 months after Site Acceptance Test (SAT) of Phase III, subject of Amendment III.

* The price of the node of Brasilia (Brazil) includes the leasing of modems and routers which remain the property of Level 3. The price shall only be included in the Sub-TOTAL per month upon satisfactory SAT of the node of Brasilia (Brazil).

In the event of a change in the tax legislation in one of the REDDIG II Member States (resulting in tax increase in one of the REDDIG II Member States), the parties may discuss a possible impact on the price for the MPLS services. If an agreement on a revised price cannot be reached, an according decrease of the duration of the remaining MPLS service period may be applied.

ASESORIA LEGAL LEVEL 3 PERÚ S.A. V°B°

Options 2)

Civil works for Chile:

The prices for the below options are valid for 12 months after the date of original Contract coming into force.

In case the below options are exercised, the integration of the antenna by the Contractor into the REDDIG II Network is included.

Alternatively, Chile may choose a third party to provide and install the antenna, according to the agreed implementation schedule. In such case, the Contractor assumes responsibility to integrate the antenna into the REDDIG II Network, at no additional cost. However, it would be the responsibility of Chile to ensure proper installation of the antenna prior to arrival of the Contractor's integration personnel as all 16 nodes will be integrated simultaneously.

Note: Chile will be responsible for the timely and proper installation of the antennas. In case of delayed or improper installation, the Contractor will not be held liable for consequences resulting therefrom.

Option 2a)
Chile: Transfer of existing antenna:

Chile (Santiago)				
Displacement of the current antenna, including:				
Dismantling of the existing antenna				
Reinstallation of the antenna				
New antenna				
Civil work, including				
Construction of the slab with M20 concrete and rebars				
Grounding system of the slab + 5 Ohms				
Trench and manholes from antenna slab location to equipment room with distance not to exceed 50 m				
Crane renting, including:				
Rent of the crane, including diesel fuel				
Transfer of the equipment to the antenna site				
Notes:				
Digital shelters in the new location of the VSAT antenna are not considered and not included in the				
Slab foundation is standard 4 feet with 150 kg/m² construction				
The distance between the new location and the technical room should not exceed 50 meters				
No road or railroad crossing are included				
The uninstall, reinstallation of the antenna will be held during the migration from the existing network to the new one. However, in case of this work takes more time than the prevoided one for the migration time for the whole network, an interruption of the services of the site will be necessary. This case will be studied by INECDAS and ICAO				
TOTAL Chile (Santiago)	set	1		$60,429

Option 2b)
Chile: Provision, transport and installation of a new antenna

	Unit	Qty	Unit Price US$	Total US$
Chile (Santiago)				
Supply, transport and installation of a new antenna	set	1	[illegible]	[illegible]
Supply and installation of a 6.5 m mast	set	1		
New diplexers	set	1		
Transport, RF tuning etc. during the new antenna in the grid	lot	1		
Civil work, including:	lump	1	[illegible]	[illegible]
Construction of the tower foundation and base	set	1		
Erection of system of the mast, 6 m height	set	1		
Power supply modification from generator to the technical room (approximated distance = 70m)	lump	1		
Transfer of the equipment to the new location	lump	1	[illegible]	[illegible]
Notes: Ground works of the new location of the 6.5m antenna are not considered and not included above. Mast location is standard T form with 150 Kg wind consumption. The distance between the new location and the technical room should not exceed 50 meters. No road or airfield crossing are included. The installation of the antenna will be held before or during the migration from the existing network to the new one. However, in case this work takes more time than foreseen for the migration time of the whole network, an interruption of the services of the site will be necessary. This case will be studied by INECO E&S and nCAO.				
TOTAL Chile (Santiago)	set	1		$84,730

"

"**Revised Attachment VI**
Model Provisional Site/Final Network/ Site* Acceptance Test Certificate - Sample

The present certificate is to attest that the Provisional Site /Final Network/Final Site* Acceptance Tests as stipulated in Article 13.0 of Contract _____, signed on _____, between ICAO and _____ has been carried out and proved to be satisfactory, for the following items (or part of items) :

Comments (if any) :

*= mark applicable

_____
REDDIG II PROJECT GROUP
Representative

_____
Date

_____
Contractor Representative

_____"
Date

ASESORIA LEGAL LEVEL 3 PERÚ S.A. V°B°

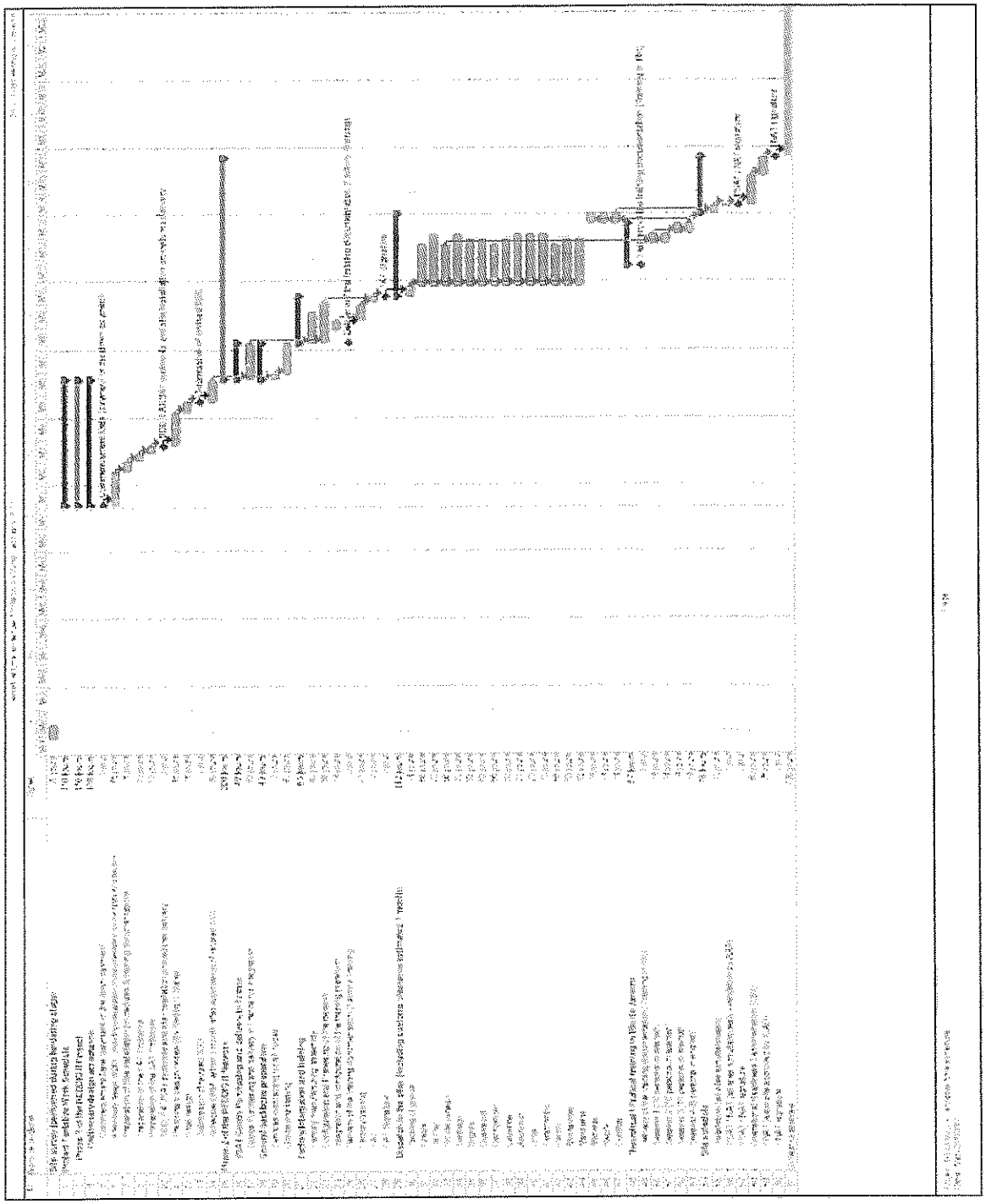
"Revised Attachment IX
Contract Implementation Schedule

Item Nb	Completion Date (weeks)	Activity
Phase I		
1	T0	Contract Commencement Date
2	T0 + 10	SDD
Phase II		
3	T0 +	FAT satellite backbone
4	T0 +	Delivery to the sites (to each REDDIG II Member State)
5	T0 +	Training
6	T0 +	Installation
7	T0 +	PSAT
8	T0 + 66	FNAT
Phase III		
9	T1 +	Signature of Amendment III
10	T1 + 5	SDD
11	T1 +	FAT
12	T1 +	Delivery to Brasilia
13	T1 +	Training
14	T1 +	Installation
15	T1 + 28	SAT

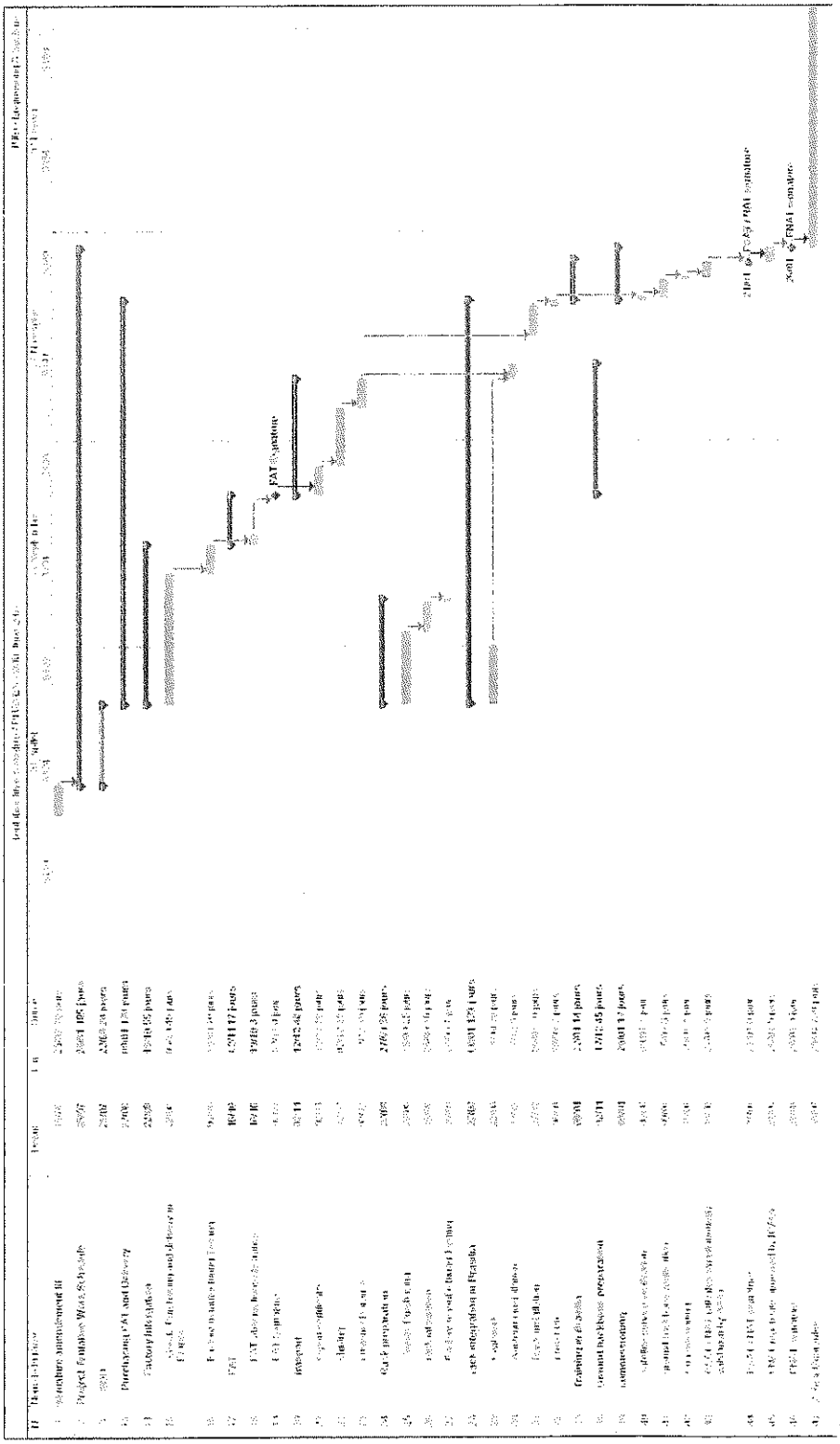
The Contractor's proposed Implementation schedules A and B are attached for information purposes only. As per Article 9.2 and 7.2.4. each of the updated Implementation Schedules is to be submitted with the System Design Documentation and shall include. amongst others. the above milestones.

The Contract completion time frame of fifteen and a half (15.5) months (excluding the Brasilia node) as indicated in Article 9.1 shall remain unchanged. Delivery, installation and commissioning of the Brasilia node shall not exceed seven (7) months from the date of signature of Amendment III.

A. Implementation Schedule (Phase II) *(for information only)*



B. Implementation Schedule for the Brasilia node (Phase III) *(for information only)*



APPENDIX F / APÉNDICE F

COFELY INEO GDF SUEZ

Brasilia Services

TELEPHONY

Service	PLAR number (autodial)	Destination routing number	Translation rule	Local routing number (station id-number)	#of difgits forwarded	Usual dial number	Router name	Slot/port	Type	Cable number	Plug
							SBBR-CISCO-VSAT-1	0/1/0	FXO		
							SBBR-CISCO-VSAT-1	0/1/1	FXO		
							SBBR-CISCO-VSAT-1	0/1/2	FXO		
							SBBR-CISCO-VSAT-1	0/1/3	FXO		
Mant/Adm						*3401*	SBBR-CISCO-VSAT-1	0/2/0	FXS		
						Libre	SBBR-CISCO-VSAT-2	0/2/1	FXS		
Mant/Adm						34XXXX	SBBR-CISCO-VSAT-2	0/0/0	E&M type V		
Mant/Adm						34XXXX	SBBR-CISCO-VSAT-2	0/0/1	E&M type V		
ATS /Swtc						34XX	SBBR-CISCO-VSAT-2	0/1/0	E&M type V		
ATS /Swtc						34XX	SBBR-CISCO-VSAT-2	0/1/1	E&M type V		
ATS /Swtc						34XX	SBBR-CISCO-VSAT-2	0/2/0	E&M type V		
ATS /Swtc						34XX	SBBR-CISCO-VSAT-2	0/2/1	E&M type V		
Service	PLAR number (autodial)	Destination routing number	Translation rule	Local routing number (station id-number)	#of difgits forwarded	Usual dial number	Router name	Slot/port	Type	Cable number	Plug
ATS /Swtc						34XX	SBBR-CISCO-GBB-1	0/1/0	E&M type V		
ATS /Swtc						34XX	SBBR-CISCO-GBB-1	0/1/1	E&M type V		
ATS /Swtc						34XX	SBBR-CISCO-GBB-1	0/2/0	E&M type V		
ATS /Swtc						34XX	SBBR-CISCO-GBB-1	0/2/1	E&M type V		
Mant/Adm						3401	SBBR-CISCO-GBB-2	0/0/0	FXS		
							SBBR-CISCO-GBB-2	0/0/1	FXS		
							SBBR-CISCO-GBB-2	0/1/0	FXO		
							SBBR-CISCO-GBB-2	0/1/1	FXO		

IP address Proposal

Brasilia Number: 34 (to confirm)

Device	Device number	Device Name	NMS device name	LAN IP address	mask	gateway	VRRP
NMS server	10	SBBR-REDDIG-II	NMS server - local	10.100.34.10	255.255.255.0	10.100.34.254	
NMS printer	20	SBBR-IMP-REDDIG-II	impresora	10.100.34.20	255.255.255.0	10.100.34.254	
Skywan	31	SBBR-SKW-A	Skywan-A	10.100.34.31	255.255.255.0	10.100.34.254	
	32	SBBR-SKW-B	Skywan-B	10.100.34.32	255.255.255.0	10.100.34.254	
IBUC	41	SBBR-IBUC-A	IBUC-A	10.100.34.41	255.255.255.0	10.100.34.254	
	42	SBBR-IBUC-B	IBUC-B	10.100.34.42	255.255.255.0	10.100.34.254	
RX 1+1	43	SBBR-RX-1+1	RX 1+1	10.100.34.43	255.255.255.0	10.100.34.254	
Netgear switch	51	SBBR-SWI-A	Switch-A	10.100.34.51	255.255.255.0	10.100.34.254	
	52	SBBR-SWI-B	Switch-B	10.100.34.52	255.255.255.0	10.100.34.254	
netgear pro safe	60	SBBR-VPN	VPN	10.100.34.60	255.255.255.0	10.100.34.254	
RSS	71	SBBR-RSS-1	RSS-1	10.100.34.71	255.255.255.0	10.100.34.254	
	72	SBBR-RSS-2	RSS-2	10.100.34.72	255.255.255.0	10.100.34.254	
GPS	80	SBBR-GPS	GPS	10.100.34.80	255.255.255.0	10.100.34.254	
MPLS access device	90		GBB-ACCESS	10.100.34.90	255.255.255.0	10.100.34.254	
Cisco VSAT	101	SBBR-CISCO-VSAT-1-A	CISCO-VSAT-1-A	10.100.34.101	255.255.255.0	10.100.34.254	10.100.34.254
	102	SBBR-CISCO-VSAT-1-B	CISCO-VSAT-1-B	10.100.34.102	255.255.255.0	10.100.34.254	10.100.34.254
	103	SBBR-CISCO-VSAT-2-A	CISCO-VSAT-2-A	10.100.34.103	255.255.255.0	10.100.34.254	10.100.34.253
	104	SBBR-CISCO-VSAT-2-B	CISCO-VSAT-2-B	10.100.34.104	255.255.255.0	10.100.34.254	10.100.34.253
cisco GBB	121	SBBR-CISCO-GBB-1	CISCO-GBB-1	10.100.34.121	255.255.255.0	10.100.34.254	
	122	SBBR-CISCO-GBB-2	CISCO-GBB-2	10.100.34.122	255.255.255.0	10.100.34.254	
IP to serial	130	SBBR-Serial	Serial	10.100.34.130	255.255.255.0	10.100.34.254	

Service	IP Address	VLAN
AMHS	10.0.88.0 /24	100
RADAR	10.0.89.0 /24	101
AIDC	10.0.90.0 /24	102

Data

SERIAL - AFTN DESTINATION	Router	Port	BSTUN num	Primary /secondary	Cable number	Plug
SOCA	SBBR-CISCO-VSAT-1	0/0/0				
	SBBR-CISCO-VSAT-1	0/0/1				
	SBBR-CISCO-VSAT-1	0/0/2				
	SBBR-CISCO-VSAT-1	0/0/3				
	SBBR-CISCO-VSAT-GBB-1	0/0/0				
	SBBR-CISCO-VSAT-GBB-1	0/0/1				

APPENDIX G / APENDICE G

Amendment IV to Contract 22501200 for the Provision of a New Regional Aeronautical Telecommunication Network (REDDIG II) and associated equipment and services for the REDDIG II Member States.

Contract 22501200 for the Provision of a New Regional Aeronautical Telecommunication Network (REDDIG II) and associated equipment and services for the REDDIG II Member States (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay and Venezuela) is hereby amended to include the possibility of a separate Final Network Acceptance Test (FNAT) for the ground backbone of the Network and to revise the payment terms accordingly.

This Amendment IV shall form part of ICAO Contract 22501200 between the International Civil Aviation Organization (ICAO) acting on behalf of and as mandatary for the REDDIG II Member States, and the Consortium consisting of INEO Engineering and Systems and LEVEL 3 PERÚ S.A. and shall become effective on the date of signature of this document by ICAO, INEO Engineering and Systems and LEVEL 3 PERÙ S.A.

All articles of Contract 22501200 not covered in this Amendment IV or previous Amendments I and III shall remain unchanged and in force.

Article 13.6.1 is added and Articles no. 5.2 is hereby amended and shall become:

"5.2 **Payment Schedule and Invoicing**

5.2.1 All invoices shall be issued to ICAO Finance Branch for payment in accordance with the payment schedule as indicated below:

Ref.	Payment Term for Phase I
1	**US $114,182** representing 40% of the price of Phase I as down payment with acceptable Bank Guarantee (as per invoice 8500006629)
2	**US $171,273** representing 60% of the price of Phase I upon approval of the SDD (as per invoice 8500007772)
Ref.	**Payment Term for Phase II**
3	**US $1,136,477.09** as down payment with acceptable Bank Guarantee (as per invoices 8500007773 and 8500008502)
4	a) **US $1,337,200.54** representing 35% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II); and b) **US $9,694.80** representing 30% of the addition to Phase II, subject of Amendment II (both payments as per invoice ESF1214003) upon the last shipment of equipment and acceptable Bank Guarantee
5	**US $382,057.30** representing 10% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II) (as per invoice ESF0914004), upon completion of theoretical-practical training
6	a) **US $573,085.95** representing 15% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II) (as per invoice ESF0315001); and

	b) **US $118,050** representing 50% of Table 1 of Attachment II upon satisfactory Provisional Site Acceptance Test (PSAT)
7	**US $382,057.30** representing 10% of the price of Phase II, excluding the leasing of ground communication services (Table 1 of Attachment II), upon satisfactory Final Network Acceptance Test (FNAT) and Acceptable Performance Bond
8	**US $118,050** representing 50% of Table 1 of Attachment II three months after satisfactory Final Network Acceptance Test (FNAT); **or,** if Article 13.6.1 applies, upon satisfactory FNAT of the ground backbone of the Network.
Ref.	**Payment Term for Phase III**
9	**US $134,467.72** representing 40% of the price of Phase III (excluding US $500 for installation of equipment for ground communication services), as down payment with acceptable Bank Guarantee
10	**a) US $201,701.59** representing 60% of the price of Phase III (excluding US $500 for installation of equipment for ground communication services), and **b) US $500** for installation of equipment for ground communication services upon satisfactory Site Acceptance Test (SAT)

5.2.2 Correct invoices shall be accepted by ICAO for the above payments provided they are accompanied or preceded by the documents as set forth in Articles 5.2.2.1 to 5.2.2.10, using the table references as indicated under Article 5.2.1.

5.2.2.1 **Down Payment on placement of order for Phase I against invoice 8500006629 and submission of an acceptable Bank Guarantee:**
The Contractor shall submit:
i. One (1) original invoice 8500006629 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 1;
ii. Acceptable Bank Guarantee, as per Article 6.1.

5.2.2.2 **Progress Payment against invoice 8500007772 upon approval of the System Design Document (SDD)**:
The Contractor shall submit:
i. One (1) original invoice 8500007772 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 2;
ii. Written confirmation of approval of the SDD from the REDDIG II PROJECT GROUP.

5.2.2.3 **Down Payment on placement of order for Phase II against invoices 8500007773 and 8500008502 and submission of an acceptable Bank Guarantee**
The Contractor shall submit:
i. One (1) original invoice 8500007773 and 8500008502 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 3;
ii. Acceptable Bank Guarantee, as per Article 6.2.

5.2.2.4 **Progress Payment at the last shipment of equipment against invoice ESF1214003 and submission of an acceptable Bank Guarantee:**
The Contractor shall submit:
i. One (1) original invoice ESF1214003 plus one (1) copy covering the cumulative amount as per Article 5.2.1, Ref. 4a and 4b);
ii. One (1) original Factory Acceptance Certificate duly signed as per Article 11.7;
iii. Acceptable Bank Guarantee, as per Article 6.3.
iv. Shipping documents and insurance certificate as per Article 9.9.

ACCOUNT MANAGER LEVEL 3 PERÚ S.A. V°B° J.N.V.

A & A LEVEL 3 PERÚ S.A. V°B° J.O.C.U.

5.2.2.5 **Progress Payment at satisfactory completion of theoretical-practical training against invoice ESF0914004:**

i. One (1) original invoice ESF0914004 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 5;

ii. Written confirmation of satisfactory completion of theoretical-practical training from the REDDIG II PROJECT GROUP;

5.2.2.6 **Progress Payment at satisfactory Provisional Site Acceptance against invoice ESF0315001:**

The Contractor shall submit:

i. One (1) original invoice ESF0315001 plus one (1) copy covering the amount as per Article 5.2.1, Ref. 6a);

ii. Sixteen (16) original Provisional Site Acceptance Certificates (one from each site) duly signed as per Article 13.1.

Level 3 shall submit:

iii. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 6b;

iv. A copy of the sixteen (16) Provisional Site Acceptance Certificates (one from each site) duly signed as per Article 13.1.

5.2.2.7 **Progress Payment at satisfactory Final Network Acceptance:**

The Contractor shall submit:

i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 7;

ii. One (1) original Final Network Acceptance Certificate duly signed as per Article 13.6;

iii. Acceptable Performance Bond as per Article 6.5.

5.2.2.8 **Progress Payment three (3) months after satisfactory Final Network Acceptance or, if Article 13.6.1 applies, upon Final Network Acceptance of the ground backbone of the Network:**

Level 3 shall submit:

i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 8;

ii. One (1) original Certificate of satisfactory provision of the ground communication services (Attachment X) duly signed by REDDIG II PROJECT GROUP.

iii. If Article 13.6.1 applies, one (1) original Final Network Acceptance Certificate for the ground backbone of the Network.

5.2.2.9 **Down Payment on signature of Amendment III for Phase III and submission of an acceptable Bank Guarantee:**

The Contractor shall submit:

i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 9;

ii. Acceptable Bank Guarantee, as per Article 6.3.

5.2.2.10 **Progress Payment at satisfactory Site Acceptance of the Brasilia node**:

The Contractor shall submit:

i. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 10a);

ii. One (1) original Site Acceptance Certificate duly signed as per Article 13.13;

iii. Acceptable Performance Bond as per Article 6.5;

The Contractor or Level 3 shall submit:

iv. One (1) original invoice plus one (1) copy covering the amount as per Article 5.2.1, Ref. 10b);
v. One (1) original Site Acceptance Certificate duly signed as per Article 13.13."

5.2.3 Payments shall be effected by bank transfer to the Contractor's account (Level 3's account for payment reference 6 b) and 8), indicated on the invoices within thirty (30) days after receipt of correct invoice and documentation as outlined in Article 5.2.2. The bank charges for such transfers shall be borne by the Contractor and/or Level 3."

"13.6.1 If, for reasons not attributable to Level 3, the FNAT does not take place within six (6) months of the date of the last PSAT, and the REDDIG II Member States confirm satisfactory receipt of the MPLS Services for at least six (6) months for all sites since the last PSAT, a separate FNAT certificate solely for the ground backbone of the Network shall be signed. In such case, Level 3 shall be entitled to invoice the amount as per Article 5.2.1, Ref. 8, and the initial six (6)-month leasing of related ground communication services as per Article 2.3 shall be deemed to have been provided since the date of the last PSAT. Subsequently, Level 3 shall undertake to accept a Purchase Order for the leasing of MPLS Services as per Article 5.1.6."

Attachment X is hereby revised to reflect satisfactory provision of ground communication services after the last Provisional Site Acceptance Test.

Signed on 14 JANUARY 2016, on behalf of:
Date

ICAO
Technical Cooperation Bureau

Jacques-Olivier KLOTZ
Aeronautical Export Department Director
INEO Engineering and Systems

LEVEL 3 PERÚ S.A.

Luis Ladera Zambrano
REPRESENTANTE LEGAL
LEVEL 3 PERÚ S.A.

OSWALDO CLAROS UGALDE
REPRESENTANTE LEGAL
LEVEL 3 PERÚ S.A.

LEVEL 3 PERÚ S.A. V°B° O.C.U.

ACCOUNT MANAGER LEVEL 3 PERÚ S.A. V°B° J.N.V.

Revised Attachment X
Model Satisfactory Provision of Ground Communication Services Certificate - Sample

The present certificate is to attest that the Ground Communication Services as stipulated in Article 2.3 of Contract _____, signed on _____, between ICAO and _____ have been provided for a period of three (3) months after FNAT*/ six (6) months after the last PSAT* and proved to be satisfactory.

Comments (if any) :

* Mark applicable

_____
REDDIG II PROJECT GROUP Representative

_____
Date

_____
Contractor Representative

_____
Date

A & A LEVEL 3 PERÚ S.A. V°B° O.C.U.

ACCOUNT MANAGER LEVEL 3 PERÚ S.A. V°B° J.N.N.

FINAL NETWORK ACCEPTANCE TEST CERTIFICATE

Reference: International Civil Aviation Organization (ICAO)
Contract: 22501200
REDDIG II Network
RLA/03/901 -- REDDIG II Project Group

We hereby acknowledge that the REDDIG II ground backbone network *and associated equipment and services have been verified in accordance with mutually agreed upon test procedures with satisfactory result*

On behalf of INEO Engineering and Systems / Level 3

Ineo Engineering & Systems
Inovel Parc Sud
23, rue du Général Valérie André
78140 Vélizy Villacoublay - France
Tél. 33 (0)1 39 26 15 00 - Fax 33 (0)1 30 70 17 20

Thierry Su
01/07/2015

Authorized Representative (BLOCK LETTERS)

Signature and Date
GIANNI HANAWA MAKABE
REPRESENTANTE LEGAL
LEVEL 3 PERÚ S.A.

OSWALDO CLAROS UGALDE
REPRESENTANTE LEGAL
LEVEL 3 PERÚ S.A.

On behalf of the REDDIG II Project Group

Onofrio Smarrelli
Authorized Representative (BLOCK LETTERS)

15 / 7 / 2015
Signature and Date

ASESORIA LEGAL LEVEL 3 PERÚ V°B°

APPENDIX H / APÉNDICE H

MEMORANDUM OF UNDERSTANDING BETWEEN STATES/TERRITORIES/INTERNATIONAL ORGANISATIONS MEMBERS OF MEVA III AND REDDIG II PROJECT ORGANISATION

1. SECTION 1. INTRODUCTION AND PURPOSE OF THIS DOCUMENT

1.1 INTRODUCTION

1.1.1 With the aim of effectively and efficiently fulfilling aeronautical telecommunications requirements in these regions, the members of the MEVA II and REDDIG VSAT networks decided to interconnect the two networks. For this purpose, the Members agreed to establish this Memorandum of Understanding (MoU). This Agreement is being established jointly under coordination of the ICAO North American, Central American, and Caribbean (NACC) Office in Mexico City, Mexico and the ICAO South American (SAM) Office, in Lima, Peru.

1.1.2 The Third MEVA II / REDDIG Coordination Meeting (MR/3) concluded that the interconnection implementation will operate for a five-year period, as an initial basis, after finalising the implementation.

1.1.3 The First MEVA III / REDDIG II Coordination Meeting concluded that the interconnection implementation will be renewed for five initial year period, after finalizing the implementation.

1.1.4 The main body of this document consists of four (4) sections and 2 Appendices. The content of the sections and appendices is summarised below: In accordance with the interconnection development, when considered necessary, and if the interested Parties of both networks agree to do so, other Appendices could be added as necessary.

Section 1.0: Presents a brief overview and statement of purpose.

Section 2.0: Provides an explanation of the Technical Cooperative Agreement process.

Section 3.0: Describes the technical terms of reference.

Section 4.0: Describes the financial responsibilities of the parties to this agreement.

Appendix A: A list of reference documents used in support of this Agreement.

Appendix B: Technical-operational coordination agreement for the establishment of VSAT MEVA III and REDDIG II networks interconnection

1.1.5 This document is based on the former MEVA II - REDDIG Memorandum of Understanding (MoU).

1.2 SECTION 1 – PURPOSE

1.2.1 The goal of this MoU is to foster a coordinated plan for in the development of MEVA III and REDDIG II networks and its interconnection implementation.

1.2.2 This MoU is a living document through which members of the MEVA III and REDDIG II networks shall convene, as necessary and at locations agreed upon, to review or amend the details of the Agreement. Revised versions of this Agreement, or paragraph changes, shall be coordinated and distributed by the ICAO NACC and SAM Regional Offices to the signatory parties of the Agreement as appropriate.

1.2.3 This MoU document establishes the following coordination and cooperation process:

a) The holding of coordination meetings, if required, to analyse and identify the new service requirements for the MEVA III and REDDIG II VSAT networks interconnection.

b) The exchange of technical reports and documentation, program plans and schedules, as may become necessary, to assure the successful and timely completion of these efforts.

c) Operational-technical coordination between the Parties involved in MEVA III and REDDIG II networks, as necessary.

d) Planning, technical coordination, and development participating member States/Territories/International Organisations of the MEVA III and REDDIG II Networks.

2. SECTION 2 – THE TECHNICAL COOPERATIVE AGREEMENT PROCESS

2.1 To reach the goal of this MoU, the MEVA III and REDDIG II members have developed an interconnection solution to operate during a five-year phase after the implementation of the interconnection of the MEVA III and REDDIG II Networks.

2.2 RELATIONSHIPS AND RESPONSIBILITIES OF THE PARTIES

2.2.1 In order to achieve the interconnection of the networks in a timely and mutually beneficial way, the parties to this Agreement recognise the need to coordinate their actions and exchange updated operational-technical information.

2.2.2 The Parties also recognise the need to develop common technical solutions for interconnecting and/or integrating these networks, in a manner that shall not negatively impact the planned operation, performance, or management of the either network.

2.2.3 ICAO NACC and SAM Regional Offices shall convene coordination meetings, as needed.

2.2.4 The Parties of this MoU agree to exchange reports, technical documents, plans and programming that may be necessary in order to guarantee the interconnection and the implementation of the new services.

2.2.5 The Parties of this MoU agree to implement during a 5 year phase the MEVA III / REDDIG II interconnection solution as presented in Appendix B.

3. SECTION 3 – TECHNICAL TERMS OF REFERENCE

3.1 The interconnection solution's objectives and their technical operational principles are described under the Appendix B of this document.

4. SECTION 4 – FINANCIAL RESPONSIBILITIES OF THE NETWORK PARTIES

4.1 MEVA III / REDDIG II Members shall, as individual administrations, be responsible for their own financial obligations, in accordance with the Agreement contained in Appendix B.

4.2 The Parties to this Agreement understand that they shall not commit to any action that may result in a financial obligation to other Parties, without first obtaining an Agreement, in writing, from all other parties to this Agreement.

NOTES:

MEVA III - The term "MEVA III", as used in this document, refers to the VSAT network currently providing voice and data aeronautical telecommunications services to States/Territories/International Organisations in the Caribbean Region. The network is managed by Caribbean States/Territories/International Organisations members, through the Technical MEVA Group (TMG), and is coordinated by the ICAO NACC Regional Office.
REDDIG II - The term "REDDIG II", as used in this document, refers to the VSAT network presently implemented in the South American region under the technical cooperation project RLA/03/901 coordinated by the ICAO Lima Office.

APPENDIX A

A LIST OF REFERENCE DOCUMENTS USED IN SUPPORT OF THIS AGREEMENT

- Contract N| 2250128 between the International Civil Aviation Organization and COMSOFT GmbH for the provision of the Interconnection of the MEVA III and REDDIG II Satellite Telecommunications Network for MEVAIII and REDDIG II Member States/Territory/International Organization
- Acuerdo de gestión de servicios entre la Cooperación Centroamericana de Servicios de Navegación Aérea (COCESNA) y la OACI Proyecto RLA/09/901 Interconexión del Nodo MEVAII de COCESNA a la REDDIG
- Contract No. 22501200 between the International Civil Aviation Organization and the consortium consisting of INEO Engineering and Systems and LEVEL 3 PERÚ S.A. for the Provision of a New Regional Aeronautical Telecommunication Network (REDDIG II)and associated equipment and services
- Manual de operación de la REDDIG II
- MEVA III Document of Agreement
- MEVA III Service Level Agreement

APPENDIX B

TECHNICAL-OPERATIONAL COORDINATION AGREEMENT FOR THE ESTABLISHMENT OF VSAT MEVA III AND REDDIG II NETWORKS INTERCONNECTION

1. SECTION 1 – PURPOSE OF THIS AGREEMENT

1.1 PURPOSE

1.1.1 To establish technical, operational and administrative aspects necessary for the digital VSAT MEVA III and REDDIG II networks interconnection, to meet aeronautical telecommunications requirements between the CAR/SAM Regions.

2. SECTION 2 – CO-OPERATIONAL TECHNICAL PROCESS OF THE AGREEMENT

2.1 RELATIONSHIP AND RESPONSIBILITIES OF THE PARTIES

2.1.1 During this stage, the management of MEVA III and REDDIG II shall continue with their respective service providers, i.e, REDDIG II shall continue with its REDDIG Administration, and MEVA III, with the MEVA III Service Provider.

2.1.2 States/Territories/International Organisations members of MEVA III and REDDIG II networks shall be responsible for the normal operation of each of their nodes, having to establish mechanisms necessary to ensure the degree of availability required for each of the services under consideration.

3. SECTION 3 – TECHNICAL TERMS OF REFERENCE

3.1 TECHNICAL TERMS OF REFERENCE

3.1.1 Members of MEVA III and REDDIG II networks have mutual interest in establishing the interconnection of their respective communications networks in a manner that they provide the capacity for current and future voice and data aeronautical telecommunications services between the designated nodes within these networks, so as to support aeronautical telecommunications in the CAR/SAM Regions.

3.1.2 The interconnection technical solution shall be carried out under premise that the REDDIG II and MEVA III VSAT network is developed under a full mesh network topology, using TDMA satellite access, as well as a IS-14 satellite transponder with a beam directed over United states / Latin America, C-band operation frequencies and co-linear vertical polarisation.

3.1.3 For the interconnection of the additional equipment to be initially installed at each node involved, MODEM, as well as any other necessary equipment required.

3.1.4 The interconnection implies the following implementations:

a) Additional equipment at Bogota (Colombia) and Caracas (Venezuela), REDDIG II nodes; and

b) Additional equipment at Tegucigalpa, Honduras, COCESNA MEVA III node.

3.2 MANAGEMENT TERMS OF REFERENCE

3.2.1 Implementation of the interconnection option shall not involve modifications to the technical, operational and control management of MEVA III and REDDIG II networks, with exception of the necessary maintenance coordination procedures detailed in paragraph 3.2.5 of this Attachment.

3.2.2 The configuration, synchronisation, supervision and control of additional MODEMs participating in the interconnection and installed at REDDIG II nodes, shall be carried out by the MEVA III Network Control Centre (NCC). Also, the configuration, synchronisation, supervision and control of additional MODEMs participating in the interconnection and installed at MEVA III nodes, shall be carried out by the REDDIG NCC.

3.2.3 The bandwidth, number and type of circuits installed in the MEVA III node for communications with REDDIG II, shall be managed by REDDIG II.

3.2.4 The bandwidth, number and type of circuits installed in the REDDIG II node for communications with MEVA III, shall be managed by MEVA III.

3.2.5 Maintenance coordination procedures between the NCCs

3.2.5.1 When there is any problem in a REDDIG II node, with the MODEM or other equipment involved in the interconnection with MEVA III, the following shall be applied:

a) MEVA III Service Provider shall call the REDDIG II Administration informing of the happening;

b) The REDDIG II Administration shall phone the respective node and shall establish an audio teleconference between MEVA III Service Provider and Caracas or Bogota local technicians, as necessary;

c) REDDIG II NCC, under control of the REDDIG II Administration, shall supervise communications between MEVA III Service Provider and REDDIG II nodes technicians.

d) The MEVA III Service Provider is the only one that may call the REDDIG II Administration to start or close the respective trouble ticket.

3.2.5.2 When there is any problem in a MEVA III node, with the MODEM or other equipment affect the interconnection with REDDIG, the following shall be applied:

a) The REDDIG II Administration shall call the MEVA III Service Provider informing of the happening;

b) The MEVA III Service Provider shall call the respective node and shall establish an audio conference between REDDIG II Administration and local technicians, as necessary;

c) MEVA III NCC, under control of the Service Provider, shall supervise communications between REDDIG II Administration and MEVA III nodes technicians.

d) The REDDIG II Administration is the only one that may call the MEVA III Service Provider to start or close the respective trouble ticket.

3.2.6 **Security requirements**

3.2.6.1 The minimum security arrangements required by REDDIG II, and that should be followed by the MEVA III, are:

a) MEVA III network have no direct communications with public networks.

b) The equipment is not shared with services different to MEVA III.

c) Access restriction to equipment belonging to the network, through the use of a password.

d) The network must exclusively support services to which it was originally constituted for.

3.2.6.2 The minimum security arrangements required by MEVA III, and that shall be followed by REDDIG II, are:

a) REDDIG II network have no direct communications with public networks.

b) The equipment is not shared with services different to REDDIG II.

c) Access restriction to equipment belonging to the network, through the use of a password.

d) The network must exclusively support services to which it was originally constituted for.

4. SECTION 4 – FINANCIAL RESPONSIBILITIES OF THE PARTIES

4.1 EQUIPMENT PURCHASING

4.1.1 Additional equipment to be installed at REDDIG II nodes, with MEVA III MODEMs requirements, can be included in the leased contract established between ICAO, in behalf of the REDDIG II members, and the MEVA III Service Provider in accordance with the requirements established for the interconnection.

4.1.2 Additional equipment to be installed at MEVA III nodes, with REDDIG II MODEMs requirements, can be purchased by MEVA III members (States, Territories, Organisations) in accordance with the requirements established for the interconnection.

4.2 SPARE PARTS LOT PURCHASING

4.2.1 The spare parts for the additional equipment to be installed at the REDDIG II nodes, with MEVA III MODEM and other device requirements, can be included in the leasing contract established between ICAO, on behalf of the REDDIG II States, and the MEVA III Service Provider.

4.2.2 The spare parts for the additional equipment to be installed at the MEVA III nodes, with REDDIG II MODEM and other device requirements, shall be purchased by MEVA III Members.

4.3 MAINTENANCE

4.3.1 The additional equipment that would be installed in the REDDIG II nodes and that would route communications requirements with MEVA III nodes, shall be maintained by the MEVA III Service Provider, under the coordination of the REDDIG II Administration.

4.3.2 The additional equipment that would be installed in the MEVA III node, with communications requirements with REDDIG II nodes, shall be maintained by MEVA III Member, in coordination with the REDDIG II and the MEVA III Service Provider.

4.4 **SPACE SEGMENT**

4.4.1 The carriers, as well as the band width requirement for communications between REDDIG II nodes shall be the same as those currently rented with INTELSAT. The payment of the space segment to INTELSAT shall continue being carried out through the REDDIG II Administration, who shall be in charge of collecting contributions from each SAM State member of REDDIG II.

4.4.2 The carriers, as well as the band width requirement for communications between MEVA III nodes shall be done through the MEVA III Service Provider. MEVA III members shall pay the bandwidth consumption to the MEVA III Service Provider.

4.4.3 The circuits necessary for communications between a REDDIG II node having MODEMs participating in the interconnection with MEVA III shall be administrated by the MEVA III Service Provider. The amount charged for circuits used by the REDDIG II Member of the aforementioned node mentioned shall be provided by the MEVA III Service Provider, and the respective consumption payment to the provider shall be made through REDDIG II Administration.

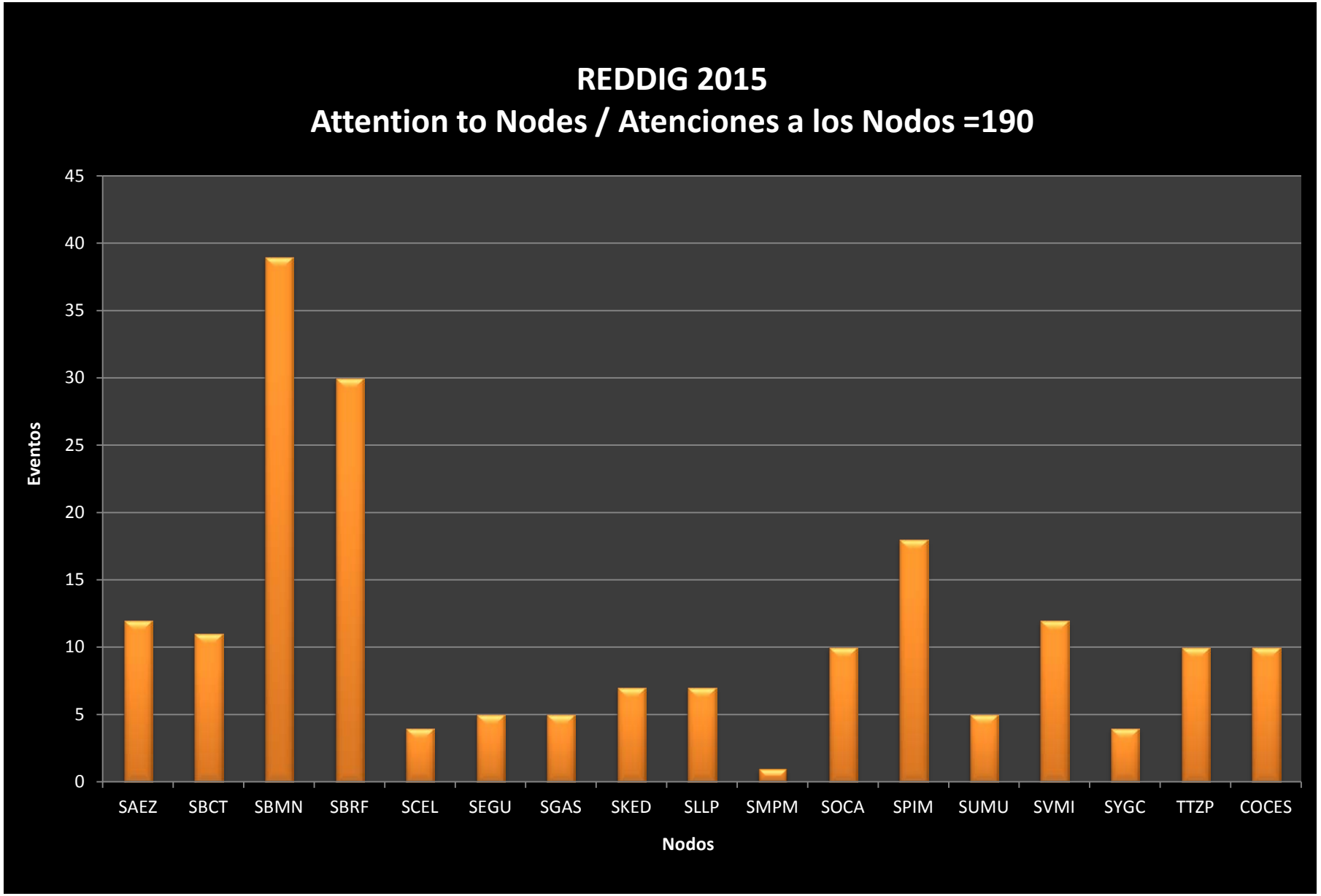
4.4.4 The circuits necessary for communications between a MEVA III node having MODEMs participating in the interconnection with REDDIG II shall be administrated by REDDIG II. The amount charged for circuits used by the mentioned node shall be provided by the REDDIG Administration, and the respective consumption payment shall be made by the MEVA II member of the aforementioned node to the REDDIG II Administration.

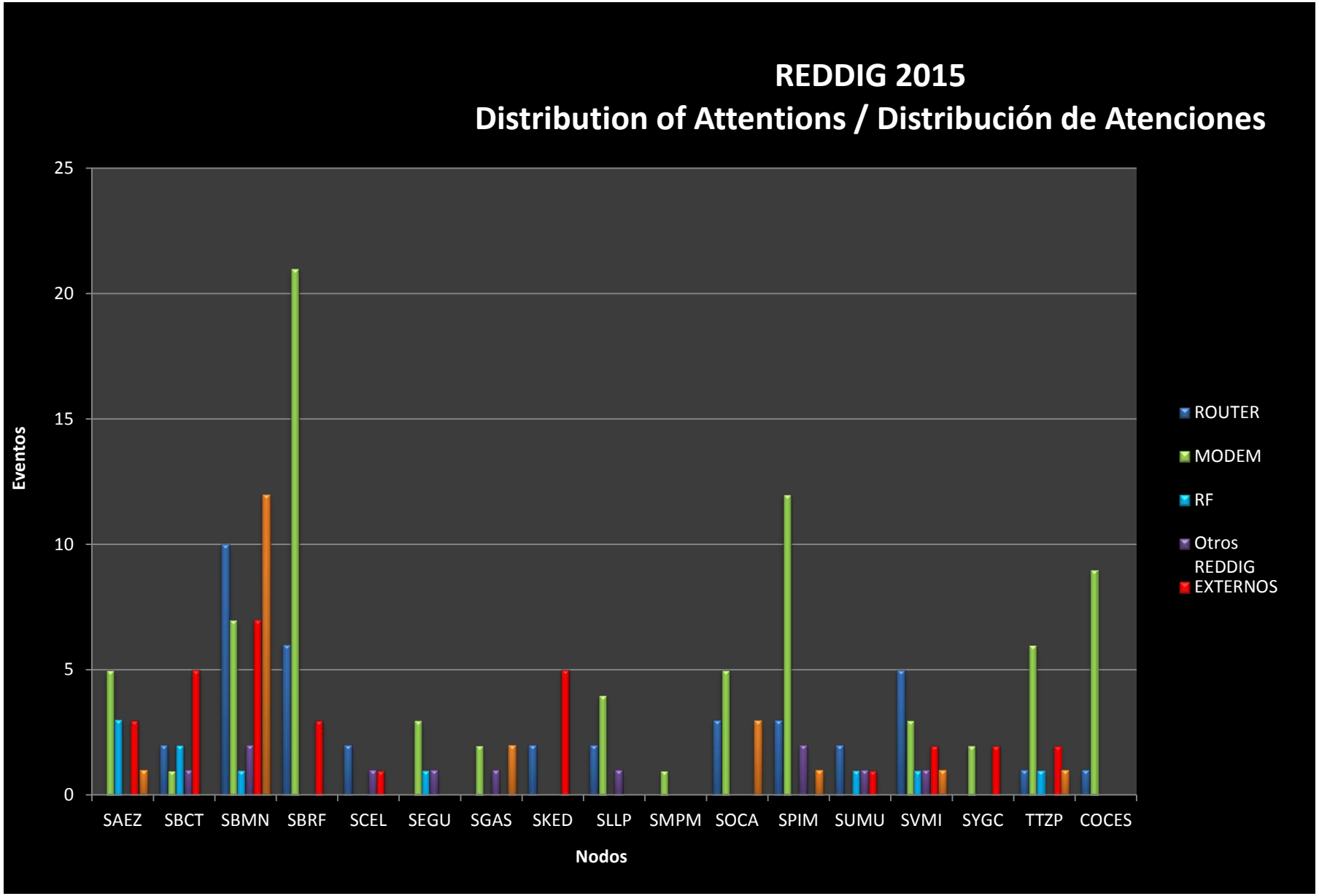
APPENDIX I / APÉNDICE I

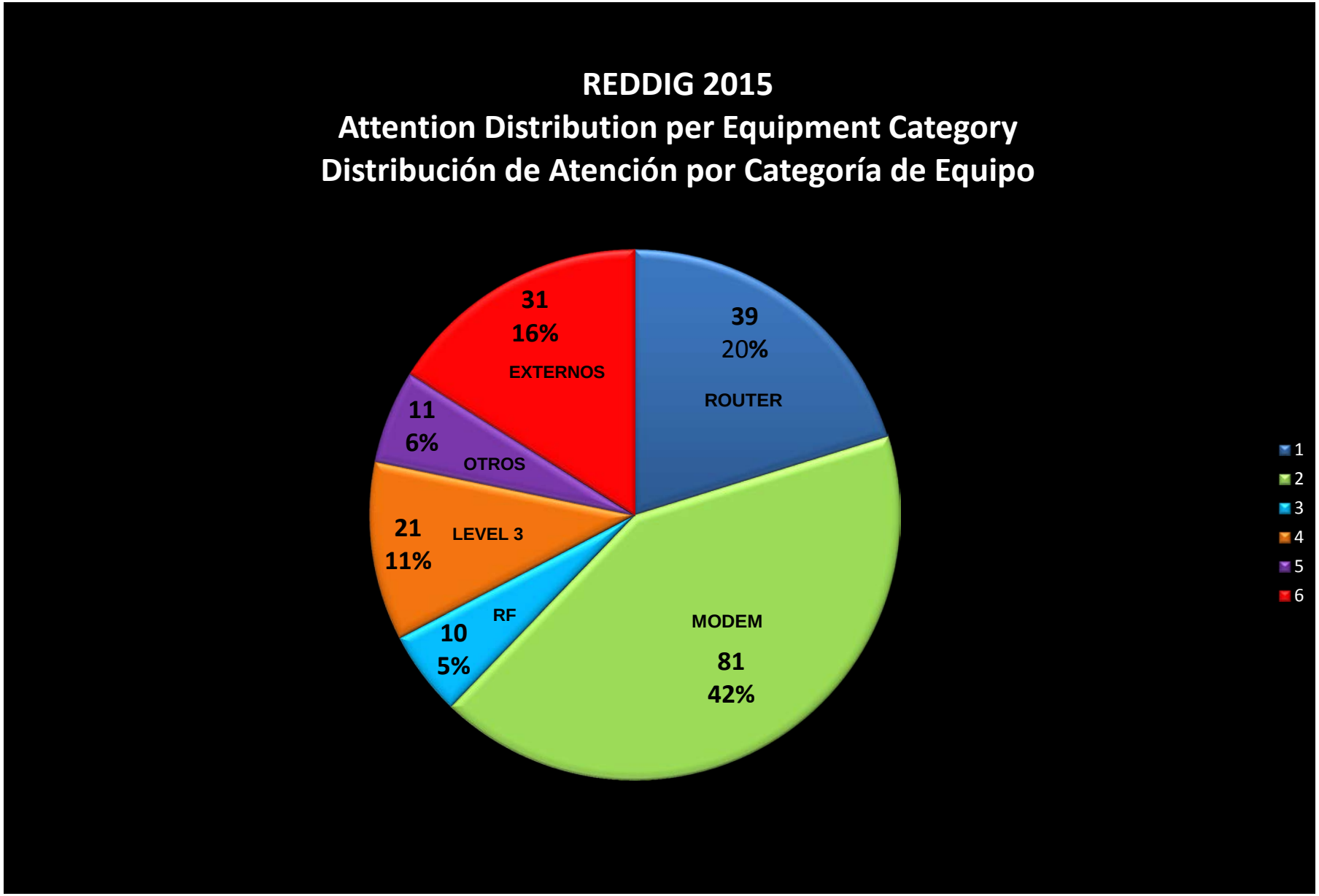
SUMMARY OF FAILURES AND PARTS - 2015
RESUMEN DE AVERÍAS Y PARTES - 2015

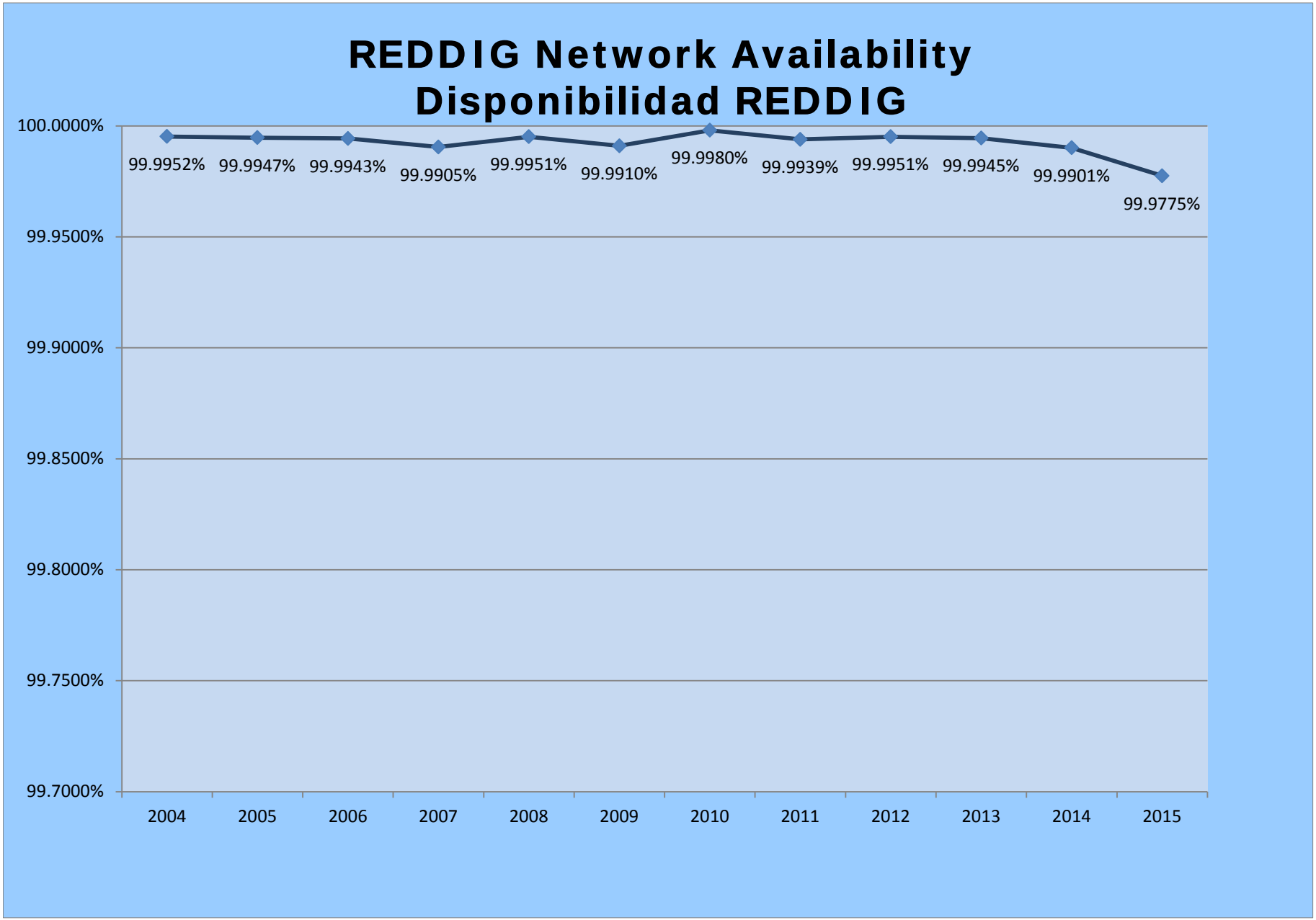
MODEM		Fábrica:	ND Satcom
	(1)	Skywan 1070	: COCESNA
	(1)	Skywan 1070	: SPIM
RF		Fábrica:	TERRASAT Communications, Inc.
	(1)	RX Waveguide Switch	: SBCT
	(1)	IBUC 80W	: SVMI
Otros REDDIG		Fábrica:	Gorgy Timing
	(1)	GPS RTCP09	: SCEL

Nota: Todos estos equipos fueron reemplazados bajo garantía


REDDIG 2015
Attention to Nodes / Atenciones a los Nodos =190
Eventos
45
40
35
30
25
20
15
10
5
0
SAEZ
SBCT
SBMN
SBRF
SCEL
SEGU
SGAS
SKED
SLLP
SMPM
SOCA
SPIM
SUMU
SVMI
SYGC
TTZP
COCES
Nodos


REDDIG 2015
Distribution of Attentions / Distribución de Atenciones
Eventos
25
20
15
10
5
0
SAEZ
SBCT
SBMN
SBRF
SCEL
SEGU
SGAS
SKED
SLLP
SMPM
SOCA
SPIM
SUMU
SVMI
SYGC
TTZP
COCES
Nodos
ROUTER
MODEM
RF
Otros REDDIG
EXTERNOS


REDDIG 2015
Attention Distribution per Equipment Category
Distribución de Atención por Categoría de Equipo
39
20%
ROUTER
81
42%
MODEM
10
5%
RF
21
11%
LEVEL 3
11
6%
OTROS
31
16%
EXTERNOS
1
2
3
4
5
6


REDDIG Network Availability
Disponibilidad REDDIG
100.0000%
99.9500%
99.9000%
99.8500%
99.8000%
99.7500%
99.7000%
99.9952%
99.9947%
99.9943%
99.9905%
99.9951%
99.9910%
99.9980%
99.9939%
99.9951%
99.9945%
99.9901%
99.9775%
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015