INTERNATIONAL CIVIL AVIATION ORGANIZATION

RLA/03/901

EIGHTEENTH MEETING OF THE COORDINATION COMMITTEE (RCC/18)

FINAL REPORT

(Lima, Peru, 2 to 4 March 2015)

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HISTORY OF THE MEETING

ii-1. PLACE AND DURATION OF THE MEETING

The Eighteenth Meeting of the Coordination Committee of Project RLA/03/901 -- *REDDIG Management System and Satellite Segment Administration*, was carried out in the ICAO South American Regional Office, in Lima, Peru, from 2 to 4 March 2015.

ii-2. OPENING

Mr. Franklin Hoyer, Regional Director of the ICAO South American Regional Office, welcomed the participants, pointing out the importance of the topics to be dealt with and wishing success in the deliberations. Thereafter, he inaugurated the meeting.

ii-3. WORKING LANGUAGES

The meeting working languages for the discussions and documentation were Spanish and English.

ii-4. PARTICIPANTS AND ORGANIZATION

The meeting counted with the assistance of 9 member States (Argentina, Brazil, Chile, Ecuador, Guyana, Paraguay, Peru, Trinidad & Tobago, and Uruguay), and one international organization (SITA), making a total of 22 participants, including ICAO officers. The list of participants is being presented in page iii-1.

Mr. Onofrio Smarrelli, Communications, Navigation and Surveillance (CNS) Regional Officer, acted as Secretary, assisted by Ms. Verónica Chávez, Technical Assistant Officer.

ii-5. LIST OF CONCLUSIONS

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Agenda Item 1: Approval of the agenda and of the meeting schedule

1.1 Under this Agenda Item, the Meeting reviewed and approved the agenda and meeting schedule included as **Appendices A and B** to this part of the Report.

APPENDIX A

AGENDA

Agenda Item 1: Approval of the agenda and of the meeting schedule

Agenda Item 2: Review of the report of the Seventeenth Meeting of the Coordination Committee

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

Agenda Item 4: Work plan for 2015

Agenda Item 5: Financial situation of the project and approval of the budget

Agenda Item 6: Annual project evaluation

Agenda Item 7: Other matters

EXPLANATORY NOTES

Agenda Item 1: **Approval of the agenda and of the meeting schedule**

The Coordination Committee will consider and approve the provisional agenda and meeting schedule proposed by the Secretariat for its eighteenth meeting.

Agenda Item 2: Review of the report of the Seventeenth Meeting of the Coordination Committee

The Committee will review, for approval, the report of its seventeenth meeting (RCC/17) held in Lima, Peru, from 24 to 26 de March 2014. Likewise, the Committee will analyze the status of implementation of conclusions formulated during said meeting, as well as of conclusions in force from previous meetings

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

The Committee will analyze the activities carried out since its last meeting regarding:

a) Training programme for year 2014;
b) Implementation of new services;
c) REDDIG logistics aspects; and
d) Follow-up to REDDIG II implementation.

Agenda Item 4: **Work plan for 2015**

El Comité analizará el programa de trabajo previsto para el año 2015:

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

In this item of the agenda, the Committee will analyze the implementation of SITA data link service through the REDDIG II as a follow-up to the SAM/IG/14-4formulated in the SAM/IG/14 Meeting held in Lima, Peru from 10 to 14 November 2014.

Agenda Item 5: **Financial situation of the project and approval of the budget**

The Committee will consider the status of the cost-sharing contributions to the project and a summary of the obligations assumed during 2014, as well as the project budget for 2015 for approval. In addition, it will analyze for approval the costs involved for MEVA / REDDIG interconnection, as consequence of the implementation of the new MEVA network (MEVA III).

Agenda Item 6: **Annual project evaluation**

The Committee will take note of the project's situation at the end of the year, including the management and outputs indicators, as well as the monitoring and control of the project with regard to the approved work plan for 2014, shown in the corresponding forms, concluding with the review of the survey conducted among participant States concerning their annual project evaluation.

Agenda Item 7: **Other matters**

Under this agenda item, the Committee could analyze any other related issue deemed appropriate.

APPENDIX B

Eighteenth Meeting of the REDDIG Coordination Committee (RCC/18)
(Lima, Peru, 2 - 4 March 2015)

PROVISIONAL TIMETABLE

HOUR	**Monday** 2 March 2015	**HOUR**	**Tuesday** 3 March 2015	**HOUR**	**Wednesday** 4 March 2015
08:30 09:00	Registration	09:00 10:30	Review of Agenda Item 4 Teleconference with INEO **(RCC/18)**	09:00 10:30	Review of report (**RCC/18)**
09:00 09:15	Opening				
09:15 09:30	***Coffee break***	10:30 10:45	***Coffee break***	10:30 10:45	***Coffee break***
09:30 12:30	Review of Agenda Items 1 and 2 **(RCC/18)**	10:45 12:15	Review of Agenda Item 5 **(RCC/18)**	10:45 12:15	
12:30 13:30	***Lunch break***	12:15 13:00	***Lunch break***	12:15 13:00	
13:30 15:00	Review of Agenda Item 3 **(RCC/18)**	13:00 14:00	Review of Agenda Item 6 and Item 7 **(RCC/18)**	13:00 14:00	

Agenda Item 2: Review of the report of the Seventeenth Meeting of the Coordination Committee

2.1 Under this Agenda Item, the Meeting discussed and approved the report of the Seventeenth Coordination Committee Meeting of the REDDIG (RCC/17) that was held in Lima, Peru, from 24 to 26 March 2014 and was attended by participants from 10 member States (Argentina, Brazil, Chile, Colombia, Ecuador, France, Paraguay, Peru, Trinidad and Tobago and Uruguay) and an international agency (COCESNA) with a total of 26 participants included specialists from ICAO.

2.2 the RCC/17 Meeting reviewed the report of the Sixteenth Coordination Committee of the REDDIG (RCC/16), the presentation of the activities carried out from the RCC/16 to the RCC/17, the work plan for year 2014, the financial situation of the project and the approval of the budget for year 2014, the annual project evaluation from the RCC/16 to the RCC/17 and other matters.

2.3 During the RCC/17 the following conclusions were formulated:

RCC/17/1	*New MEVA III / REDDIG II interconnection*
RCC/17/2	*Approval of the Project RLA/03/901 budget Revision "S"*
RCC/17/3	*Updating of customs clearance paperwork*

2.4 The Meeting examined the valid of conclusions presented in WP/2 and in this respect considered that the conclusions 8/8, 15/1, 15/4, 16/1, 16/2 and 16/3 were valid and conclusions 14/1, 16/5, 16/7, 17/1, 17/2 and 17/3 were completed. **Appendix** to this agenda item presents the status of the conclusions as a result of the Meeting review.

2.5 Regarding Conclusion 14/1the Meeting was informed that the Guajaramirim (Brazil) and Guayaramirín (Bolivia) circuit will be implemented by a radio communication link point to point to be provided by the Civil Aviation Administration of Brazil in both sides of the link, and therefore the circuit via REDDIG will not be installed, thus the conclusion 14/1 Implementation of new ATS speech circuits in REDDIG was completed.

2.6 The Meeting was reminded that the SAM Region States inform the ICAO SAM Regional Office on the existing ATS speech circuits between control towers from adjacent States, the means of communication used for this service and the measures underway (or planned) for its improvement by May 15, 2015.

2.7 The Meeting took note that an analysis of the safe and inexpensive means of communication that could be used to support the above-mentioned speech circuits, will be carried out by an expert of the Region. The results will be presented to the SAM/IG/15 Meeting to be held in Lima from 11 to 15 May 2015.

2.8 The Meeting considered that conclusions 16/1 and 16/2 are still valid until completion of the entire process of final acceptance of the REDDIG II.

2.9 Regarding conclusion16/7 the Meeting reiterated the importance that the States which had not proceeded to register the equipment and frequencies of REDDIG II at the national entities that manage the frequency spectrum, would do so as soon as possible in order to avoid possible future interference problems. On this respect, the Meeting formulated the following Conclusion:

Conclusion RCC18/ 1 Registration process at the national entities that manage the spectrum, of the REDDIG II equipment and frequencies

That, REDDIG II Member States:

a) That still have not complete the process of registration of the frequencies and equipment at the entities that manages the national frequencies spectrum, carry out the procedure not later than 29 May 2015, forwarding a copy of registration forms to ICAO SAM Regional Office by 12 June 2015; and

b) Those States that have already registered REDDIG II frequencies and equipment send a copy of the forms by 31 March 2015.

2.10 The Meeting was informed that Argentina, Chile, Guyana and Trinidad & Tobago have proceeded with the registration of frequencies and equipment and that Brazil, Ecuador, Peru and Uruguay have begun with the process.

APPENDIX

CONCLUSIONS ADOPTED BY THE REDDIG COORDINATION MEETINGS THAT REMAIN VALID AND THEIR STATUS OF IMPLEMENTATION

No.	Title	Content	Status	Remarks
8/8	REDDIG Administration	That, until such time that the institutional aspects related to the management of multinational systems for the provision of air navigation services are more clearly defined, the States agree that, for the next two years, starting 15 October 2005, the REDDIG will continue to be managed through the ICAO technical cooperation mechanism, as an extension of Regional Project RLA/03/901.	Valid	Whereas the establishment of the South American Air Navigation and Safety Organization, multinational system with ability to manage the REDDIG continues undefined, RCC/15 meeting (Lima, Peru, 15-17 August 2012) approved the RLA/03/901 project document substantive revision, extending the management of REDDIG until 2018.
14/1	Implementation of new ATS speech circuits in REDDIG	That, with the aim of increasing the speech communications availability currently carried out through VHF –FM links at the ATS units located in the Brazilian borders: a) The aeronautical administrations of Argentina, Bolivia, Brazil, Colombia and Paraguay prepare an action plan for the implementation of local links between the border ATS unit and the corresponding REDDIG node, to transport the ATS speech circuits indicated under this Agenda Item, paragraph 3.10, and that it be sent to the ICAO Regional Office by 30 June 2011; and b) The REDDIG administration proceeds with the configuration of REDDIG for the inclusion of these circuits.	Completed	The following circuits have been implemented: Tabatinga (Brazil) - Leticia (Colombia) Corumbá (Brazil) - Puerto Suarez (Bolivia) Foz do Iguaçu (Brazil) - Cataratas (Argentina) Uruguaiana (Brazil) - Paso de los Libres (Argentina) The implementation of circuit Foz do Iguaçu (Brazil) - Guaraní (Paraguay) has begun, but the Paraguay side has not been completed yet. Guajaramirim (Brazil) - Guayaramirín (Bolivia) circuit will be implemented by a radio communication link point to point to be provided by Brazil in both sides of the link. Therefore it will not be implemented by the REDDIG II

No.	Title	Content	Status	Remarks
15/1	Operational traffic at the MEVA II/REDDIG interconnection AFTN circuits	That, a) the aeronautical administrations of Colombia and Venezuela coordinate with the respective MEVA II member States for the completion, before 30 September 2012, of the AFTN circuit operation through the MEVA II/REDDIG interconnection circuits indicated in paragraph 3.3 of this Agenda Item, since said circuits are currently being paid to the MEVA II service provider; and b) Brazil continues coordination's with United States with the aim of completing the trials and starting the operation of the AFTN circuit, by 30 October 2012.	Valid	The AFTN circuit between Brazil and Atlanta is pending.
15/4	Payment of cost sharing contributions to Project RLA/03/901	That, a) REDDIG member States that have not yet deposited their cost-sharing contributions to RLA/03/901 Project for the years 2011 and 2012, are encouraged to do so as soon as possible to allow the normal development of project activities, and b) Likewise, States that have not yet responded to letters requesting to deposit the funds required to finance the REDDIG II, are urged to do so as soon as possible during the second half of 2012, so that ICAO can sign the contract with the company winning the tender.	Valid	Suriname has not yet cancelled its 2012 quota.

No.	Title	Content	Status	Remarks
16/1	Support of the civil aviation authorities to the focal points nominated for the implementation of REDDIG II	That the REDDIG member States Civil Aviation Authorities provide the focal point(s) nominated for the implementation of REDDIG II, all necessary facilities for the conduct of all activities required for their functions.	Valid	Considering the importance of this conclusion for the success in the implementation of the REDDIG II, during the Thirteenth Meeting of the Civil Aviation Authorities of the SAM Region (RAAC/13) (Bogota, Colombia, December 4-6, 2013) it was formulated Conclusion RAAC/13-7 - *Facilitating active participation in all REDDIG II implementation activities.* The support should continue in all activities foreseen in the REDDIG II until the final acceptance of the REDDIG II.
16/2	Functions of the REDDIG II focal points	That REDDIG member States civil aviation authorities take into account the following functions required from the focal point(s) nominated by their administration: a) Participate in follow-up meetings regarding REDDIG II implementation; b) Assist to courses scheduled for REDDIG II; c) Review and approve the SDD and other documents provided by the bid winning company; d) Obtain frequencies licenses from the entities in charge of the radio electrical frequency spectrum administration; e) Arrange for the clearance of equipment from customs; f) Follow-up on the activities regarding REDDIG II installations; and g) Participate in provisional and final acceptance tests and in the signature of the respective minutes.	Valid	Pending a), d) and g).

No.	Title	Content	Status	Remarks
16/3	Payment of cost sharing contributions to Project RLA/03/901	That: a) Argentina, Suriname and Trinidad & Tobago make the deposit of cost-sharing contributions of Project RLA/03/901 corresponding to year 2012; and b) Argentina, Bolivia, Chile, Paraguay, Suriname and Venezuela deposit as soon as possible the REDDIG II extraordinary quota, in order to satisfactorily finalize the process of hiring the REDDIG II and ensure continued availability of the network.	Valid	Suriname has not yet cancelled its 2012 quota.
16/5	Customs clearance updating's	That Project RLA/03/901 member States update the information concerning domestic customs clearance requirements and send it to the Project Administration by 31 May 2013, with a view to expediting the import of equipment and spare parts for the REDDIG Project.	Completed	The customs clearance process of equipment and spare parts was completed in September 2014.
16/7	REDDIG interference with IMT system	That REDDIG member States register and document any interferences at the REDDIG nodes [Fixed Satellite Service (FSS)] with International Mobile Telecommunications (IMT) system and inform of them to the local entity administrating the radio frequency spectrum, as well as the REDDIG Administration, and coordinate with the local radio frequency spectrum administration the protection of the 3.4 to 4.2 Ghz band to ensure continuous availability of the aeronautical services at this frequency band.	Completed	States took into account the suggested action and will inform the local entity administrating the radio frequency spectrum, as well as the REDDIG Administration.

No.	Title	Content	Status	Remarks
17/1	New MEVA III / REDDIG II interconnection	That Project RLA/03/901 member States, in view of the new MEVA (MEVA III) network implementation and with the aim of maintaining the interconnection services operation between MEVA III network and REDDIG II, considered: a) Choosing the option of renting equipment by the MEVA III supplier, rather than purchasing equipment with non-recurring and recurring costs shown in Appendix E of this Agenda item; b) Share equitably among all States the non-recurring costs of MEVA III/REDDIG II interconnection in the nodes of Bogota and Caracas specified in Appendix E of this Agenda item; and c) Share the recurrent costs of network access among all States specified in Appendix E of this Agenda item.	Completed	The RCC/17 approved the leasing option for the MEVAIII / REDDIG II interconnection, sharing equally the non-recurring costs specified in RCC/17 - Appendix E, Agenda Item 4.
17/2	Approval of the “S” Review budget of Project RLA/03/901	That Seventeenth Meeting of the RLA/03/901 Coordination Committee, adopted the "S" Revision of the RLA/03/901 budget, as presented in **Appendix B**, Agenda Item 5 of the report.	Completed	The “S” revision was approved in the RCC/17.

No.	Title	Content	Status	Remarks
17/3	Updating of customs clearance paperwork	That, given that the maximum time of States to internalize the material is of one month, after which the contract terms regarding economic terms and time for execution would be affected, the member States of Project RLA/03/901 shall report to the ICAO South American Office, not later than 30 April 2014, if they require additional information to the specified in item 9.9 of the REDDIG II contract, corresponding to the documents that the contractor shall provide to the State on the equipment to be sent to the REDDIG II nodes, and/or have other national requirements for customs clearance.	Completed	Activities were completed to date

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

3.1 The Meeting analysed the following main activities agreed upon at the last meeting of the Coordination Committee (RCC/17), to be included in the work plan 2014, in addition to the operations, support and network maintenance tasks:

a) 2014 training programme;
b) Implementation of new services;
c) Logistic matters of the REDDIG; and
d) Follow up to the implementation of the REDDIG II.

2014 Training programme

3.2 With reference to the training activities, the Meeting was informed on the following courses carried out:

- Factory course on REDDIG II
- Introduction to REDDIG II Course (Routers and Switches CISCO)
- Theoretical and practical REDDIG II Course

Factory course on REDDIG II

3.3 The Meeting took note that the factory course as planned was conducted in Velizy, France, from April 21 to May 9, 2014. The course was aimed at personnel of Manaus and Ezeiza NCCs and was attended by three delegates from Brazil, three delegates from Argentina and the administrator of the REDDIG. The program of the course is presented as **Appendix A** to this Agenda Item. The course material has been placed on the REDDIG II web page www.lima1.icao.int/reddig.

3.4 The course took place uneventfully and all the topics of the Factory Training programme were covered, including theoretical classes and practical and laboratory exercises where applicable.

3.5 The Meeting noted the recommendation made by the participants to the factory course to analyse the possibility of schedule for 2015 a specialised course on management and operation of the WhatsUp Gold software addressed to the technical staff in charge of the REDDIG nodes. On this respect the Meeting proceed to approved. More details are presented in Agenda Item 4.

Theoretical and practical REDDIG II Course (Routers and Switches CISCO)

3.6 The Meeting was informed that a course on CISCO routers and switches was held on 29 July to 1 August 2014 in Bogota, Colombia, to provide basic theoretical-practical knowledge on IP devices to those designated to participate in the theoretical-practical course on REDDIG II to be held in Rio, to be supplemented during the theoretical-practical course on the REDDIG II of Rio (11 August to 5 September 2014).

3.7 The course was given by a Colombian entity certified for providing the CISCO course, with the participation of 22 delegates from 9 REDDIG II member States. During the course, the participants received theoretical classes on CISCO routers and switches, and did laboratory practice to supplement the theory. Taking into account the short duration of the course, an attempt was made to provide ample information.

3.8 The Meeting express gratitude to the Aeronautical Administration of Colombia for the organization of such an important course contributing to the training of the personnel responsible for the maintenance and the operation of the REDDIG II.

Theoretical and practical REDDIG II Course

3.9 The Meeting took note that the theoretical-practical course on the REDDIG was held as scheduled in Rio, Brazil, for two weeks. It comprised four sessions: three in Spanish and one in English. The four sessions were carried out in two sections: the first from 11 to 22 August and the second from 25 August to 5 September 2014.

3.10 Two persons were trained for each REDDIG node. Some States had three candidates for each node, as was the case of Argentina, Brazil, Peru, and Bolivia. A total of 39 people were trained; per diems and travel expenditures for 36 people were covered by the contract. The content of the course in Rio is posted on the website of Project RLA/06/901 www.lima1.icao.int/reddig.

3.11 The Meeting was informed that during the theoretical-practical course, it was noted that a significant number of participants had no experience with IP technology and that training in router programming was probably not fully taken advantage of, and many people had difficulties, despite being the most important component of REDDIG II.

3.12 The Meeting considered that this is mainly due to lack of basic knowledge of IP networks. Therefore, it is important that each person designated to be in charge of REDDIG II maintenance and operation, in addition to RF and satellite communication knowledge, should have basic knowledge of IP networks, CISCO routers, and switches.

3.13 The Meeting was informed that basic courses on CISCO networks, routers, and switches are given in practically in all REDDIG II member States and that the Aeronautical Administrations should train all the technical staff in charge of communication system maintenance and operation through these basic courses, since, nowadays, there are IP networks and devices everywhere. In this sense the Meeting considered to carry out a basic course on IP networks, CISCO routers. More details are presented in Agenda Item 4 of this Meeting.

Implementation of new services

3.14 The Meeting took note that during April 2014, it was successfully completed the testing of end-to-end of the circuit oral ATSd between Foz de Iguaçu (Brazil) Guarani (Paraguay) being in operational performance.

Logistic matters of the REDDIG

3.15 During year 2014, 11 logistic operations were carried out. The summary of failings and spare parts are presented in **Appendix B** to this Agenda Item. **Appendix C** presents 2014 statistics regarding the number of mayor attention to the network nodes, as well as its distribution in terms of the type of equipment that requires the attention and in **Appendix D** presents the picture of network availability from 2004 until the end of 2014.

Follow-up to the implementation of the new REDDIG II

REDDIG II factory acceptance tests (FAT)

3.16 The Meeting took note that the REDDIG II factory acceptance tests were conducted on 12-16 May 2014 in Vélizy, Paris, at INEO facilities, with the participation of representatives of Project RLA/03/901 members of Argentina, Brazil, Paraguay and Peru, and the REDDIG II Administration.

3.17 The following activities were conducted during the factory acceptance tests:

- Verification of cabling and equipment installation on each rack of REDDIG II
- Verification of models and serial numbers of all REDDIG II equipment
- Testing of communication links between sites, in a simulated environment
- Testing of outdoor equipment
- Testing of indoor equipment
- Testing of the REDDIG II monitoring system

3.18 For testing purposes, INEO installed in its laboratory all the equipment, cables, and connectors in the respective racks of all REDDIG II nodes. For connections between nodes, coaxial cables were laid between satellite modems, using combiners and splitters.

3.19 Upon completion of the FAT, the group proceeded to accept the FAT with observations, which were considered as a must to be fully resolved by the INEO & Level 3 consortium as a precondition for acceptance of provisional site acceptance tests (PSAT). The focal points noted the observations during the provisional acceptant test of REDDIG II. The results of the FAT are detailed in REDDIG web page www1.lima.icao.int/reddig.

Results of the Third technical-operational meeting for the implementation of REDDIG II (RTO/3)

3.20 The Meeting took note that the RTO/3 meeting was held in Bogota, Colombia, on 28-29 July 2014, with the participation of 9 member States (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Trinidad & Tobago and Uruguay), totalling 19 attendees, including ICAO experts. In this meeting important conclusions were formulated, mainly addressed to focal points, on actions required prior to REDDIG II implementation. Copy of the RTO/3 final report with the conclusions formulated can be downloaded from the following ICAO website: http://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2014-REDDIGII01.

Customs clearance process of REDDIG II equipment

3.21 The Meeting recalled that the RCC/16 meeting formulated Conclusion RCC/16/5 - Customs clearance updatings, requiring Project RLA/03/901 member States to update information concerning national customs clearance requirements and submit it to the ICAO SAM Office. In this respect each REDDIG II member States sent its requirements, as well as the address and name of the person to whom the REDDIG II provider should deliver the equipment.

3.22 The Meeting took note that despite the delivery of REDDIG II equipment should has been made in late July 2014, was delayed by almost two months due to problems encountered by the contractor in obtaining the export license from French customs. French customs wanted to make sure that REDDIG II equipment was not to be used for military purposes. Accordingly, REDDIG member States sent a form signed by the focal point stating that the equipment was only to be used for civilian purposes.

In order to compensate for the delay, the contractor sent the equipment by air instead of by sea between mid-September to mid-October 2014.

3.23 The Meeting was informed that in order to coordinate customs clearance of REDDIG II equipment with focal points, two teleconferences were held on 1 and 2 October 2014; to report on the date of delivery of the equipment and documents by the contractor for customs clearance by States, as specified in the contract.

3.24 In this teleconferences it was agreed with the States that, although the timetable of activities of REDDIG II specified that States had 45 days to clear local customs, they would try to do it in a shorter period of time so that commissioning would not coincide with Christmas holidays. In this regard, each State noted how much time they would require for this process and it was estimated that it would not exceed one month. During the teleconference it was considered that in the event a State took 45 days or more to clear customs, that REDDIG II provisional acceptance tests (PSAT) should be conducted in January 2015.

3.25 In this sense, considering that the process of custom clearance of the equipment in all the States ended in mid-December 2014 and that implementation of the last-mile links from nodes of the REDDIG II to the Level 3 fiber-optic network entry points was completed by the end of the month of December 2014, the operational implementation of REDDIG II was postponed to mid-January, 2015. INEO & Level 3 consortium was responsibility of the delay.

Operational implementation of REDDIG II

3.26 The Meeting was informed that the operational implementation of REDDIG II by the Consortium INEO & Level 3 began on January 15, 2015 and was completed on January 31, 2015. INEO planned to perform it in five days, but was completed in a period of 17 days.

3.27 The implementation comprises the following phases, whose detailed description is presented as **Appendix E** to this Agenda Item:

- Preparation of the migration
- Land network tests
- Completion of the implementation of outdoor
- Commissioning of the satellite termination network
- Finalization

3.28 The Meeting noted that in order to follow up on activities in each of these phases as well as in decision making joint migration to the land, the new VSAT network I REDDIG and provisional acceptance (PSAT) in the site more tests (NAT) network, daily teleconferences from January 14 to February 5, 2015 were conducted. Further details regarding pending activities of REDDIG II are presented in Agenda Item 4.

APPENDIX A

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

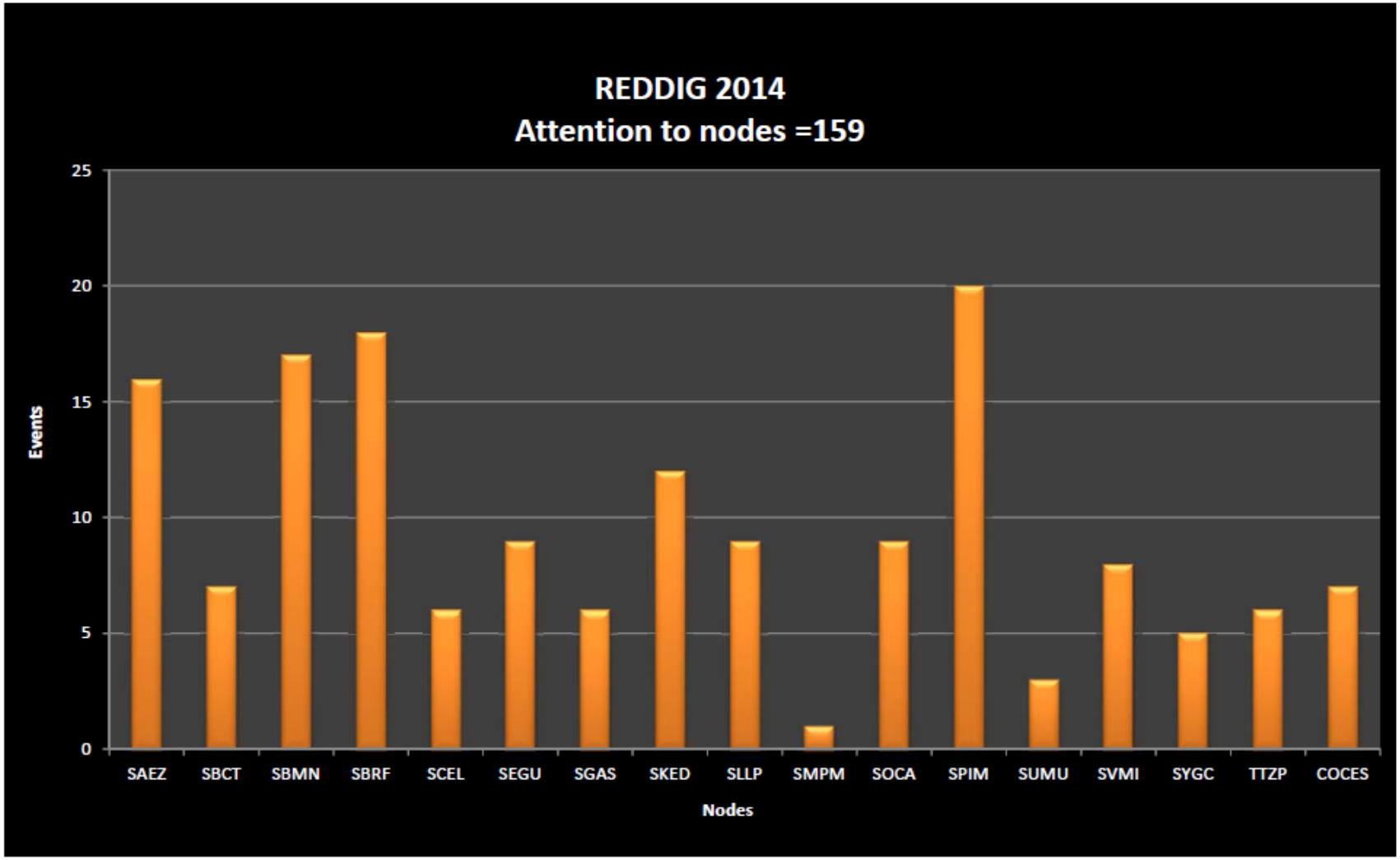
WEEK 3	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Morning	**21)- NMS system - Part 2** 4) Description of the groups and maps in WUG. Description of the animation for icons. 5) dynamic or static groups, filter 5) reports	**23)- Redundancy system - theory and Lab** - Equipment configuration - NMS based commutation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

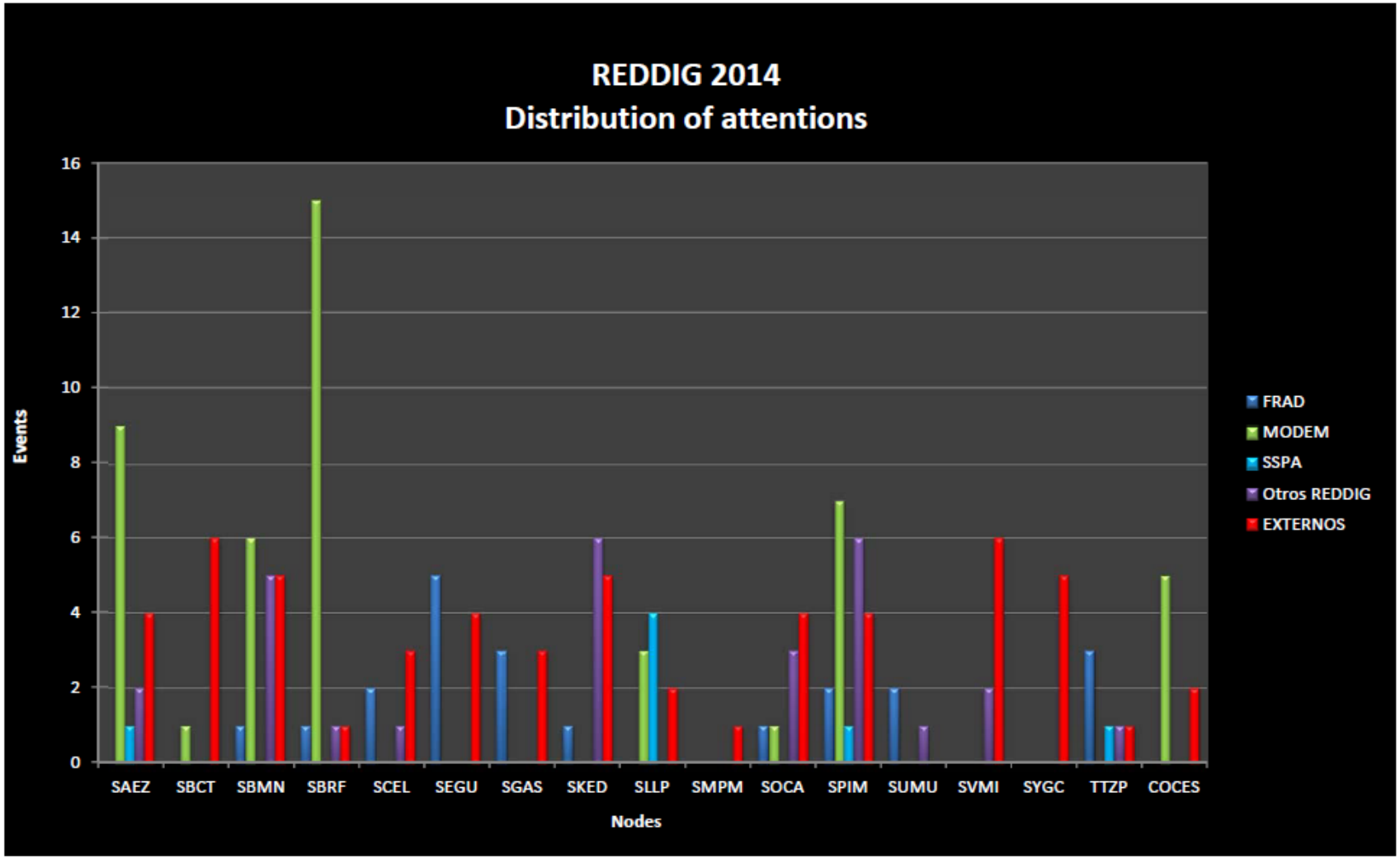
APPENDIX B

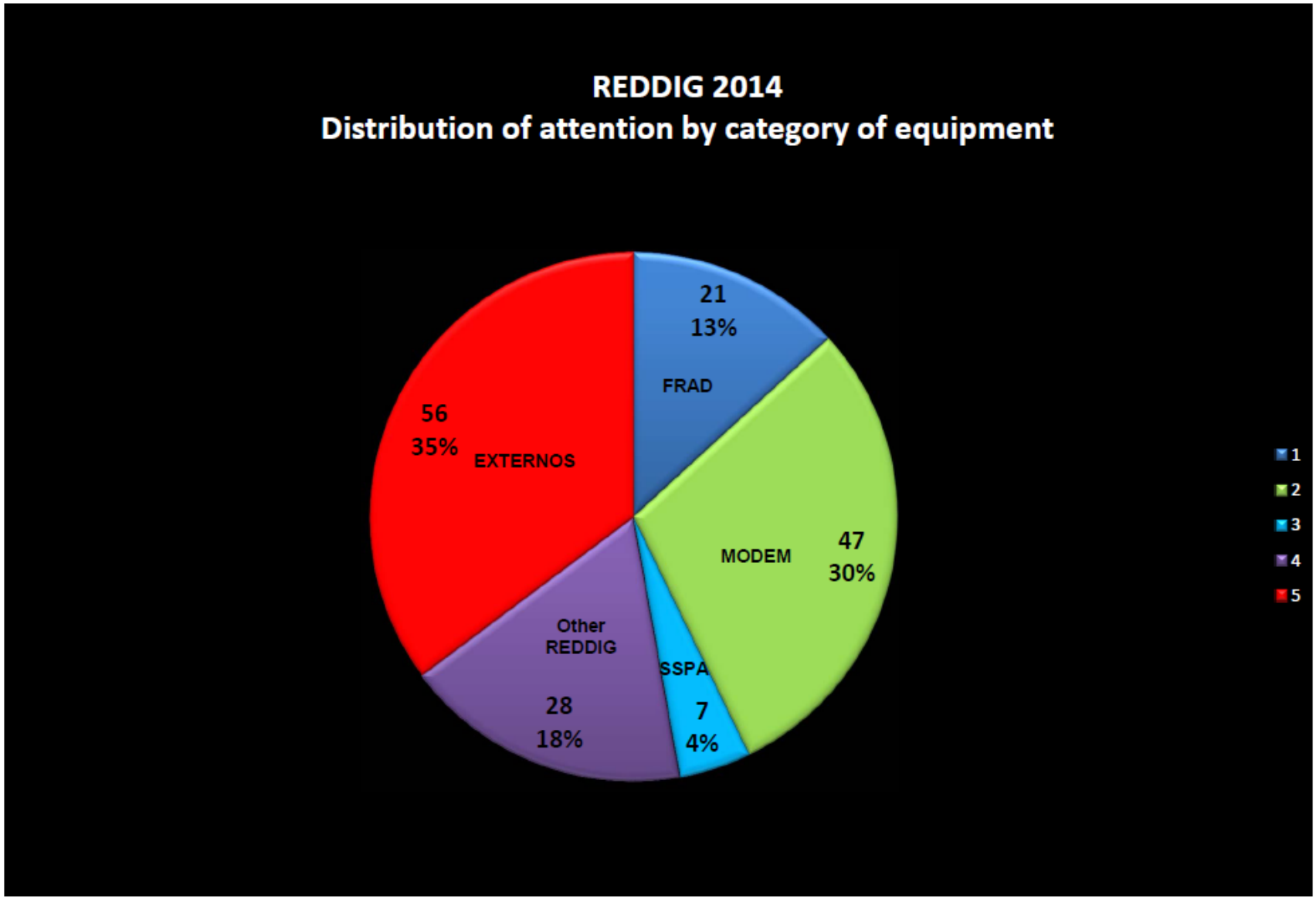
Summary of faults and spare parts - 2014

FRAD		Manufacturer:	Memotec
	(1)	FX SLIM Card	: (1) SBMN
	(1)	Universal I/O Card	: (1) SEGU
MODEM		Manufacturer:	ViaSat
	(3)	Quad Output P.S.	: (1) SBRF, (1) SAEZ, (1) SOCA
	(2)	24 VDC P.S.	: (1) SAEZ, (1) SOCA
	(1)	BPM Module	: (1) SBRF
	(2)	Conn P.S./Backplane	: (1) SBRF, (1) SPIM
SSPA		Manufacturer:	Paradise Datacom
	(1)	SSPA TX Module	: (1) SLLP
	(1)	M&C	: (1) SLLP
Other REDDIG			
	(1)	RX Waveguide Switch	: (1) SKED
	(1)	Hard Disk, PC Linux	: (1) SOCA

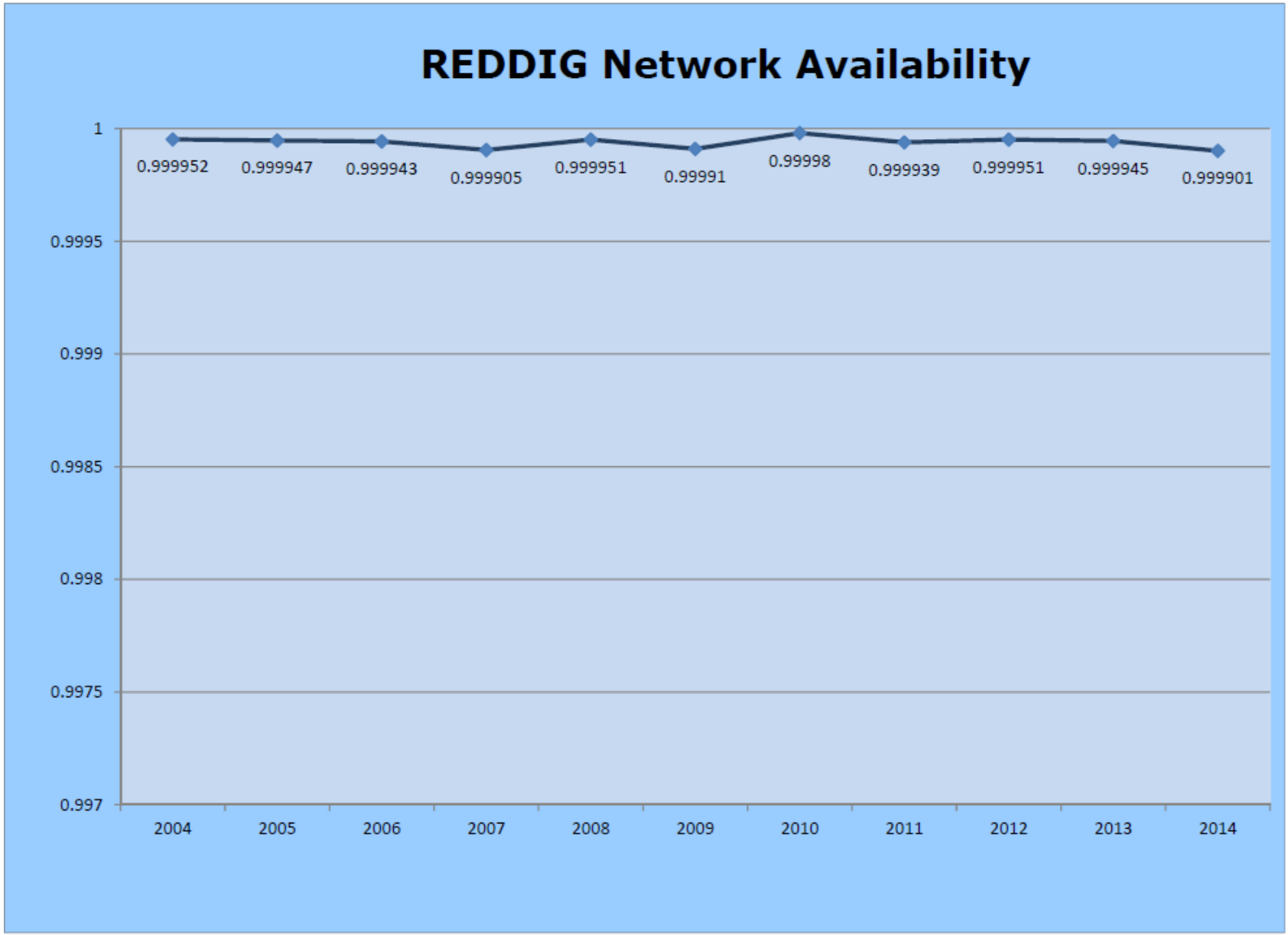
APPENDIX C


REDDIG 2014
Attention to nodes =159
Events
25
20
15
10
5
0
SAEZ
SBCT
SBMN
SBRF
SCEL
SEGU
SGAS
SKED
SLLP
SMPM
SOCA
SPIM
SUMU
SVMI
SYGC
TTZP
COCES
Nodes


REDDIG 2014
Distribution of attentions
Events
16
14
12
10
8
6
4
2
0
SAEZ
SBCT
SBMN
SBRF
SCEL
SEGU
SGAS
SKED
SLLP
SMPM
SOCA
SPIM
SUMU
SVMI
SYGC
TTZP
COCES
Nodes
FRAD
MODEM
SSPA
Otros REDDIG
EXTERNOS


REDDIG 2014
Distribution of attention by category of equipment
21
13%
FRAD
47
30%
MODEM
7
4%
SSPA
28
18%
Other
REDDIG
56
35%
EXTERNOS
1
2
3
4
5

APPENDIX D


REDDIG Network Availability
1
0.9995
0.999
0.9985
0.998
0.9975
0.997
0.999952
0.999947
0.999943
0.999905
0.999951
0.99991
0.99998
0.999939
0.999951
0.999945
0.999901
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

APPENDIX E

MIGRATION SUPPORT DOCUMENT

Migration Support Document

Reference:	**ICAO REQUEST FOR TENDER: ST-22501200**
File:	**Document support à la migration.doc**
Project:	**NEW TRANSPORTATION NETWORK OF THE REGIONAL AERONAUTICAL TELECOMMUNICATION NETWORK (REDDIG II)**
Portion:	**Document support à la migration.doc**

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Index	**A**	**Signature**	
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MIGRATION SUPPORT DOCUMENT 1

FILE: DOCUMENT SUPPORT A LA MIGRATION.DOC 1

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1 INTRODUCTION

1.1 PREFACE

The REDDIG system, implemented at the beginning of the 2000s, is an ICAO project for air traffic control in South America. It is interconnected with its equivalent in Central America, COCESNA, through the node in Tegucigalpa, Honduras, and with MEVA (CAR- Caribbean zone) through the nodes in Maiquetía, Venezuela and Bogota, Colombia.
Each node in the project is identified by its ICAO code (figure 1). The two main nodes on the networks are SBMN (Manaus, Brazil) and SAEZ (Buenos Aires, Argentina).

This document is a supplement to the specific installation specifications for each site.

Migration of the REDDIG system requires coordination at all times. Communication is currently supported by a VSAT (satellite) network and will be migrated to a mixed VSAT and terrestrial network (Ground Backbone - GBB, MPLS network) managed by LEVEL 3.

The objective of the migration is to:

- Replace the existing VSAT system.
- Replace the RF *(and VSAT coaxial cables, if this has not already been done)*
- Modify the antenna (horn, diaphragm, and/or paint)
- Implement a GPS antenna *(if this has not already been done)*
- Implement a monitoring system
- Carry out the system migration

This document describes the installation/migration steps (step 2). The pre-installation carried out in 2014, included the implementation of one or two new bays, new coaxial and data cables to the antenna, installation of the outdoor equipment (IBUC, RX1+1, and GPS antenna), and the power-up procedure for the indoor equipment.

The migration includes the steps and procedures for moving the REDDIG I services to REDDIG II while minimising the length of any service interruptions (by using the terrestrial network).

It is suggested to examine the summary list of all installation tasks in the appendix.

1.2 INSTALLATION CONDITIONS / AREA OF RESPONSIBILITY OF THE FOCAL POINT

The focal point (on-site contact) shall be responsible for the following points:

- Publishing Notams (see glossary) to provide alerts about work and potential service disruptions.
- Providing an uninterruptible power supply
- Confirming proper operation with air-traffic controllers

He/she is not be responsible for the following, but may be requested to:

- Provide us with an electrician to install breakers in the electrical panel on site.
- Make staff available to us to help with installation tasks such as handling
- Provide us with a pallet truck for transporting cases/bays
- Help us to identify an outdoor installation site for the GPS site (see below)
- Provide us with all required access permissions

1.3 NEW EQUIPMENT TO BE INSTALLED

The new equipment to be installed on the site is as follows:

- One bay measuring 600 x 1000 x 2000 mm and related equipment (modems, routers, etc.)
- One redundant IBUC system *(Except in Trinidad, to be installed)*
- Coaxial and outdoor data cables
- Indoor, CAT V, multi-pair data cables (DB25)
- Two circuit breakers
- GPS Antenna
- Remote monitoring screen, with keyboard and mouse
- IP Telephone

The following have not been installed or still need to be installed:

- Waveguide switch and LNB on the VSAT antenna source
- Electrical connection of the IBUCs and RX1+1 (reuse old cables)
- Renovation of the VSAT antenna (depending upon the site)
- Replacement of the source (horn) and/or diaphragm on the source (depending upon the site)
- Commissioning of the new system (line-up)
- Migration of the services
- Customer approval

Pay special attention to the packing list provided, which includes all equipment sent.

1.4 SITE INDICES (NUMBERS)

Country	Number
Argentina	**20**
Bolivia	**25**
Curitiba	**30**
Manaus	**36**
Recife	**38**
Chile	**40**
Colombia	**45**
Ecuador	**50**
Paraguay	**55**
Peru	**60**
Guyana	**90**
Guyana (Cayenne)	**92**
Suriname	**94**
Trinidad	**91**
Uruguay	**65**
Venezuela	**80**

1.5 CONTACTS

See specific technical installation specifications.

1.6 SITE SPECIFICATIONS

See specific technical installation specifications.

2 DAY 1: PREPARATION FOR MIGRATION

2.1 STEP 1: INSPECTION OF COMPLETED WORK

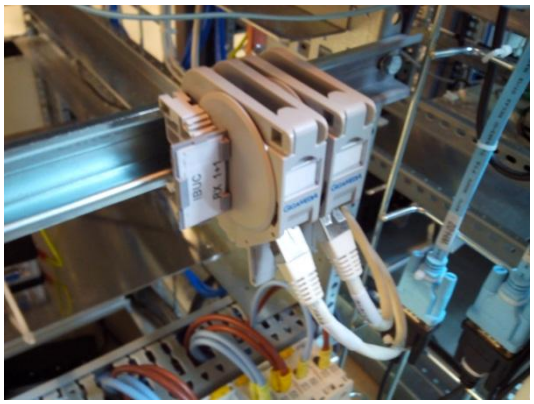
To err is human; therefore, it is important to check the installation work to ensure that everything has been completed.

Task	OK /KO	Help
IBUC installation		See installation specifications
RX 1+1 installation		See installation specifications
Coaxial cable pulling		Appendix 7.7.6
Outdoor data cable pulling		Appendix 7.7.6
Amphenol and coaxial connectors		Appendices 7.7.1 and 7.7.3
Antenna renovation		
Earthing the IBUCs and RX 1+1		Appendix 7.8
GPS Antenna Installation		Appendix 7.9
Wiring from the GPS antenna to the receiver		Appendix 7.9
Installation of the bay		See installation specifications
Installation of the circuit breakers		See installation specifications
Power-up procedure for the bay		
Customer connections provided within 5 m		
Printer and screen installation		
Connection of the Belden cable to the Gigamedia connector on the bay (see paragraph 2.1.1)		Appendix 7.7.4

If the preceding list has not been entirely approved, complete these tasks right away (except for antenna dimensions).

2.1.1 Inspection of the lightning connectors

1) Ensure that the Belden cable is properly connected to the gigamedia substrate and connected to the lightning connectors.



See appendix 7.7.4 for connection information if necessary.

2) Ensure that the outdoor coaxial cables are properly connected to the lightning connectors. Be sure not to cross the Tx and Rx cables, etc.

2.1.2 Charging and start-up of the Signal TEK II tester

It is carefully stored in a small fabric carrying case. It is important to charge it, as you may need it for some tests; wiring tests for example (description in the appendix).
See its instructions (in your installation file):

156811_SignalTEK_II_Manual_French

2.1.3 For the Brazilian sites: IP re-transmitter installation

For the 3 Brazilian sites, because there is a long distance (> 70 m) between the antenna and the bays, installation of a small self-powered (no electrical connection required) IP re-transmitter has been planned for repeating the signal.
Unfortunately, this problem was discovered late, and thus the solution to be installed was not tested or ever installed.
This is why the changes to the bay plans are shown in red.

The assembly consists of 2 parts: a case on the antenna side to be installed contiguous to the antenna power supply SEEE box, and a small powered modem on the bay side.

For installation, refer both to the bay plans and the specific plans for the IP re-transmitter supplied.

Do not connect the antenna-side box to the power supply.

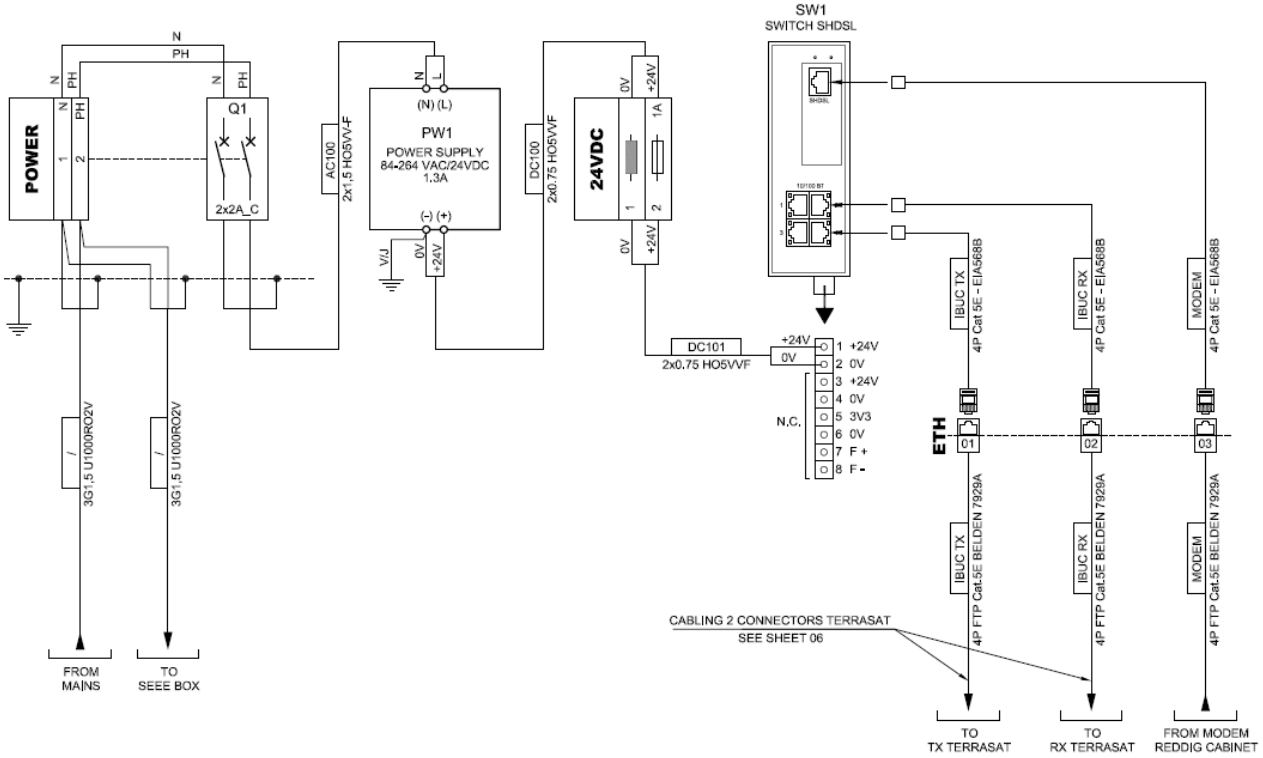


Figure 1 - Overview of the IP re-transmitter components, excerpt from the specific plan

2.2 STEP 2: PREPARATION FOR REPLACEMENT OF THE FEED HORN OR DIAPHRAGM

If you are not involved in this replacement, skip to the next step.

In the coming days, you must replace part of the antenna, the source or the diaphragm, WITHOUT RE-AIMING THE ANTENNA. Thus, it is necessary to access this part, located more than 1.8 m above the ground.

To do so, it is essential to prepare the following for the day the work is to be done (not now):

- Your safety harness
- Request a ladder from the customer for safety, then access the source by climbing into the dish.
- Request a volunteer to do this for you (bonus authorised)
- Rent an aerial basket if the other recommendations are not possible.

2.3 STEP 3: POWER-UP PROCEDURE FOR THE INDOOR PART

2.3.1 Power-up procedure for the bay

1- Close the circuit breakers on the control board
2- Set the voltmeter to VAC; connect the terminals to V (red) and COM (black).
3- Measure the voltage at each bay terminal and read the value (230 VAC, except in Trinidad & Tobago, 110 VAC before the transformer).

Figure 2 - Voltage measurement at the bay terminals

4- Close the circuit breakers on the bay, waiting at least 3 seconds between each one. The bay now has power.

Complete the corresponding section on the PSAT document with the customer, in paragraph 2.2.

2.3.2 Power-up procedure for the equipment

2.3.2.1 UPS

Allow the Eaton UPS (at the bottom of the bay) to charge for 10 minutes before turning it on. Do not turn on the server before this charging time is complete.

2.3.2.2 Other equipment in the bay

You may turn on the other equipment without worry. The equipment should start up, and will be operational after 3 min.

2.3.2.3 Power-up procedure for the control-room equipment

Turn on the screen in the control room and verify access to the server (display the server screen) and proper function of the mouse, keyboard.

2.4 STEP 4: CHECKING FUTURE CONNECTIONS

2.4.1 Identification of the REDDIG I services to be migrated

Identify the REDDIG I service cable, and verify with the customer that the service is in fact operational. If possible, carry out a test, and above all, pay special attention to the AFTNs.

Department:	Operational yes/no	Identification of the existing cable	Connector (and gender)	Straight/crossover cabling

Plan for an appropriate amount of time: identifying each service is not easy; the bay is 10 years old!

Complete the corresponding section on the PSAT document with the customer, in paragraph 3.1.

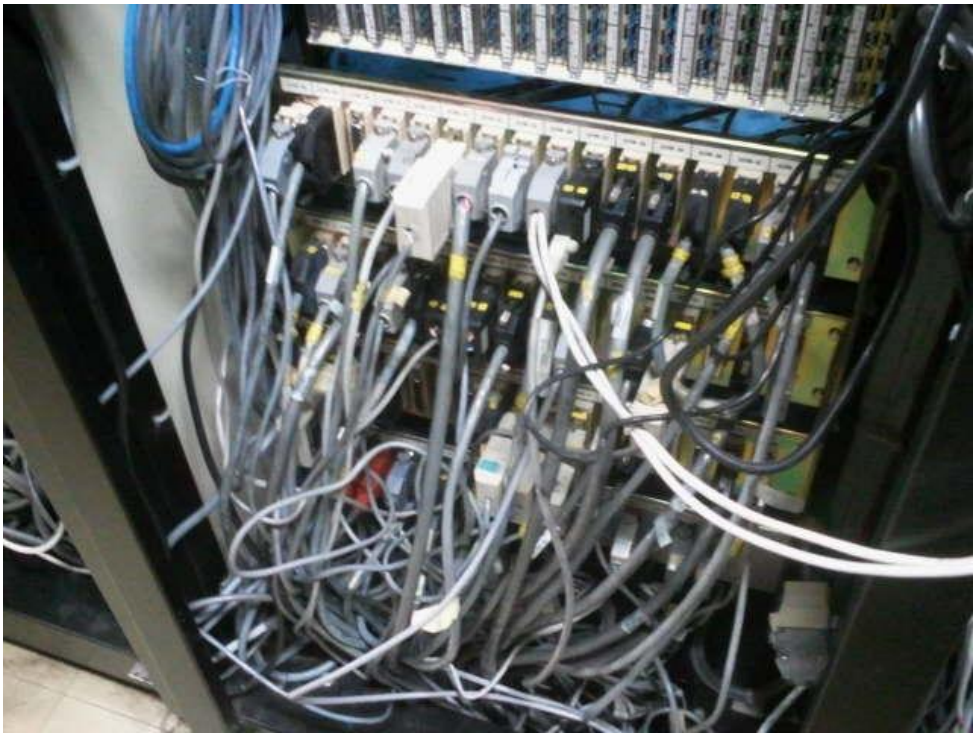


Figure 3 - Example of the services on REDDIG I

2.4.2 Confirmation of ability to connect

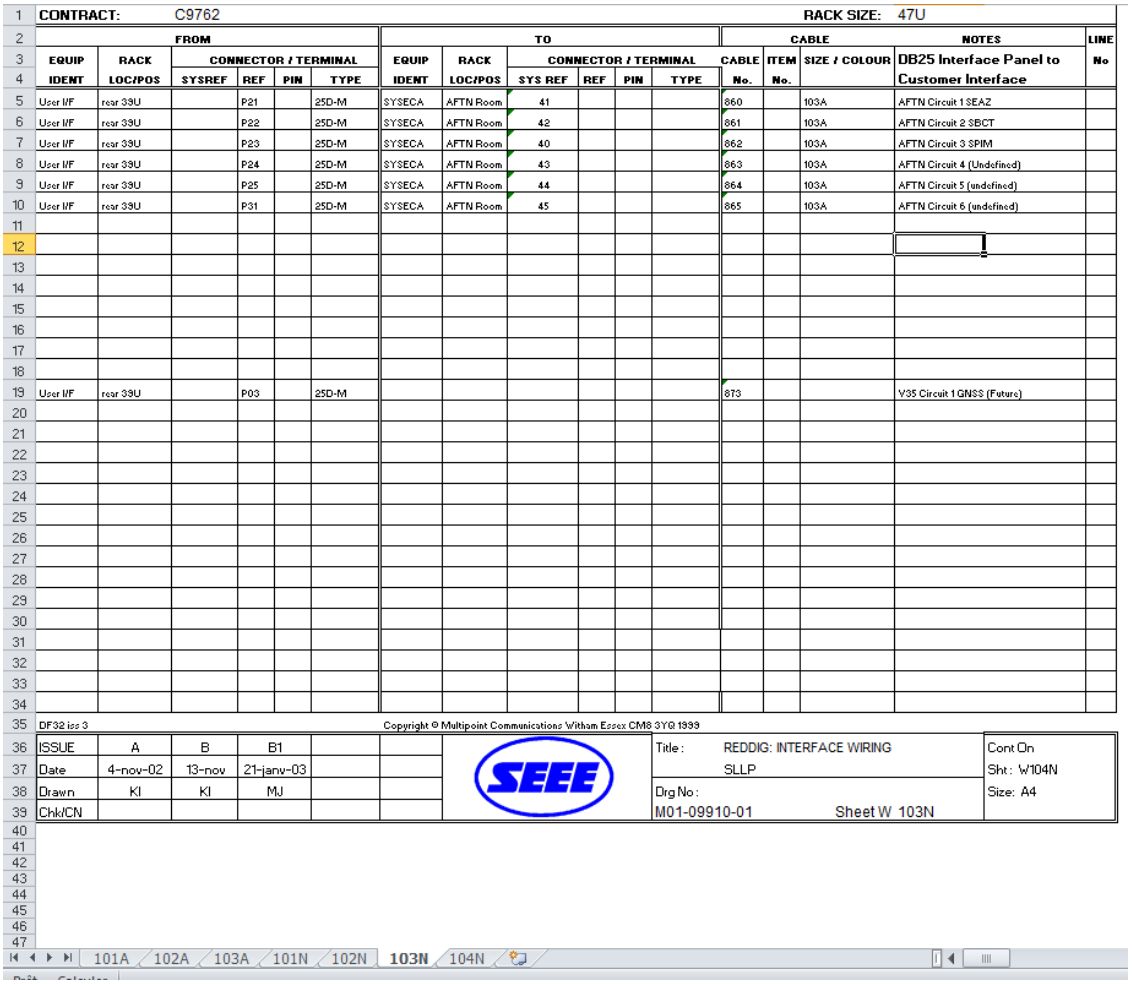
If the bay is less than 5 m away, an extension has been provided (and you have gender benders in your equipment bag). Otherwise, the customer should have provided the service at the base of the REDDIG II bay (contractual).

Identify the extension for each service, label it (at least temporarily), ensure that it is long enough to make the connection, and check its connector type.

Department:	Identification of the existing cable	Identification of the extension	Comment/ problem?

For help, use the excel document "*S… interface wiring .xls*", in the *07-REDDIG I info folder*.

Example:



	CONTRACT:	C9762													RACK SIZE:	47U		
	FROM						TO							CABLE			NOTES	LINE
	EQUIP IDENT	RACK LOC/POS	CONNECTOR / TERMINAL SYSREF	REF	PIN	TYPE	EQUIP IDENT	RACK LOC/POS	CONNECTOR / TERMINAL SYS REF	REF	PIN	TYPE	CABLE No.	ITEM No.	SIZE / COLOUR	DB25 Interface Panel to Customer Interface	No
5	User I/F	rear 33U		P21		25D-M	SYSECA	AFTN Room	41				860		103A	AFTN Circuit 1 SEAZ	
6	User I/F	rear 33U		P22		25D-M	SYSECA	AFTN Room	42				861		103A	AFTN Circuit 2 SBCT	
7	User I/F	rear 33U		P23		25D-M	SYSECA	AFTN Room	40				862		103A	AFTN Circuit 3 SPIM	
8	User I/F	rear 33U		P24		25D-M	SYSECA	AFTN Room	43				863		103A	AFTN Circuit 4 (Undefined)	
9	User I/F	rear 33U		P25		25D-M	SYSECA	AFTN Room	44				864		103A	AFTN Circuit 5 (undefined)	
10	User I/F	rear 33U		P31		25D-M	SYSECA	AFTN Room	45				865		103A	AFTN Circuit 6 (undefined)	
19	User I/F	rear 33U		P03		25D-M							873			V35 Circuit 1 GNSS (Future)	

ISSUE	A	B	B1	Title:	REDDIG: INTERFACE WIRING
Date	4-nov-02	13-nov	21-janv-03		SLLP
Drawn	KI	KI	MJ	Drg No:	M01-09910-01 Sheet W 103N
Chk/CN				Cont On	Sht: W104N Size: A4

101A 102A 103A 101N 102N **103N** 104N

2.4.3 Case of the E&Ms

The wiring for the E&Ms is not straight; it depends heavily upon the products used. With the customer, establish the pin-out.

E&M Cable from Memotec CX (existing):

Table 7-5 Voice Connector Signal Output (RJ-45)

8-pin	Description
1	M
2	E
3	Tip 1
4	Ring
5	Tip
6	Ring 1
7	Signal Ground
8	Signal Battery

Figure 4 - Memotec CX E&M Cabling

For help, the Cisco wiring diagrams are provided in appendix 7.2.

2.4.4 Case of the E1s

The standard cabling for the E1s is straight. The clock may be either sent by the customer's PBX, or by the Cisco. Know that you may have to make a crossover cable, by crossing the green pair (1&2) with the blue pair (4&5).

2.5 STEP 5: CABLING BETWEEN REDDIG I AND REDDIG II

After having identified the customer transitions or connections, connect the transitions to REDDIG II and the connections made by the customer to REDDIG II. Do not disconnect anything from REDDIG I yet.

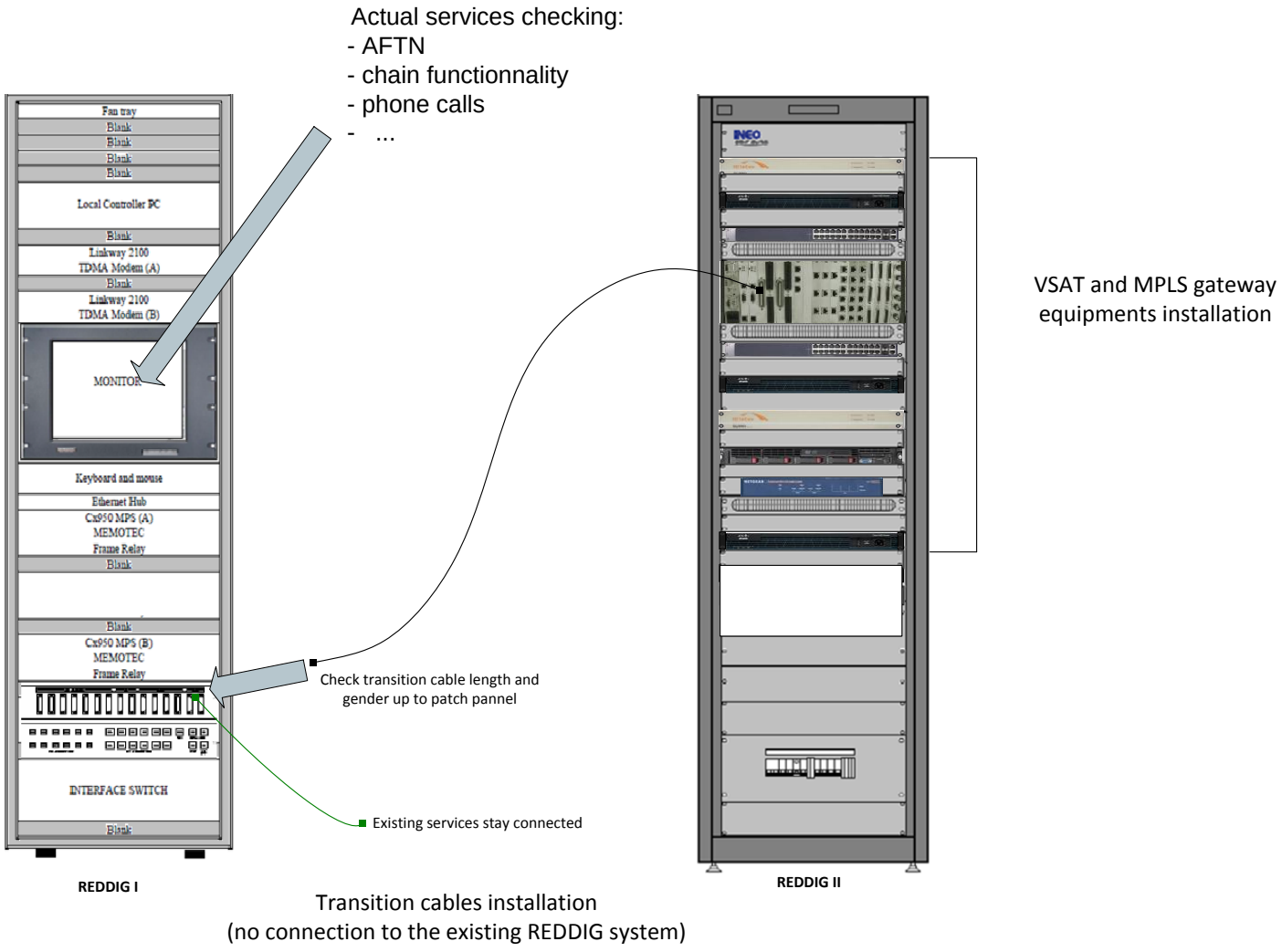


Figure 5 - REDDIG I and II connection diagram

2.6 STEP 6: CONNECTION TO THE LEVEL 3 EQUIPMENT

LEVEL 3 is the operator of the ground link for REDDIG II. They should have installed a Cisco 1921 router or equivalent.

Figure 6 - Cisco 1921 Example

With (or without) the help of the focal point, identify the router, and without disconnecting it, connect it to REDDIG II with the appropriate cable (use an extension or a longer cable if necessary). This equipment is identified in boxes on the plans as "LEVEL 3 EQUIPMENT".

2.7 STEP 7: LOADING THE CISCO CONFIGURATIONS

Load the new Cisco configurations (version 8). Load the Cisco for chain A, then B, and lastly the GBB.

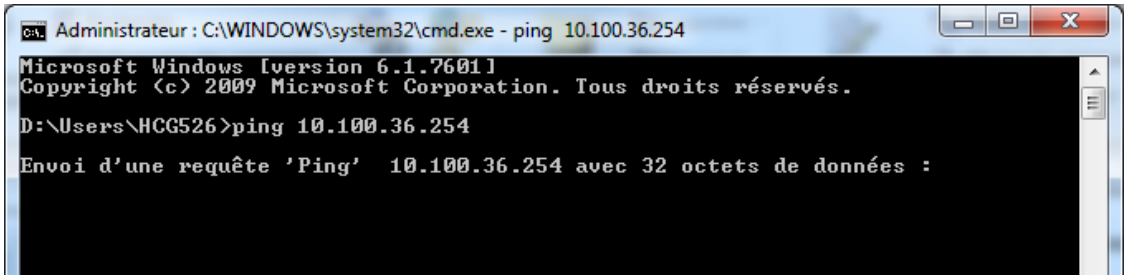
Use appendix 7.3 for help if necessary.

2.8 STEP 8: CONNECTION TESTS THROUGH LEVEL 3

This step involves checking the connection of REDDIG II through the LEVEL 3 network.

From your PC connected to the switch (port 22 for example), or from the monitoring PC, conduct a PING test to Manaus, and then to the sites to which you have ATS-DS hotline communication.

As a reminder, you must open the command prompt (CMD) to conduct this test.



IP address of your PC:
IP: 10.100.XX.200
MASK: 255.255.255.0
Gateway: 10.100.XX.254

Address for Manaus: 10.100.36.254

If this test fails, ensure that Manaus can be reached (ring me!), and then go to appendix 7.4 to start debugging.

2.9 STEP 9: CALL TO MANAUS OR EZEIZA ON THE CONF-CALL NUMBER

Depending upon your zone, use the IP telephone to call Manaus or Ezeiza on the conf-call number:

Manaus: 1111
Ezeiza: 1121

This number will be useful for reaching Manaus and Ezeiza for coordinating tests.

For the sites in Colombia, Ecuador, and Peru, it is recommended, if you have enough time, to carry out the next step (day 2, step 1), or at least to coordinate its execution for the following day as early as possible (as a disconnection is required for the test).

3 DAY 2: TESTS ON THE LEVEL 3 NETWORK

3.1 STEP 1: PRE-TESTS

3.1.1 Sites with the E1 - Columbia, Peru, and Ecuador.

Together with the focal point, under its authorization, disconnect the E1 from REDDIG I and connect it to REDDIG II. It would interrupt the communication, so do it only under its approval.

Check the synchronisation of the E1s.
To cross TE/NT, the command is as follows:

```
Router # conf  t
Router (config)# controller e1 ___      (0/y/z : 0/slot/port)
Router (configure controller)# clock source___  (internal (NT) / line (TE) / free running)
```

Place a call to Manaus, on dial plan 2 (maintenance/admin), at 3601 or 3602.
Receive a call from Manaus on the maintenance line.

Correct the parameters if necessary.

For more E1 setting commands, refer to appendix 7.5.2.

3.1.2 Sites with the E&M:

Select an E&M connection on dial plan 2 (maintenance/admin).
Together with the focal point, if possible, and under its supervision and authorization, disconnect the E&M cable from REDDIG I and connect it to REDDIG II (see file: *Dial peer numbers – rev final.xlsx*)
Place a call to your INEO contact in Manaus on dial plan 2 (maintenance), at 3601 or 3602, or in Ezeiza at 2001.

If the E&M is on dial plan 1, call Manaus at 3612.

Receive a call from Manaus or Ezeiza on the maintenance line (dial plan 2), or on dial plan 1.

If nothing happens, check the wiring (see appendix YYY). An LED should light up on the back side of the Cisco E&M card.

Correct the parameters if necessary.

Some basic E&M commands:

```
Router # conf  t
Router (config)# voice-port ___    (0/y/z : 0/slot/port)
Router(config-voiceport)# ___
       Cptone ___          (defines the ring type by country)
       dial-type ___  (defines the digit modulation type)
                        dtmf—touch-tone dialer
                        pulse—pulse dialer
       impedance ___  (defines the type of impedance)
                        600c
                        600r
                        900c
                        complex1
                        complex2
       operation ___  (defines the type of operation: 2 wire /4 wire)
                        two-wire operation
                        four-wire operation
       signal ___    (defines the signal type)
                        delay-dial
                        immediate
                        wink-start
       type ___  (defines the type of E&M)
                        E&M type I
                        E&M type II
                        E&M type III
                        E&M type V
```

For more E&M setting commands, refer to appendix 7.5.2.

3.1.3 Sites with the FXO:

Select an FXS connection and an FXO on the Cisco.
Connect the FXO to the PBX.
Place a call to check the accuracy of the settings.

3.1.4 LEVEL 3 performance tests

Ping the various sites, one after another.
Send 100 pings, site by site:

Ping 10.100.XX.254 –n 100

Read the min, max, and average delay values, as well as the number of lost packets, and fill in the corresponding section on the PSAT document with the customer, in paragraph 3.2

3.2 STEP 2: TELEPHONE MIGRATION TO DIAL PLAN 2

COORDINATION:

To avoid chaos and calls to everyone, we have identified 4 coordinators on the network. The coordinators will authorise calling by the sites under their authority. Similarly, they will communicate with the other coordinators in the event of line tests out of their zone.

For example, Argentina will coordinate for Argentina, Chile, Paraguay, and Uruguay. Therefore, Argentina will call Uruguay for example, and ask it to call the other countries. In this case, the other countries will await for a call from Uruguay and will not call anyone else (thus, their line will not give a busy signal...).

Dial plan 2 is reserved for maintenance / admin calls.

3.2.1 Pre-migration tests

Disconnect the maintenance telephone from REDDIG I, and connect it to REDDIG II.

Conduct a call test to the other maintenance telephones according to the following hierarchy:

Country	Coordinator
Argentina	Argentina
Bolivia	Recife
Curitiba	Recife
Manaus	Manaus
Recife	Recife
Chile	Argentina
Colombia*	Manaus
Ecuador*	Manaus
Paraguay	Argentina
Peru*	Manaus
Guyana	Venezuela
Guyana	Venezuela
Suriname	Venezuela
Trinidad	Venezuela
Uruguay	Argentina
Venezuela	Venezuela

Sites with E&M will only see the corresponding LED light up.

* Sites with an E1 cannot carry out this test. It will be replaced by AFTN tests between these sites.

Complete the corresponding section (4.1.1) on the PSAT document with the customer.

3.2.2 Migration

Migrate the services according to the same hierarchy, and test.

Complete the corresponding section (4.1.2) on the PSAT document with the customer.

3.3 STEP 3: ATS-DS (HOTLINE) MIGRATION

3.3.1 Pre-migration tests

Conduct a call test to the other telephones according to the following hierarchy:

Country	Coordinator
Argentina	Argentina
Bolivia	Recife
Curitiba	Recife
Manaus	Manaus
Recife	Recife
Chile	Argentina
Colombia*	Manaus
Ecuador*	Manaus
Paraguay	Argentina
Peru*	Manaus
Guyana	Venezuela
Guyana	Venezuela
Suriname	Venezuela
Trinidad	Venezuela
Uruguay	Argentina
Venezuela	Venezuela

Sites with E&M will only see the corresponding LED light up.

* Sites with an E1 cannot carry out this test.

Complete the corresponding section (4.2.1) on the PSAT document with the customer.

3.3.2 Migration

Migrate the services according to the same hierarchy. Do not migrate the ATS-DS to Peru, Colombia, or Ecuador. Test.

Complete the corresponding section (4.2.2) on the PSAT document with the customer.

3.4 STEP 4: TELEPHONE MIGRATION TO DIAL PLAN 1 (ATS)

Dial plan 1 is reserved for ATS calls, to be dialled. For sites with an E1, a service interruption must be planned (alert those responsible).

3.4.1 Pre-migration tests

Conduct a call test to the other telephones according to the following hierarchy:

Country	Coordinator
Argentina	Argentina
Bolivia	Recife
Curitiba	Recife
Manaus	Manaus
Recife	Recife
Chile	Argentina
Colombia	Manaus
Ecuador	Manaus
Paraguay	Argentina
Peru	Manaus
Guyana	Venezuela
Guyana	Venezuela
Suriname	Venezuela
Trinidad	Venezuela
Uruguay	Argentina
Venezuela	Venezuela

Sites with E&M will only see the corresponding LED light up. Telephones through E1 cannot be pre-tested.

Complete the corresponding section (4.3.1) on the PSAT document with the customer.

3.4.2 Migration

Migrate the services according to the same hierarchy. Provide as much assistance as possible with the migration of Peru, Columbia, and Ecuador, as they must migrate all of their services at once.
Test.

Complete the corresponding section (4.3.2) on the PSAT document with the customer.

3.5 STEP 5: AFTN AND METEO (WEATHER) MIGRATION

Here, only AFTNs and METEO will be migrated, do not migrate RADARS for SUMU and SAEZ.

AFTN tests must be conducted using the serial/USB adapters provided or COM port 1 on the monitoring PC:

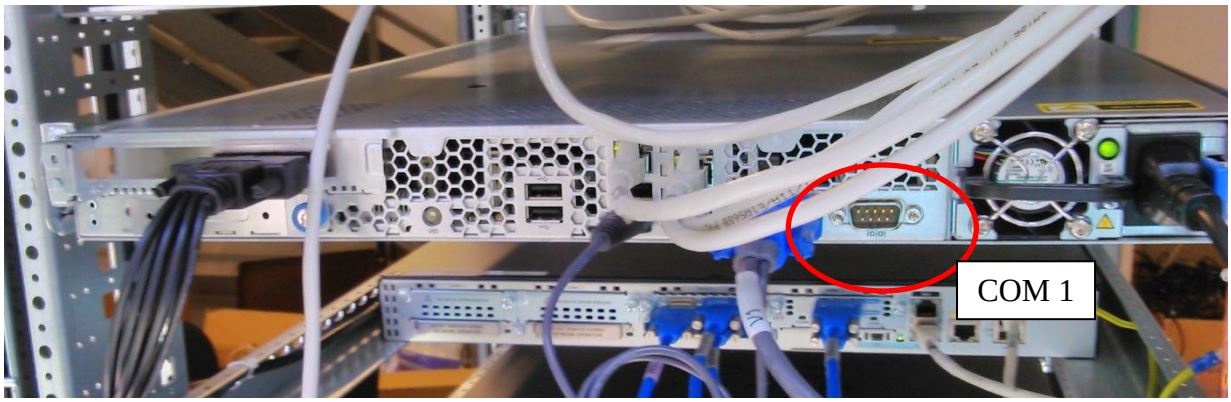


Figure 7 - monitoring PC - COM port 1

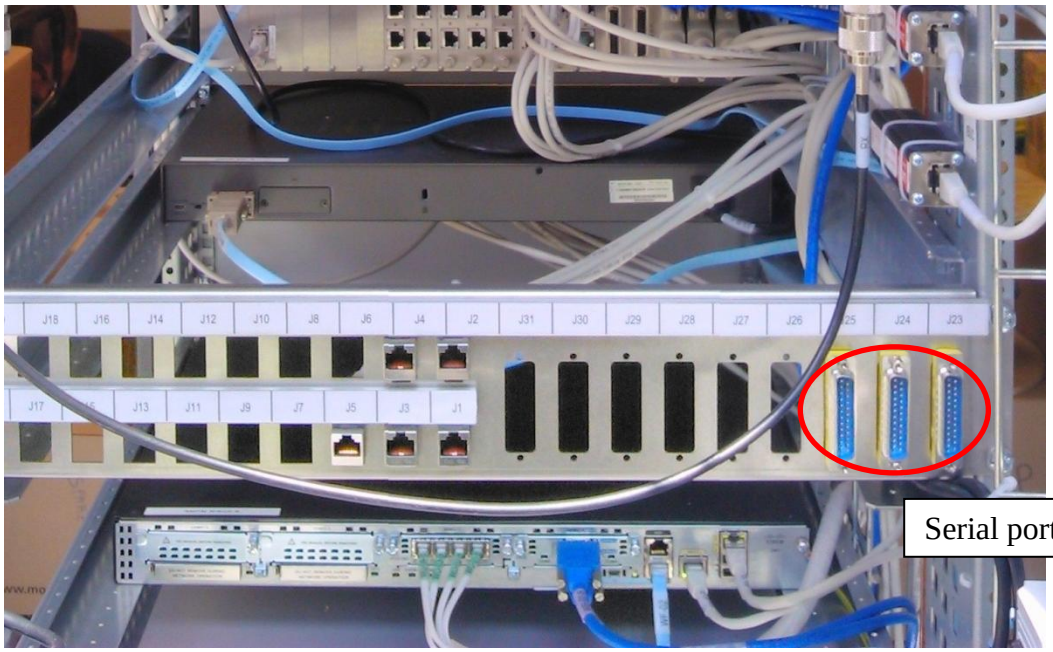
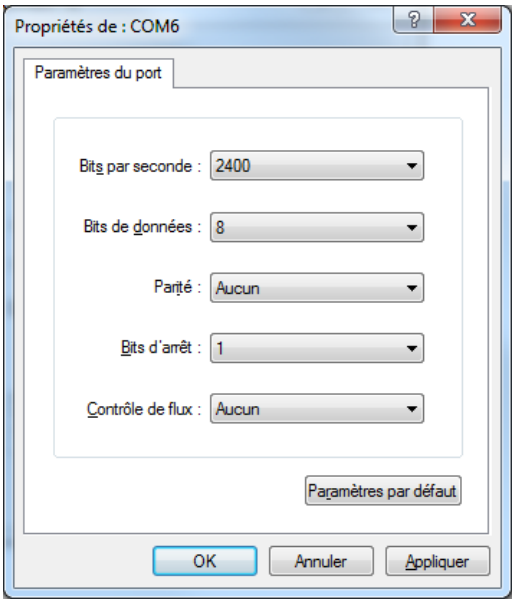


Figure 8 - View of the AFTN ports

Use hyperterminal for asynchronous data transfer.

The port uses 8 data bits, no parity or flow control bits, 1 stop bit (configuration 8/N/1), typically at 2400 bps, but pay special attention as this depends upon the connection.



Configure the connection as follows:

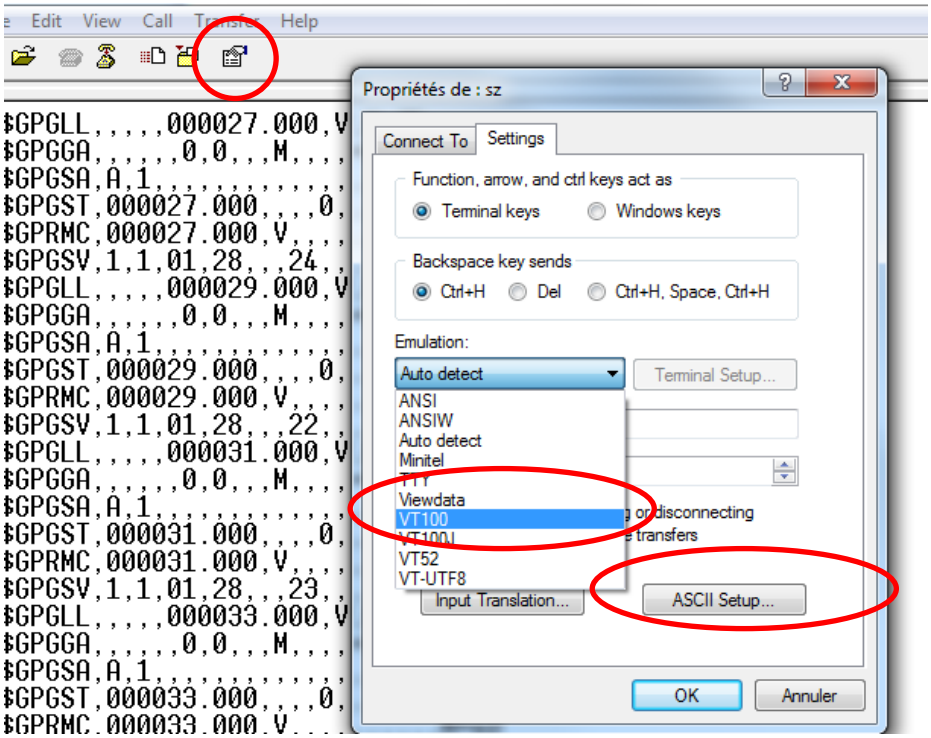


Figure 9 - Hyperterminal Configuration - AFTN

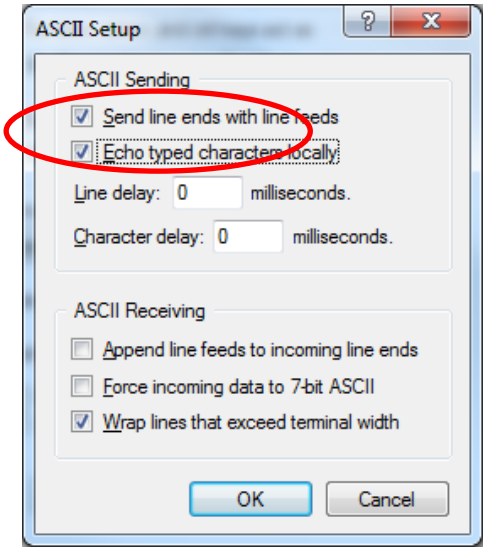


Figure 10 - HT Configuration - ASCII

The parameter, "echo typed character locally" will display what you are typing in the window.

Once a session has been opened, you can type text, which will be received on the other end.

Use the dialpeer.xls file to identify the various connections and their speeds.

3.5.1 Pre-migration tests

Conduct a test in hyperterminal by coordinating according to the following hierarchy:

Country	Coordinator
Argentina	Argentina
Bolivia	Recife
Curitiba	Recife
Manaus	Manaus
Recife	Recife
Chile	Argentina
Colombia*	Manaus
Ecuador*	Manaus
Paraguay	Argentina
Peru*	Manaus
Guyana	Venezuela
Guyana	Venezuela
Suriname	Venezuela

Trinidad	Venezuela
Uruguay	Argentina
Venezuela	Venezuela

The coordinator will indicate which site should transmit, and thus the other sites will connect to the corresponding port.

Complete the corresponding section (4.4.1) on the PSAT document with the customer.

3.5.2 Migration

Migrate the services according to the same hierarchy, and test.

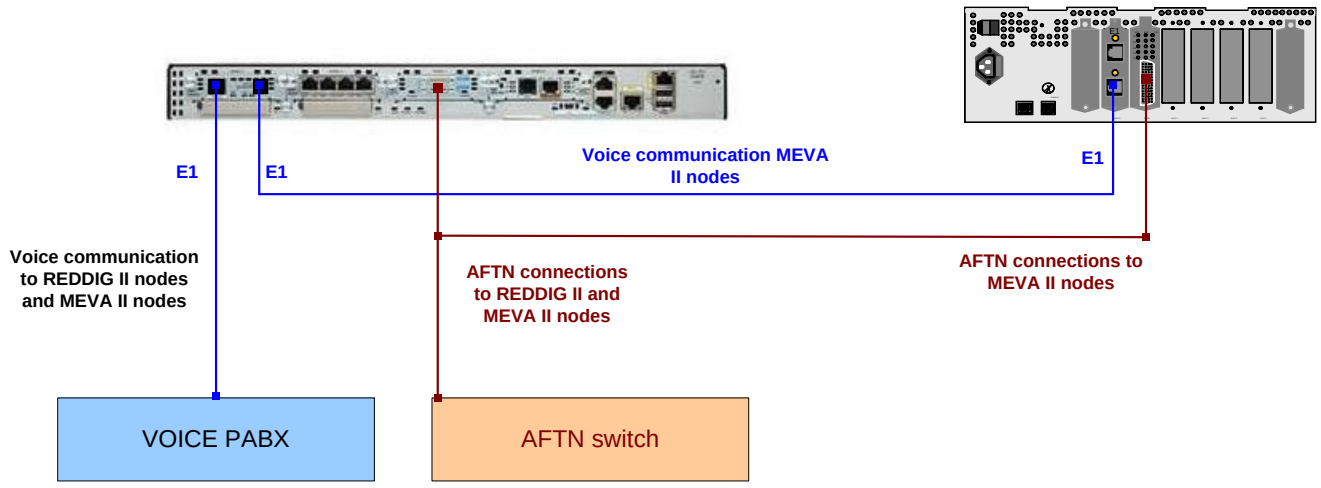
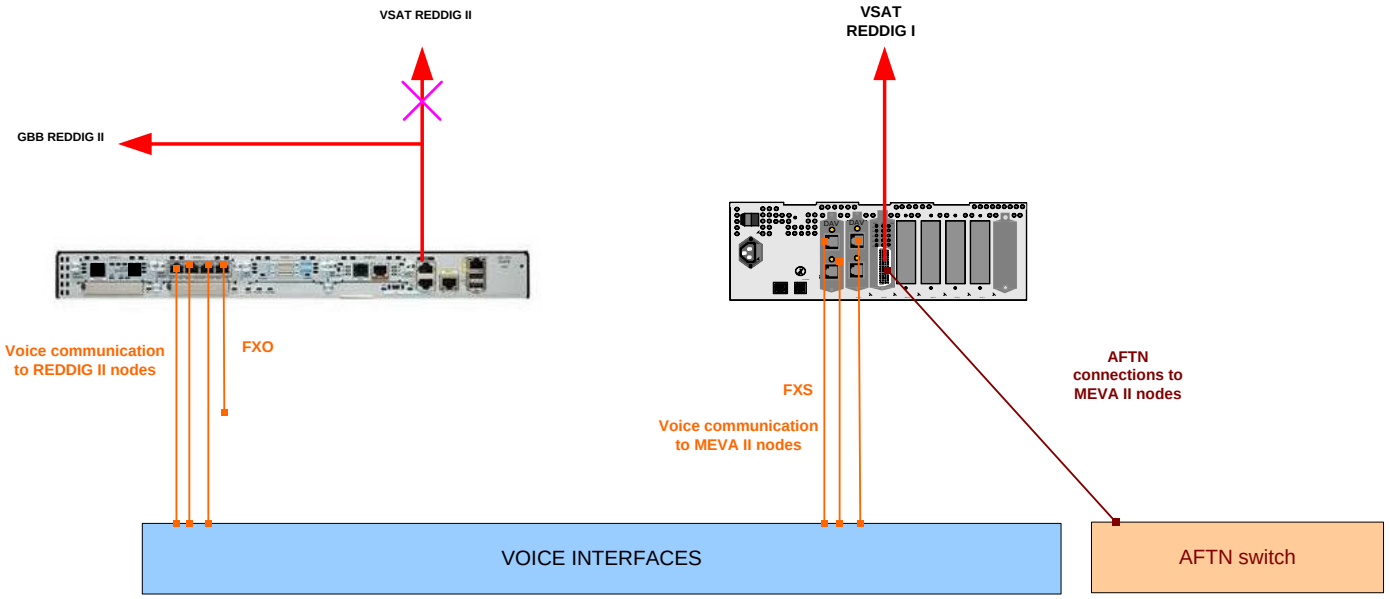


Figure 11 – Bogota

Colombia: migrate the MEVA connection from Atlanta (KATL) to REDDIG II.



Venezuela: leave the MEVA connections on the Memotec CX.

Complete the corresponding section (4.4.2) on the PSAT document with the customer.

3.6 STEP 6: MIGRATION OF THE AMHS

The customer must modify the AMHS for the migration. **Therefore, a PC to PC test must be conducted before the migration, to show that the link is valid.**

3.6.1 Pre-migration tests

1) Connect to Netgear switch A, select a port to which nothing is connected, and modify the port to accept AMHS (VLAN 100):
   - On the VLAN 100, assign the port to Untagged "U"
   - On the PVID part, assign the VLAN 100 to this port.

   For help, refer to the user manual for the Netgear switch.
2) Configure your computer to be on the AMHS network (see dial plan), without giving it a gateway. Your IP address will end in .200.
3) Then ping the gateway (.254). It should respond.
4) Then configure the gateway and ping the gateway of one of the REDDIG sites.
   If this does not work, conduct a trace route (tracert) to the remote site and check the routing tables (see appendices 7.4.4 and 7.4.5)
5) Ping another REDDIG II PC; coordinate according to the standard table as necessary.

Complete the corresponding section (4.5.1)on the PSAT document with the customer.

3.6.2 Migration

1) Ask the customer to load the configuration for its router, in accordance with the addressing plan.
2) Once loaded, connect it to the "IP service" port through the patch panel.
3) Conduct a connection test with a ping, coordinating in the standard way:

Country	Coordinator
Argentina	Argentina
Bolivia	Recife
Curitiba	Recife
Manaus	Manaus
Recife	Recife
Chile	Argentina

Colombia*	Manaus
Ecuador*	Manaus
Paraguay	Argentina
Peru*	Manaus
Guyana	Venezuela
Guyana	Venezuela
Suriname	Venezuela
Trinidad	Venezuela
Uruguay	Argentina
Venezuela	Venezuela

4) Ask the customer to validate with an AMHS file transfer.

Complete the corresponding section (4.5.2)on the PSAT document with the customer.

3.7 STEP 7: RADAR MIGRATION – SUMU AND SAEZ

The RADAR ports are DB25. They are planned to be transported in BSTUN (BiSync).

Migrate these ports simultaneously between SUMU and SAEZ.
Check with the customer to ensure the system is operating properly.

Complete the corresponding section (4.6.1) on the PSAT document with the customer.

3.8 STEP 8: RADAR IP TESTS

1) Connect to Netgear switch A, select a port to which nothing is connected, and modify the port to accept AMHS (VLAN 101):
   - On the VLAN 101, assign the port to Untagged "U"
   - On the PVID part, assign the VLAN 101 to this port.

   For help, refer to the user manual for the Netgear switch.
2) Configure your computer to be on the AMHS network (see dial plan), without giving it a gateway. Your IP address will end in .200.
3) Then ping the gateway (.254). It should respond.
4) Then configure the gateway and ping the gateway of one of the REDDIG sites.
   If this does not work, conduct a trace route (tracert) to the remote site and check the routing tables (see appendices 7.4.4 and 7.4.5)
5) Ping another REDDIG II PC; coordinate according to the standard table as necessary.

Complete the corresponding section (4.5.1)on the PSAT document with the customer.

3.8.1 Activating the tunnels corresponding to the tests

The RADAR tunnels have the same interface number as the site to which they go. Thus, a tunnel to Argentina SAEZ will have interface number 20. To Bolivia SLLP, 25, etc.

Thus, one can activate or deactivate tunnel interfaces:

```
Router # conf  t
Router (config)# interface tunnel XX
Router (config-if)#shut (deactivate)
Router (config-if)#no shut (activate)
```

Activate the tunnels site by site, depending upon the tests to be conducted, on all of the Ciscos (A, B, and GBB).
Once the test has been conducted, deactivate the tunnel. Preferably, only have tunnels open to a single site at one time.

Complete the corresponding section (4.6.2)on the PSAT document with the customer.

3.9 STEP 9: IT IS TIME TO GO HAVE A BEER (OR SOMETHING ELSE)

4 DAY 3: FINALISING INSTALLATION OF THE OUTDOOR PART

At this point, the services (excluding MEVA) should be functioning on the LEVEL 3 network. Therefore, the VSAT antenna may be turned off. Thus, it is possible to make the equipment replacements next to the antenna.

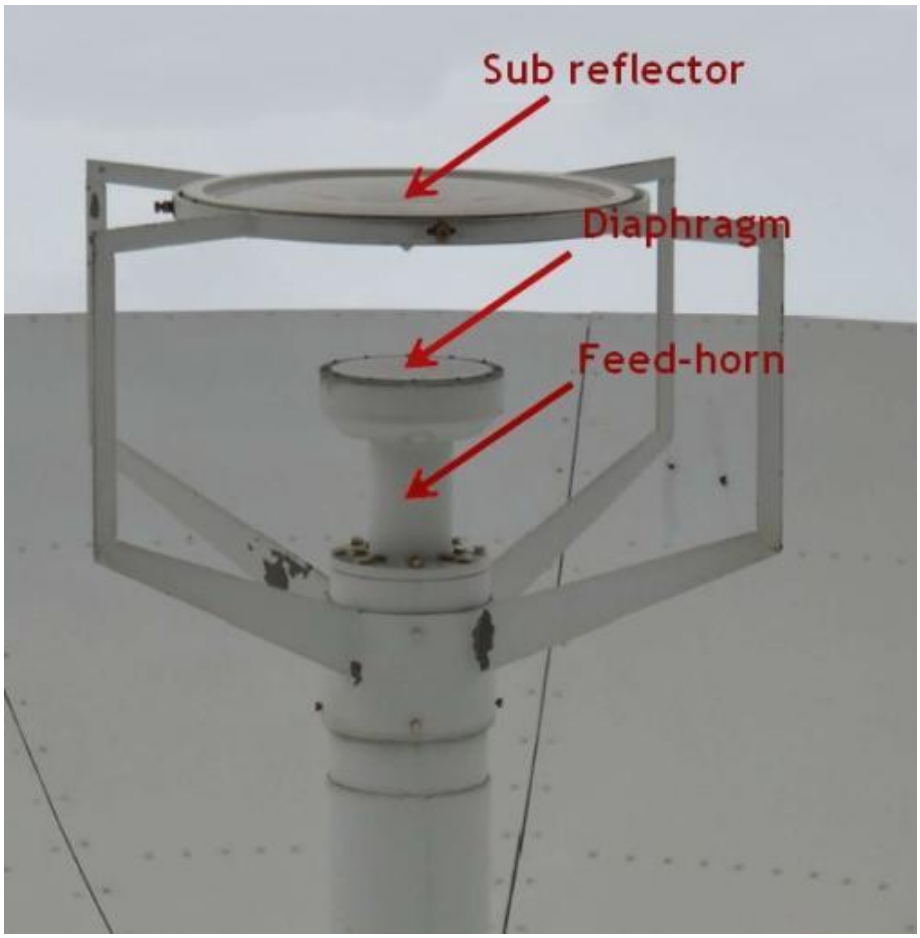
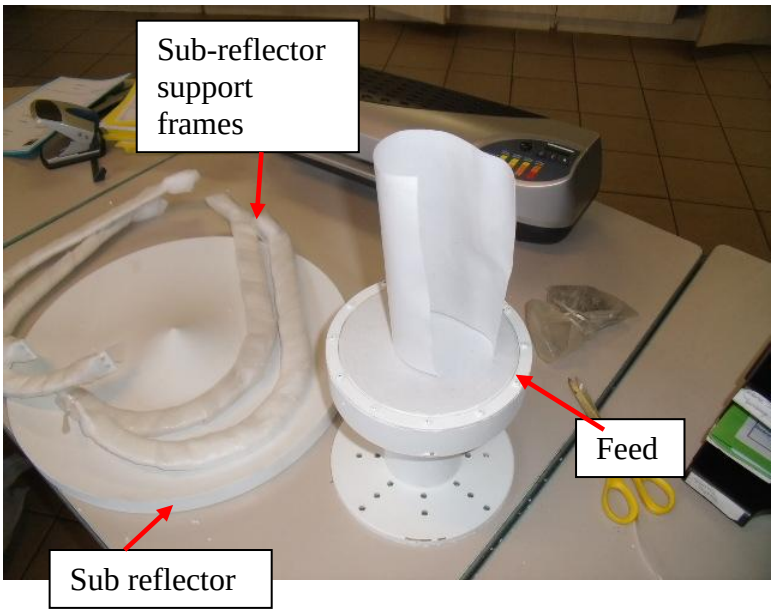


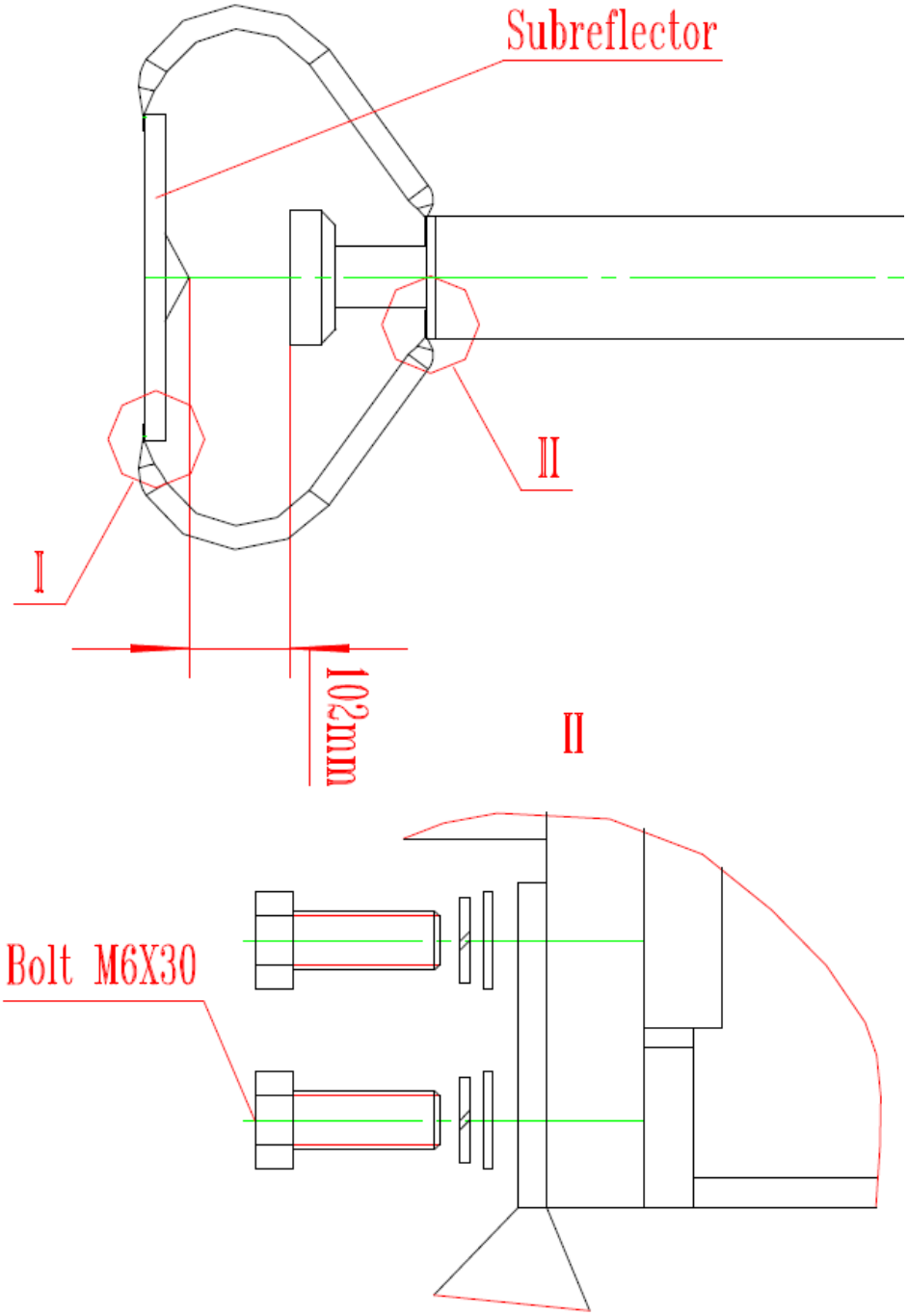
Figure 12 – View of the source

4.1 STEP 0-A: REPLACING THE SOURCE

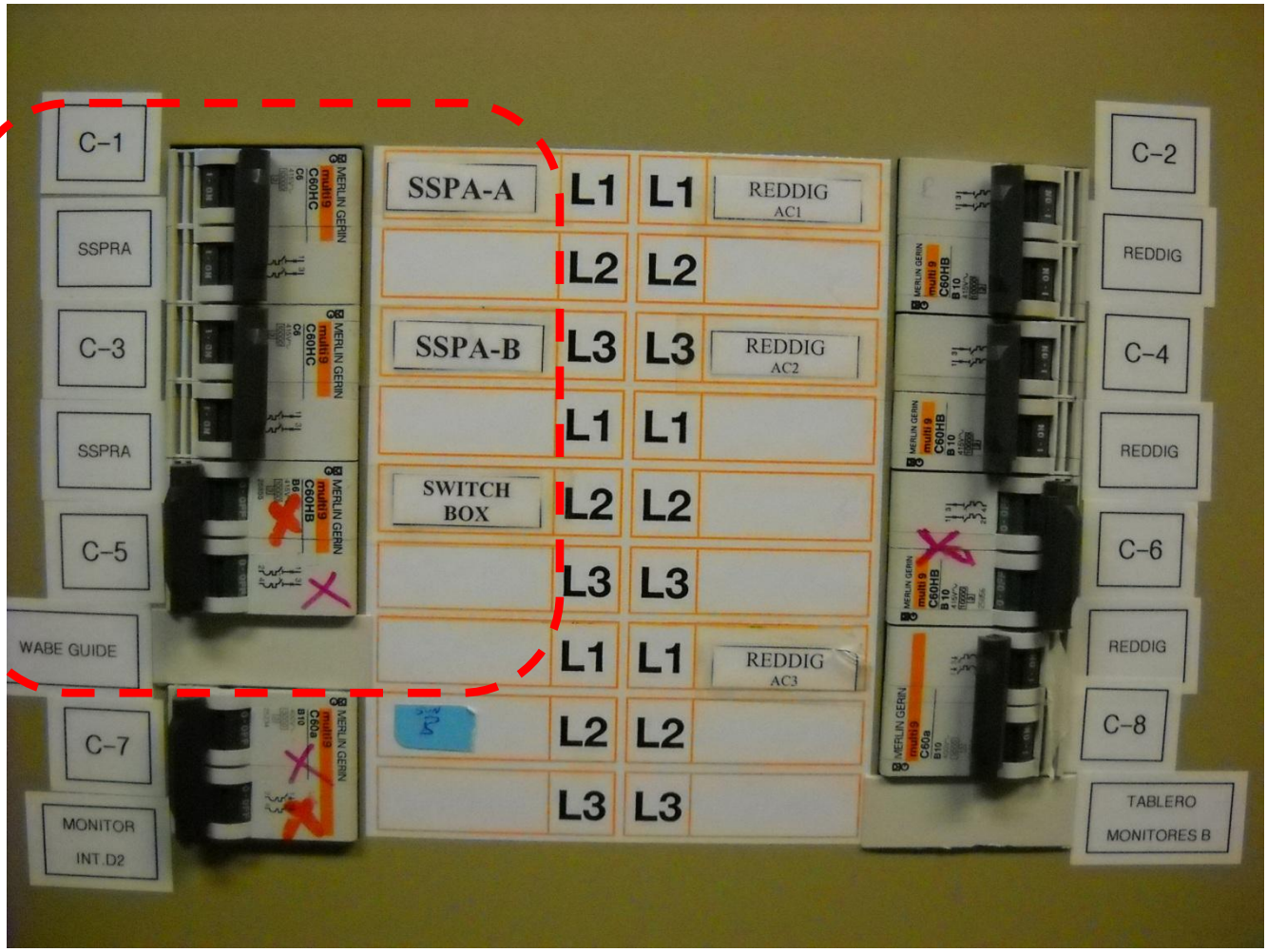
1) Assemble the source



Mount the Sub reflector on the feed using the frames and screws:



2) Turn off the amplifiers (SSPA A and B) and the existing outdoor box (switch box – waveguide) at the electrical panel. If possible, lock it out.



3) Do not forget you safety harness and hard hat.

4) With the resources defined in paragraph 2.2, access the inside of the dish (or have someone else do so).

5) Bring the new source and its tools with you too (penetrating oil, hex keys, open-ended spanners, and tubular socket wrenches).

6) Use a pencil to draw a line on the existing source and its axis to identify the original position of the source (normally there is a circular guide on the inside). Thus, if it was turned, you will not see one line, but two unaligned segments.

7) Remove the existing source.

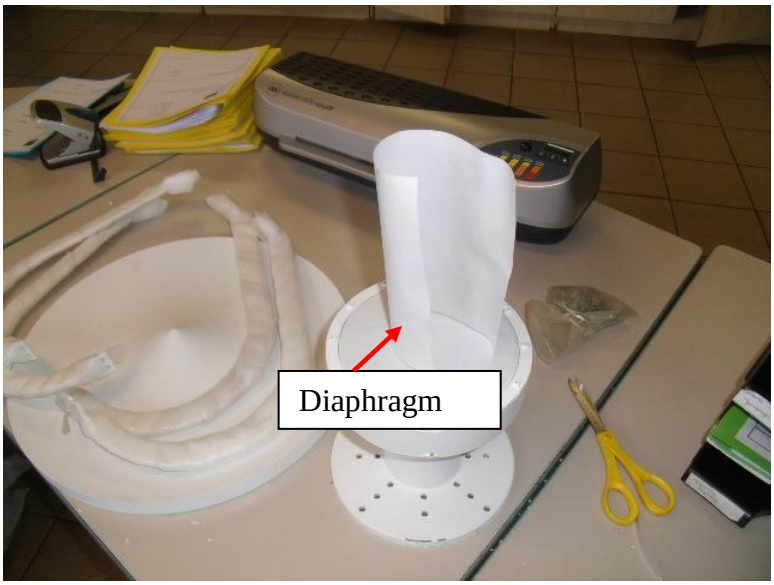
8) If necessary, dry the tube (clean dry cloth, and if you have it, an air can).

9) Replace the old source with the new one.

Complete the corresponding section (5.1.1) on the PSAT document with the customer.

4.2 STEP 0-A: REPLACING THE DIAPHRAGM

1) Turn off the existing SSPAs.
2) **Do not forget you safety harness and hard hat.**
3) With the resources defined in paragraph 2.2, access the inside of the dish (or have someone else do so).
4) Bring tools with you (penetrating oil, hex keys, open-ended spanners, tubular socket wrenches, and scissors), and something to protect the source temporarily (plastic bag that can be sealed and tape).



5) Use a pencil to draw a line on the existing source and its axis to identify its original position.
6) Remove the upper part of the existing source and take out the old diaphragm.
7) Come down off the antenna, with the old diaphragm and upper part of the feed.
8) Cut the new diaphragm to match the old one.
9) Go back onto the antenna and re-attach everything.

Complete the corresponding section (5.1.1) on the PSAT document with the customer.

4.3 STEP 1: ASSEMBLING THE LNBS ON THE WAVEGUIDE SWITCH

1) Take the LNBs, rectangular seals, Prematex lubricant, and spray grease/silicone (to complete the insulation).

2) Verify that all equipment is dry.

For each LNB,

1) Spray the round seal (if there is a groove on the LNB and on the waveguide) or the half-moon seal (if there is a groove on only one piece of equipment).
2) Insert the seal into the groove
3) Attach the LNB to the waveguide switch (ports 1 and 3)

4.4 STEP 2: ATTACHING THE LNBS TO THE SOURCE

Except for the special case of Paraguay, the LNB is accessed through the trap door behind the antenna body.

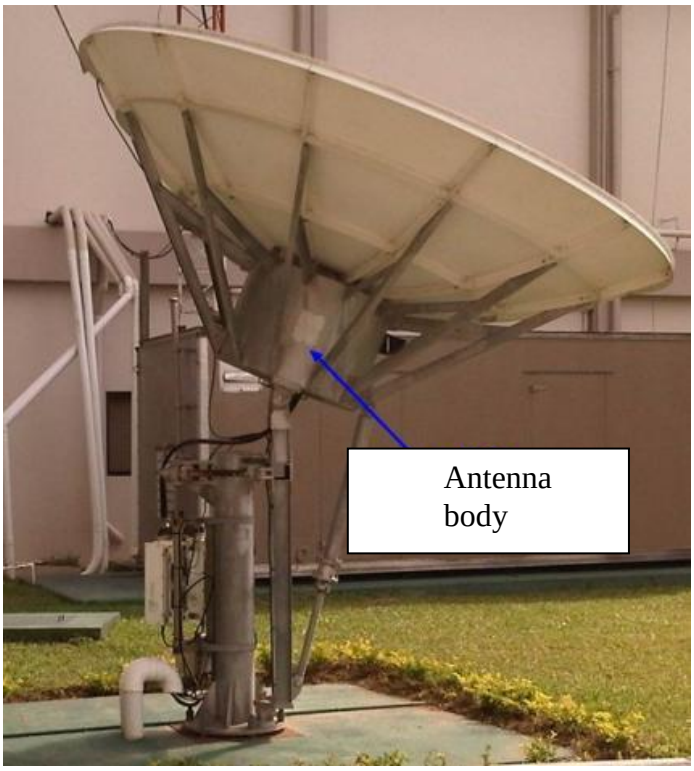
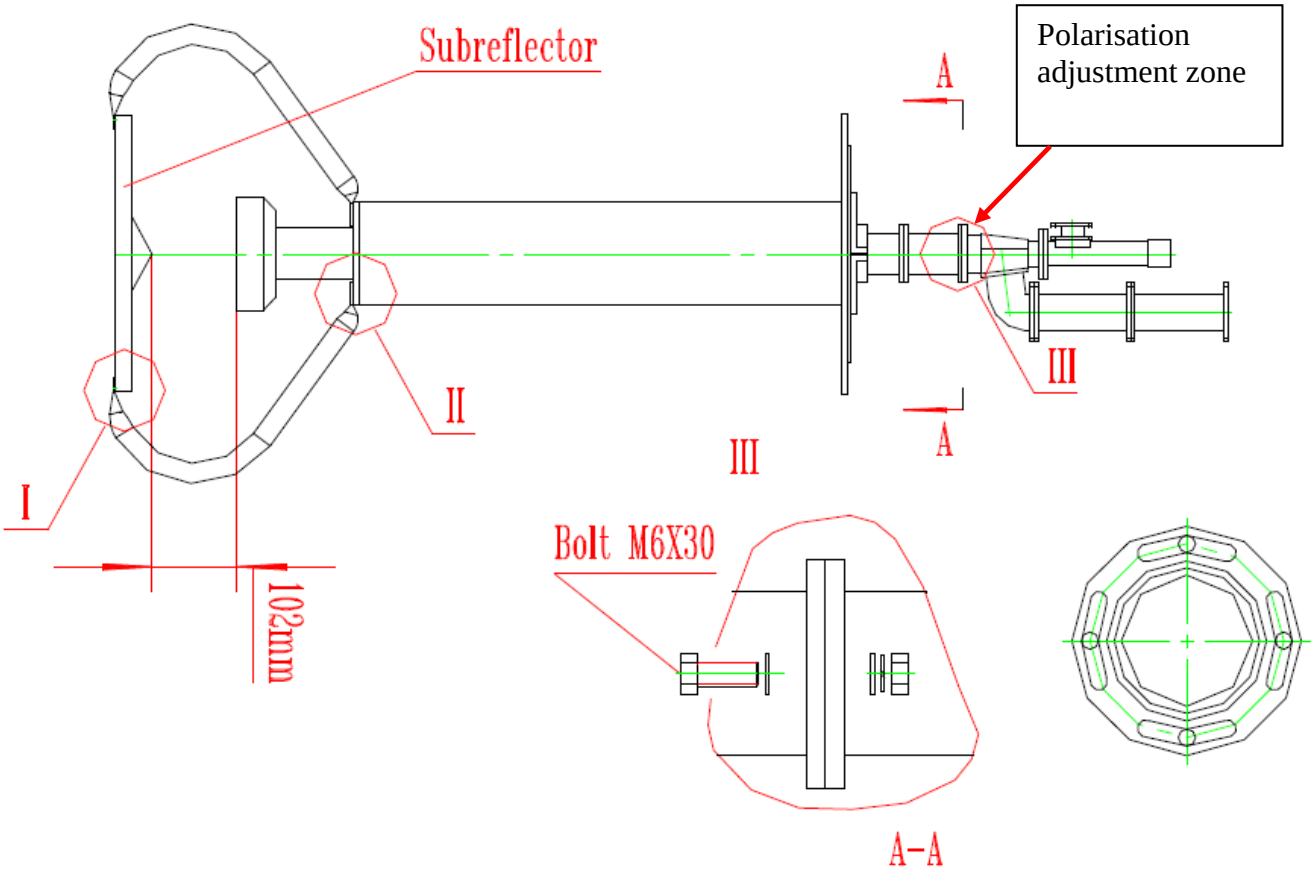
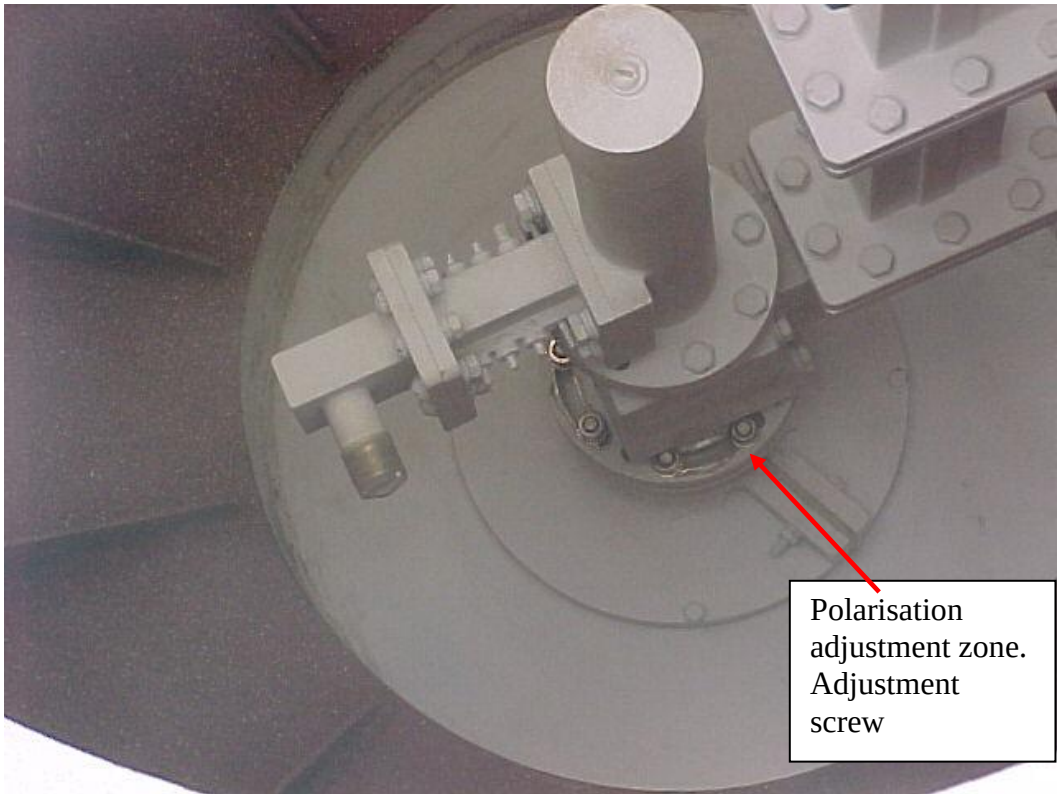


Figure 13 - View of the antenna body

Do not turn the existing source. A polarity test will be conducted, so if you do not move the source, you will have nothing to do (except those who will replace it).

For information, the screws used to modify the polarisation are as follows:


Subreflector
A
Polarisation adjustment zone
III
II
I
III
A
102mm
Bolt M6X30
A-A


Polarisation adjustment zone. Adjustment screw

1) Remove the existing waveguide switch and LNBs
2) Identify the groove type (groove or no groove) on the source
3) Dry the waveguide if necessary
4) Clean the groove
5) Prepare the screws as in paragraph 4.3
6) In **Lima**, identify the groove type on the waveguide filter
7) Depending upon the grooves, prepare a rectangular seal (half-moon or round), spray it, and assemble the switch + LNB (and the filter in Lima) on the source as follows:

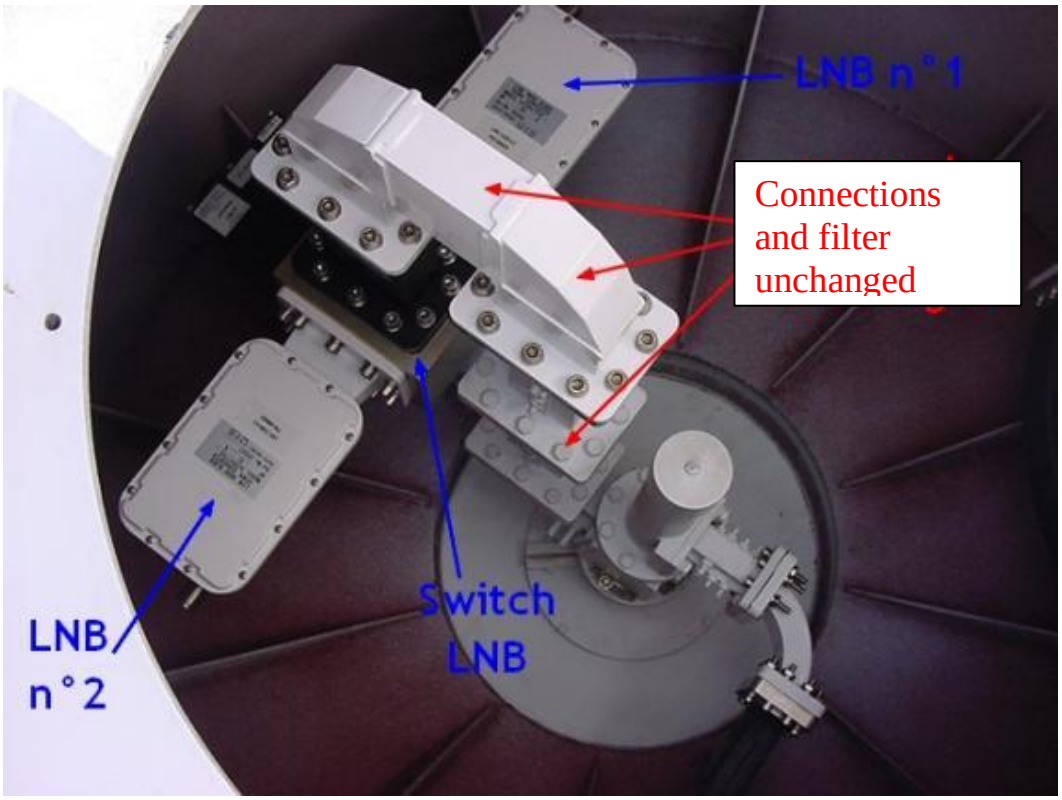
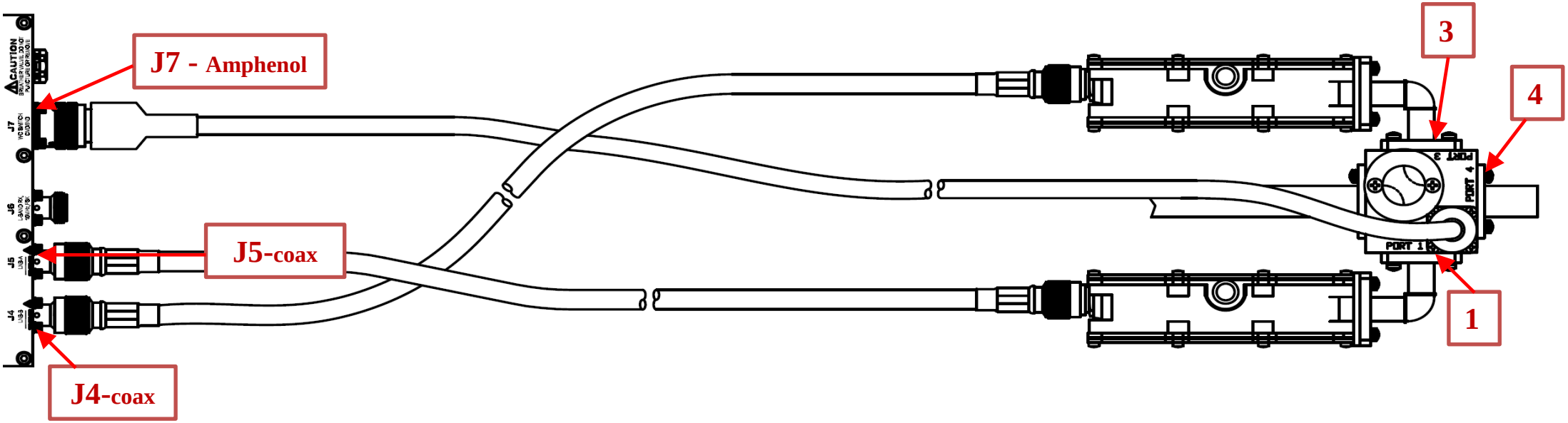


Figure 14 - Replacing LNBs

4.5 STEP 3: INSTALLING CABLES ON THE LNBS

4.5.1 Connecting the coaxial and switch cables

Connect the coaxial cables to the LNBs and the Amphenol to the waveguide switch.

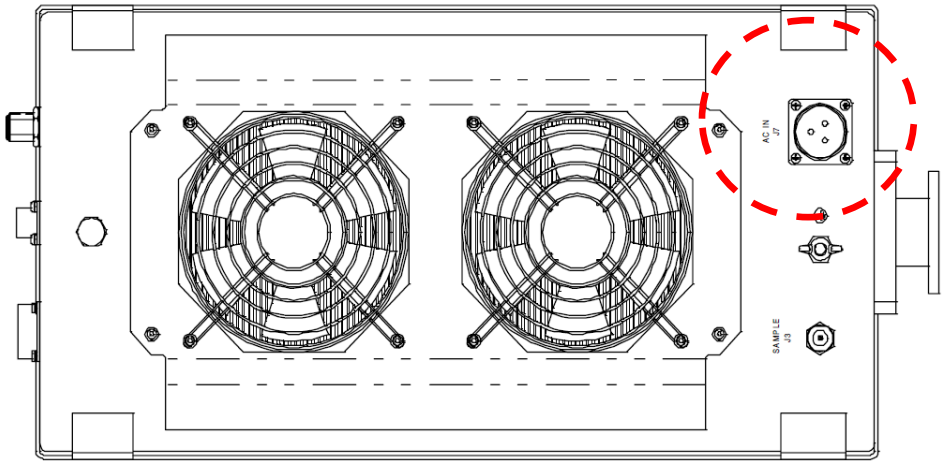


4.6 STEP 4: CONNECTING THE POWER SUPPLY

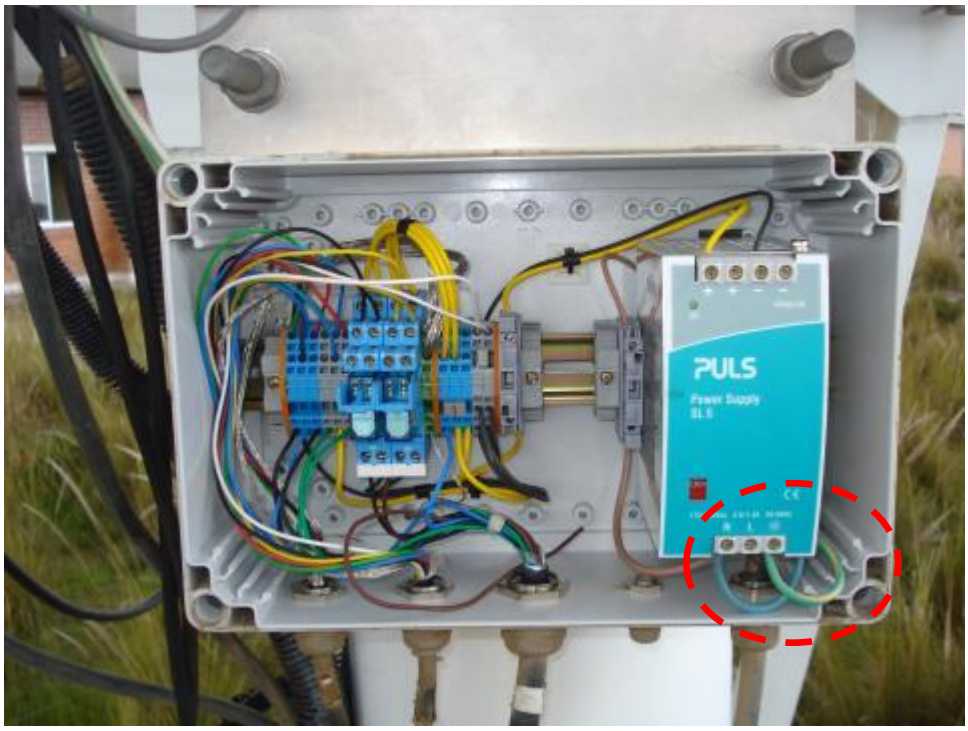
1) Verify that the circuit breakers in 4.1 are in fact open (off).

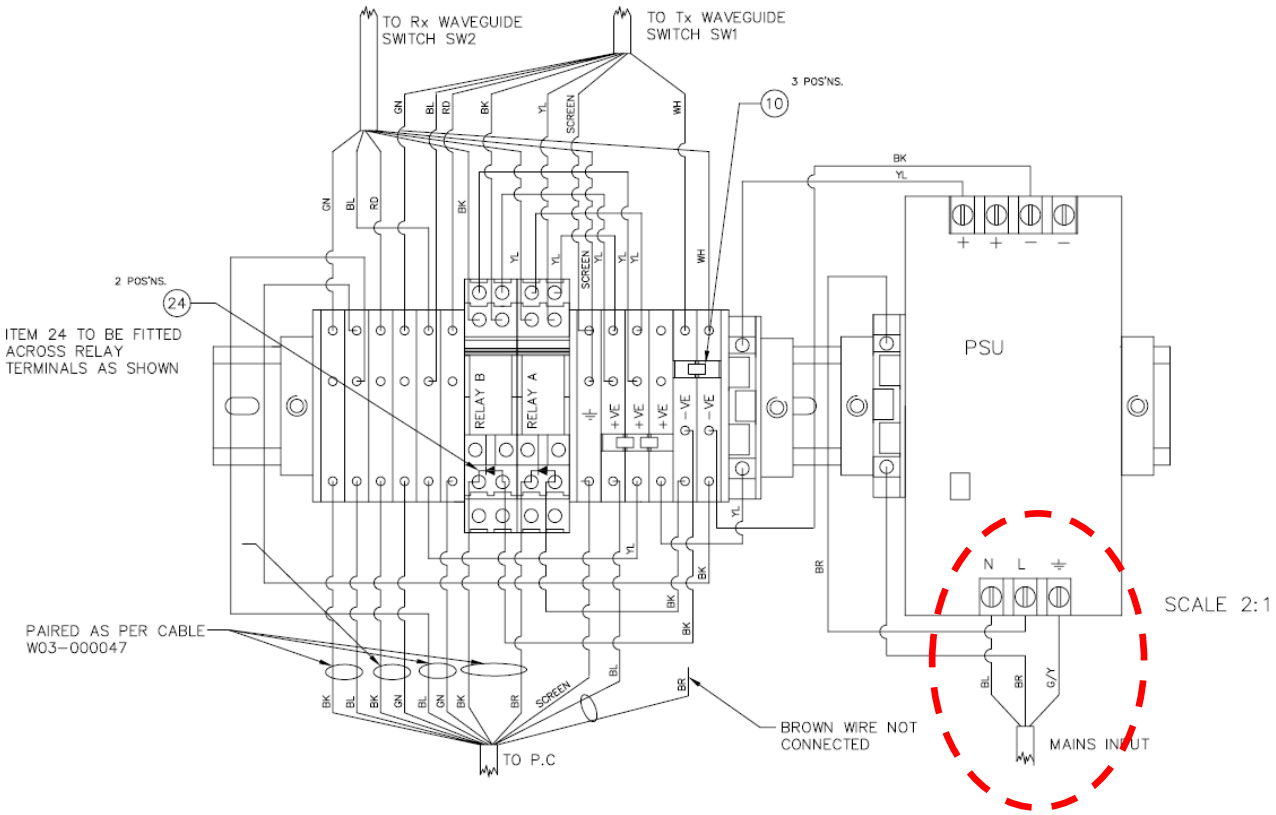
2) Disconnect the old power supply cables

At the SSPAs, disconnect the power supply cable (J7).



At the electrical panel, disconnect the 220V AC power supply cable.





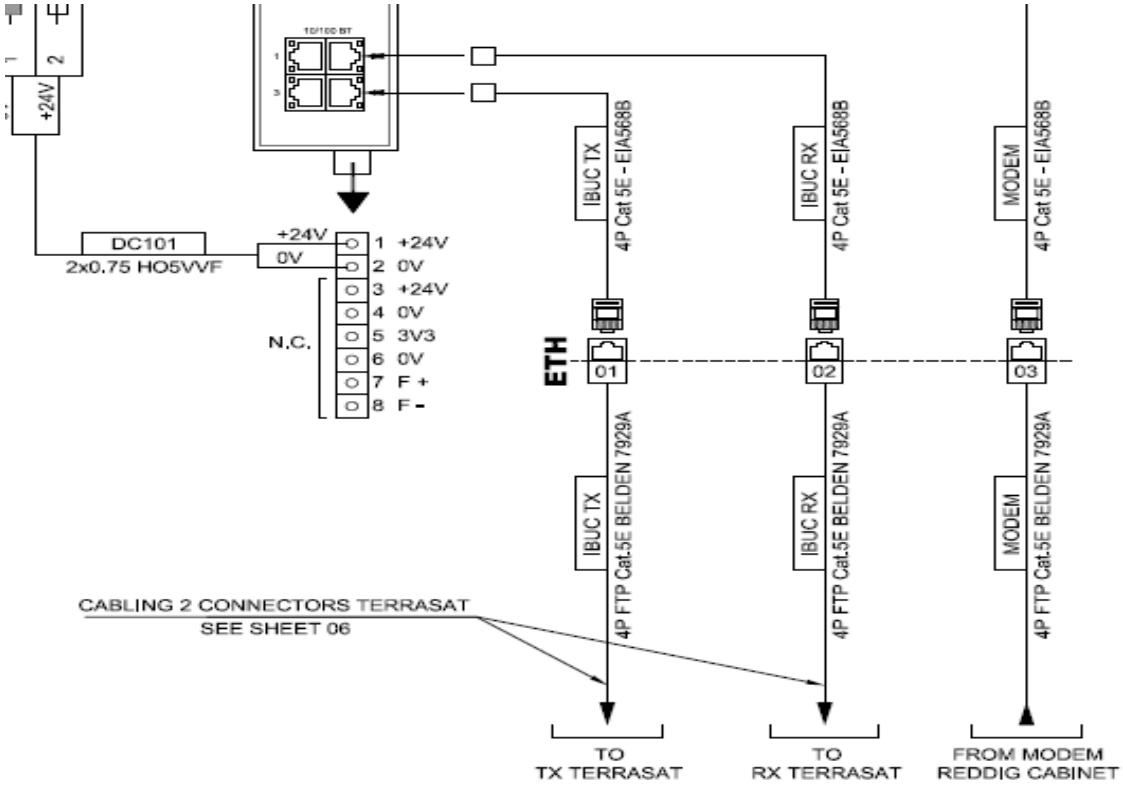
3) With the multimeter, verify that there is no voltage on the three cables.

4) Prepare terminations for the two IBUCs

With these same cables, connect the three plugs to the Terrasat power supply cables.
To do so, refer to the "IBUC power supply adapter connection procedure" in appendix 7.7.2.

5) Prepare terminations for the RX 1+1.

For Brazil, connect the cable coming from the electrical panel (above) **to the IP re-transmitter.** With the 3m power supply cable provided, put a termination on one side with the Terrasat connector and plug it into the RX1+1, and plug the other side into the IP re-transmitter:


+24V
DC101
2x0.75 HO5VVF
+24V
0V
1 +24V
2 0V
3 +24V
4 0V
5 3V3
6 0V
7 F +
8 F -
N.C.
ETH
01
02
03
IBUC TX
IBUC RX
MODEM
4P Cat 5E - EIA568B
4P FTP Cat.5E BELDEN 7929A
CABLING 2 CONNECTORS TERRASAT
SEE SHEET 06
TO
TX TERRASAT
TO
RX TERRASAT
FROM MODEM
REDDIG CABINET

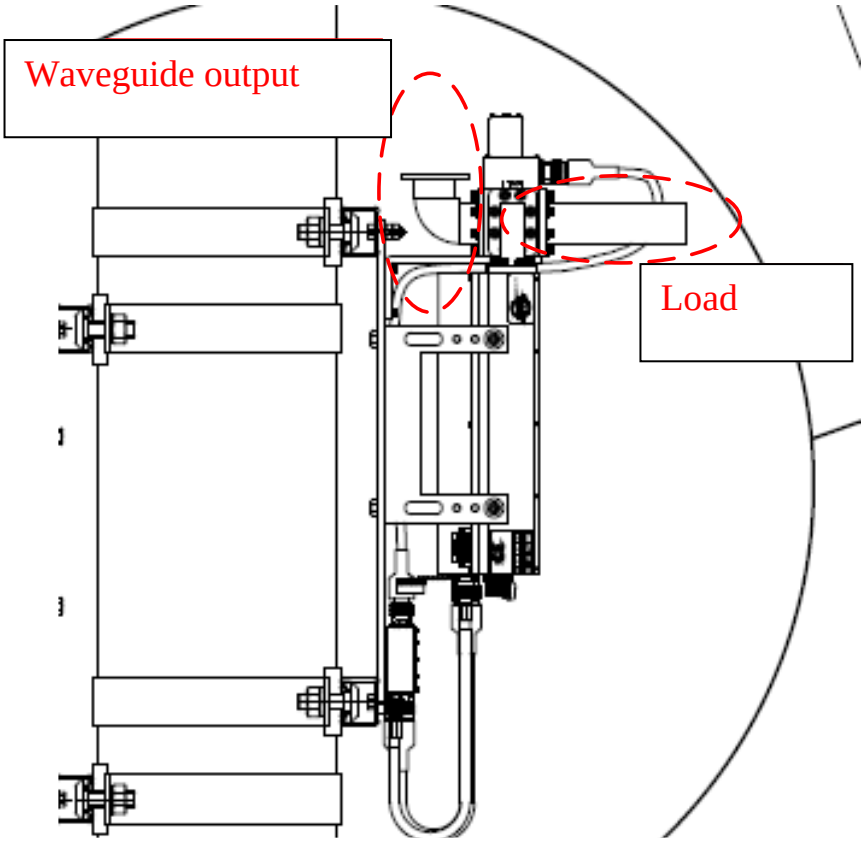
4.7 STEP 5: INSTALLING THE WAVEGUIDE

The internal waveguide (in the antenna body) remains unchanged. Only change the one that extends out of the access wall to the antenna body, to the IBUC:

Figure 15 - View of the waveguide to be replaced

1) Prepare the new waveguide and the rectangular Terrasat seal kit included in the IBUC carton:

2) Prepare the screws with lubricant.
3) Disconnect the old waveguide
4) Clean the surface to which the new waveguide will be connected.
5) Use an appropriate seal (it is smaller than the LNB seal), spray it, and attach the waveguide to the antenna pillar.
6) On the IBUC TX 1+1 side, remove the temporary protection from the waveguide switch and install the guide opposite the load, with the standard protective measures (seal, screws, etc.):


Waveguide output
Load

4.8 STEP 6: CONNECTING THE CABLES

4.8.1 IBUC – TX 1+1

1) Connect the coaxial cable to J6

2) Connect both power supply cables
3) Connect the Belden, Amphenol data cable to J3:

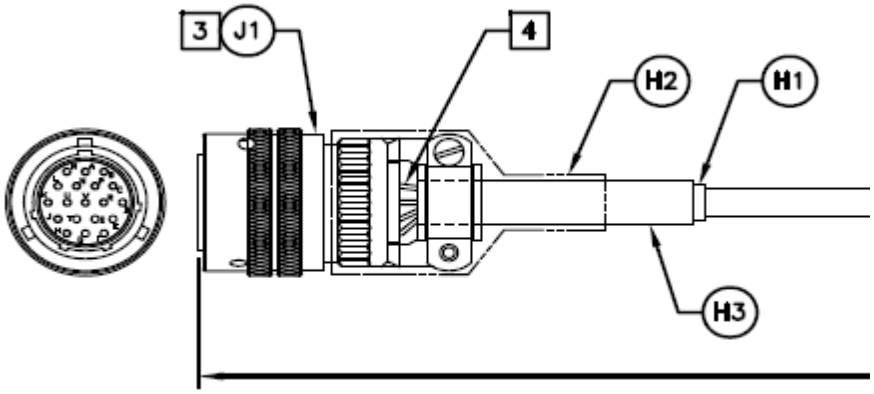
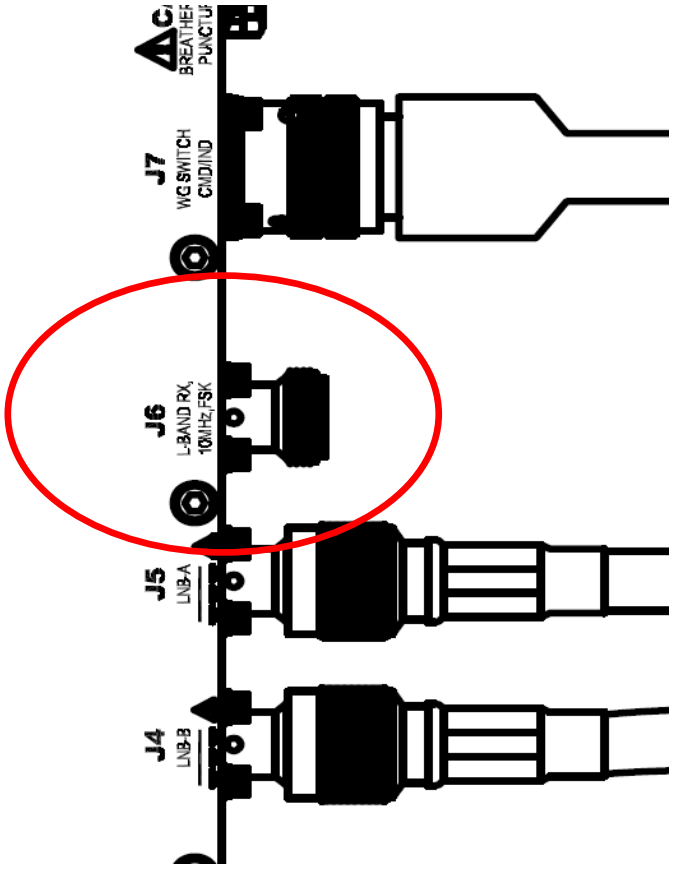


Figure 16 - Amphenol data cable

4.8.2 RX 1+1

1) Connect the coaxial cable from the bay to "L-Band RX" connector J6:



Do not finalise the moisture protection measures; wait until the tests and power-up procedures have been completed. Temporarily protect the cables with tape.

2) Connect the power supply cable – FOR BRAZIL

In Brazil, there is an IP re-transmitter. Provide power to the IP re-transmitter by

2) Other sites: connect the power supply cable

4.9 STEP 6: POWER-UP AND CONFIGURATION PROCEDURE

4.9.1 Power-up procedure

Turn on power to the equipment by closing the circuit breakers that were opened earlier.

4.9.2 Temporary configuration

Using the hand held terminal, temporarily configure the RX 1+1 and both IBUCs:

Figure 17 - Handheld terminal

1) Connect it to the IBUCs, on J1 for IBUC A and J8 for IBUC B, and on J1 for the RX 1+1.
2) A block will blink. Press the "." button four times
3) When prompted, enter the password, "1234"
4) Navigate through the menus with the left and right arrows, and through the sub-menus with the up and down arrows.
5) For the IBUCs, go to the "TX" menu, then to the "Tx On/off" sub-menu and select Off (memory button 2...).
6) On the "interface" menu, enter the following IP addresses:

IBUC A: 10.100.xx.41
IBUC B: 10.100.xx.42
RX1+1: 10.100.xx.43

Mask 255.255.255.0
Gateway: 10.100.XX.254

4.9.3 Finalising the connection

1) Connect the Belden Amphenol data cable to the RX 1+1 on J1.
2) Return to the room in which the bay is located.
3) From the monitoring PC or your computer, ping the equipment.

If it does not work, check the gigamedia (see paragraph 2.1.1) and lightning connector connections, then check the IP configuration on the equipment. If necessary, you have a TCP/IP test cable from Terrasat:

Take your laptop and the cable, go to the antenna, and verify that you are able to send a ping.

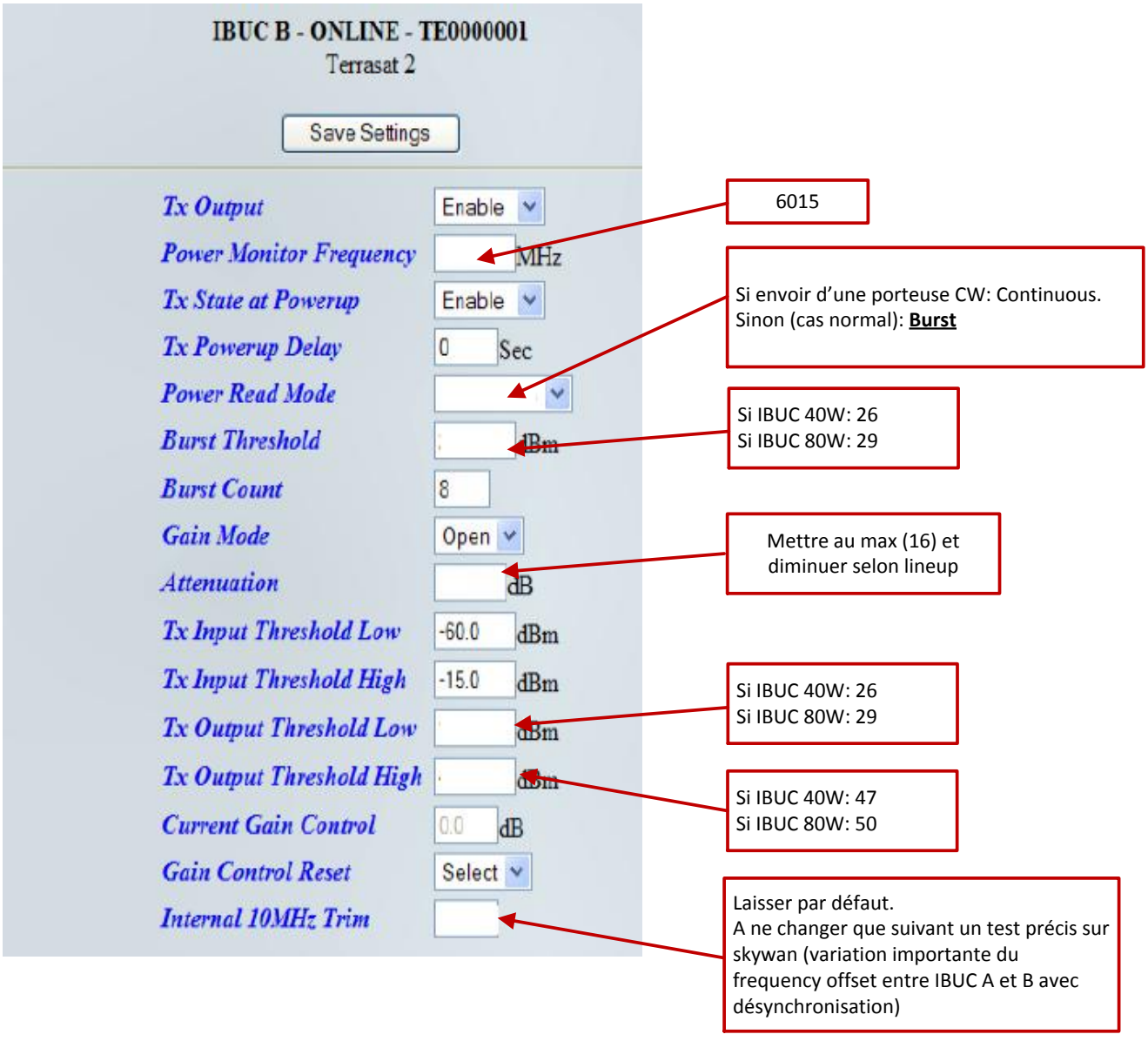
Correct the cabling if necessary.

4.10 STEP 7: IBUC AND RX 1+1 CONFIGURATION

4.10.1 IBUC

Sign onto the IBUCs using your web browser (password 1234).
On the home page (Info), it is possible to identify the power (40 W or 80 W on the IBUC).
Configure the following settings:

4.10.1.1 Tx config:



During the SkyWAN line-up, with Intelsat, the transmission power will be adjusted. To limit the maximum output power of the IBUCs, it is preferable to work at the maximum attenuation of the

IBUCs and minimum attenuation of the SkyWAN, and to then lower the attenuation of the IBUCs depending upon the feedback from Intelsat.
During the line-up, you will be asked to transmit a pure carrier wave, CW. In this case, you must change the reading of the IBUCs from "*Burst*" to "*Continuous*".

4.10.1.2 Interface config

Check the addresses entered in the *IP address* (10.100.XX.41 and .42), *IP subnet mask* (255.255.255.0) and *gateway* fields (10.100.XX.254). The rest are default values.

4.10.1.3 System config

Enter the *Time* settings in UTC time.
Custom title: site name

4.10.1.4 Alarm config

Normally, the Tx and Temperature alarms must be in Major.

4.10.1.5 Redund cfg

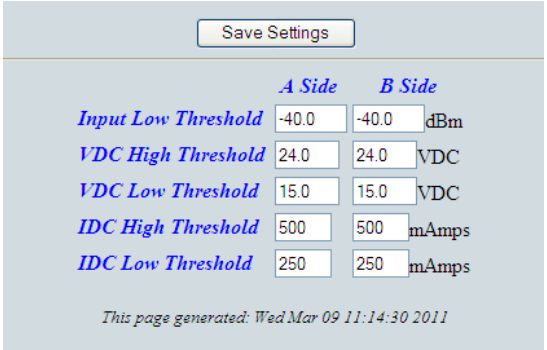
Enter the following settings:
Set IBUC location: leave the default value
Set Online IBUC: used to modify the position of the switch, and thus which IBUC is transmitting to the antenna.
Redundancy mode: **Reverting**: allows switching from A to B and B to A
Redundancy switching type: **Auto**: switching is automatic
Auto clone settings: **enable**: changes to the major settings for the active IBUC will be automatically entered the same on the inactive IBUC.
Other IBUC IP address and *Other IBUC public Address*: 10.100.XX.41 if you are configuring IBUC B and 10.100.XX.42 if you are configuring IBUC A.

4.10.1.6 Alarm log

After having configured both IBUCs, clear the log by clicking "*clear*"

4.10.2 RX 1+1

4.10.2.1 Rx Cfg



4.10.2.2 Interface Cfg

Check the addresses entered in the *IP address* (10.100.XX.43), *IP subnet mask* (255.255.255.0) and *gateway* fields (10.100.XX.254). The rest are default values.

4.10.2.3 System config

Enter the *Time* settings in UTC time.
Custom title: site name

4.10.2.4 Alarm config

Normally the threshold alarms must be in Major.
Deactivate the "*10 MHz Alarm*" (10 MHz internal to the LNB).

4.10.2.5 Redund cfg

Enter the following settings:
Set Online RX1+1: used to change the position of the switch and thus which LNB is receiving from the antenna.
Redundancy mode: **Reverting**: allows switching from A to B and B to A
Redundancy switching type: **Auto**: switching is automatic

4.10.2.6 Alarm log

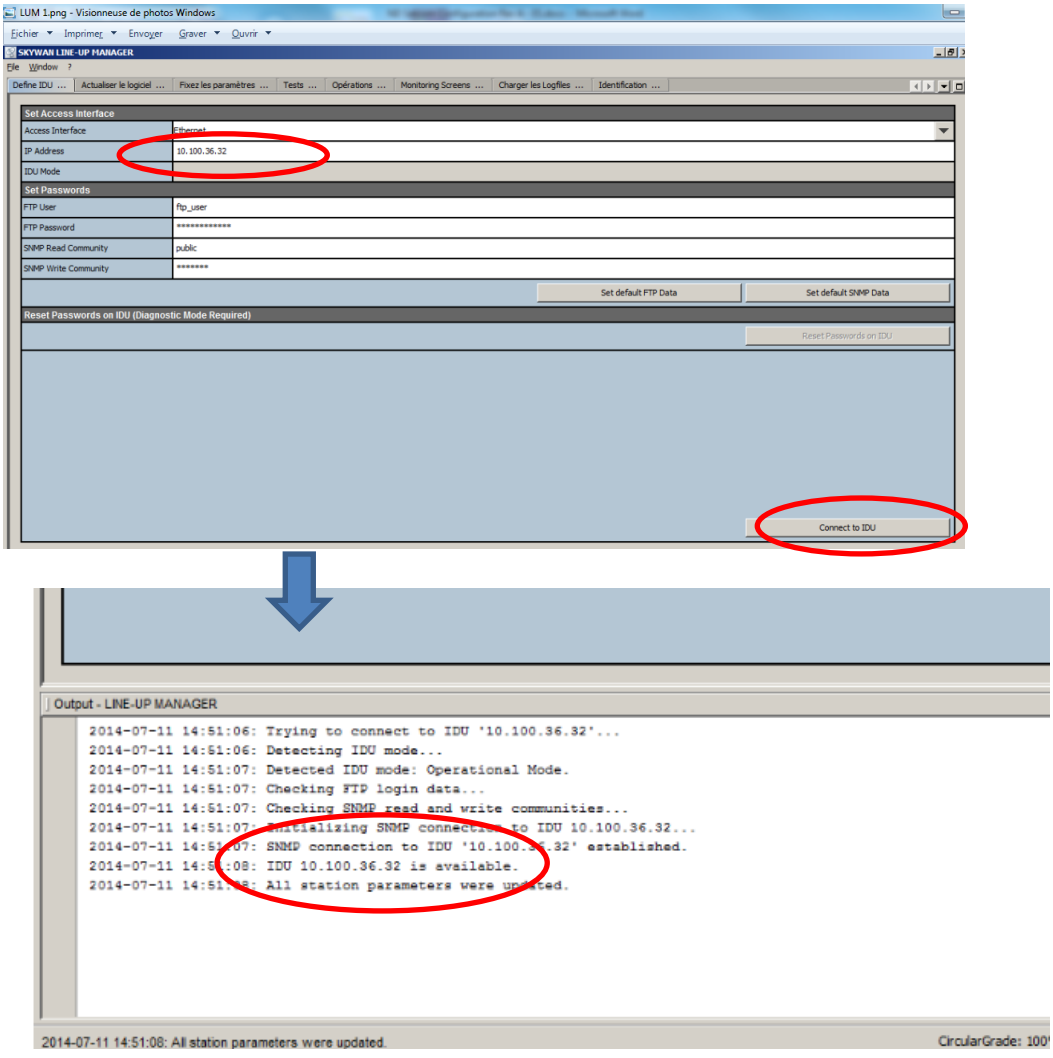
Clear the log after having configured the RX 1+1.

4.11 STEP 8: LINE-UP

The line-up consists of calibrating the modems and IBUCs in terms of power and receiving levels.

4.11.1 Preparation

1) Connect to the IBUC from the monitoring PC and check that its attenuation is at maximum
2) Turn off IBUC transmission from the web page (*disable*)
3) Disconnect the Ethernet cables from SkyWANs A and B
4) Plug an Ethernet connection into port 1 on SkyWAN A
5) Ensure that both the *Diag* and *Operation* LEDs are blinking (green and red respectively)
6) Start the ND Satcom Line-Up manager and connect to SkyWAN A (10.100.XX.31)



7) In the "set parameters" section, configure the settings as follows:

EsN0Min=11.2 dB
EsN0Mod=13.2 dB
EsN0Max=15.2 dB

Round trip time:

Country	**RTT (µs)**
Argentina	248574
Bolivia	244585
Brazil - Curitiba	243661
Brazil - Manaus	240511
Brazil - Recife	240004
Chile	250862
Colombia	245122
Ecuador	247620
Paraguay	244568
Peru	247153
Uruguay	248331
Venezuela	243095
Guyana	240401
French Guyana	239326
Trinidad & Tobago	241394
Suriname	239781

8) Do the same thing on SkyWAN B.

4.11.2 INTELSAT

Intelsat owns the satellite. It will be notified of our work.

Each site must be verified in terms of polarity and power.
To do this, each site must make contact and follow their instructions, or call an auxiliary, which will make contact with Intelsat for it.

Country	L-band frequency (modem)	C-band up frequency	Carrier ID	Auxiliary
Argentina	1 360.504 MHz	6 014. 496 MHz	18663197	Camus
Bolivia	1 359.1065 MHz	6 015.8935 MHz	18663200	Molière
Brazil - Curitiba	1 360.504 MHz	6 014. 496 MHz	18663197	Camus
Brazil - Manaus	1 360.504 MHz	6 014. 496 MHz	18663197	Chevallier
Brazil - Recife	1 357.813 MHz	6 017.187 MHz	18663203	Chevallier
Chile	1 360.504 MHz	6 014. 496 MHz	18663197	Camus
Colombia	1 359.1065 MHz	6 015.8935 MHz	18663200	Molière
Ecuador	1 359.1065 MHz	6 015.8935 MHz	18663200	Molière
Paraguay	1 359.1065 MHz	6 015.8935 MHz	18663200	Molière
Peru	1 359.1065 MHz	6 015.8935 MHz	18663200	Molière
Uruguay	1 360.504 MHz	6 014.496 MHz	18663197	Camus
Venezuela	1 357.813 MHz	6 017.187 MHz	18663203	Chevallier
Guyana	1 357.813 MHz	6 017.187 MHz	18663203	Chevallier
French Guyana	1 357.813 MHz	6 017.187 MHz	18663203	Chevallier
Trinidad & Tobago	1 357.813 MHz	6 017.187 MHz	18663203	Chevallier
Suriname	1 357.813 MHz	6 017.187 MHz	18663203	Chevallier

1) Each auxiliary will coordinate the line-up
2) By request from the auxiliary, authorise transmission from both IBUCs. Notify the auxiliary of the weather, as the line-up must be done in clear weather.
3) By request from the auxiliary, contact Intelsat

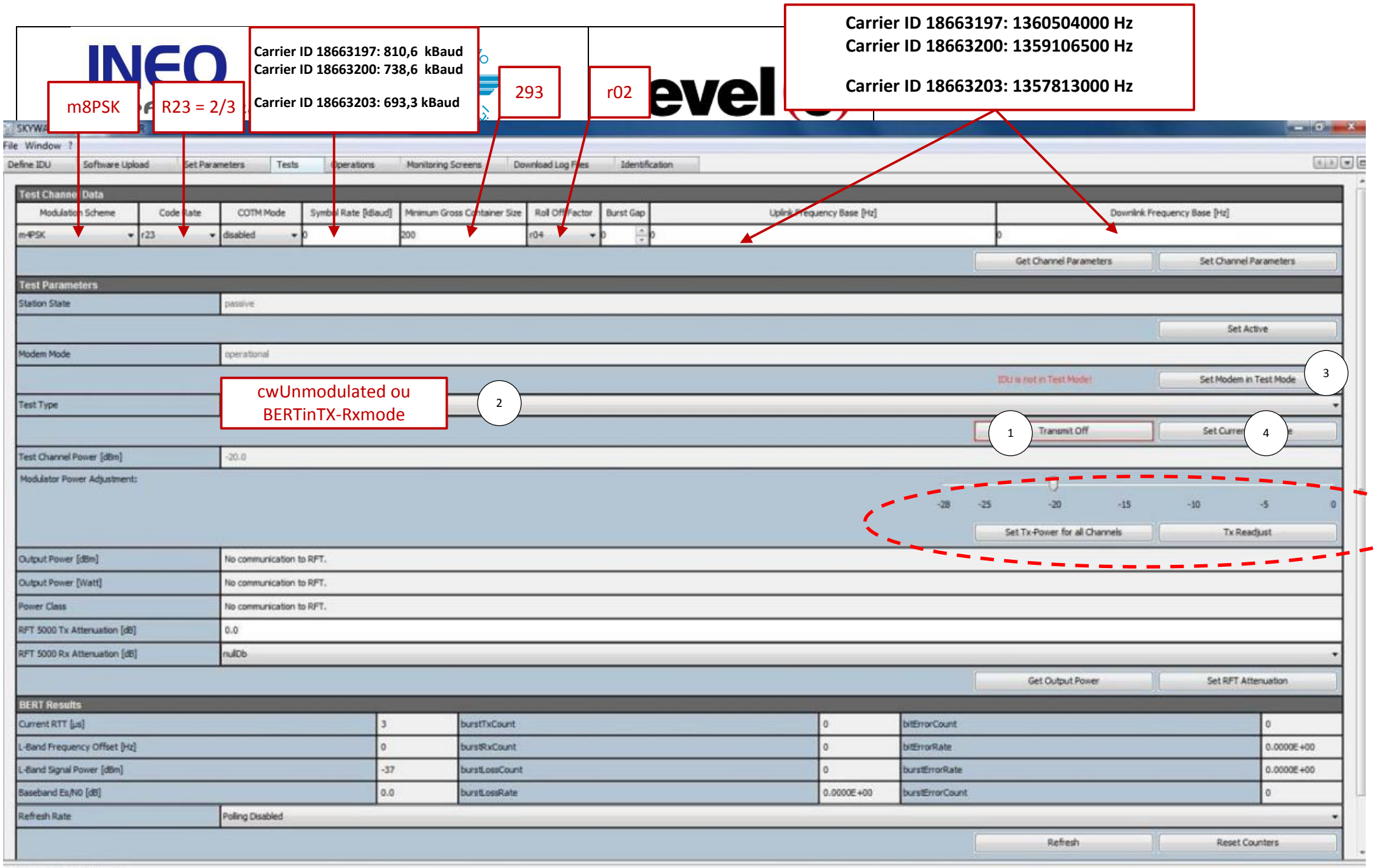
Contact Information	
ROC	Tel: + 1-404-381-2600 Option 3 Fax: + 1-404-381-2426 Email: rocops@intelsat.com

4) Follow its instructions:
   a. Request confirmation of the proper polarization isolation
   ➔ If necessary, turn the source...

Complete the corresponding section (5.2.1, *Polarization adjustment*) on the PSAT document with the customer.

   b. Sending an unmodulated carrier wave (Unmodulated CW. Go to the Test section, see below). In test mode, on the SkyWAN, both the diag and operation LEDs will blink green.
   ➔ Adjust the SkyWAN power (lower/increase the attenuators, do not forget to click on '*Txreadjust*')
   ➔ If you reach 0 attenuation on the SkyWANs, lower the attenuation on the IBUCs
   ➔ Note the maximum attenuation value.

Complete the corresponding section (5.2.1, *Line-up with Intelsat*) on the PSAT document with the customer.


Carrier ID 18663197: 810,6 kBaud
Carrier ID 18663200: 738,6 kBaud
Carrier ID 18663203: 693,3 kBaud
m8PSK
R23 = 2/3
293
r02
Carrier ID 18663197: 1360504000 Hz
Carrier ID 18663200: 1359106500 Hz
Carrier ID 18663203: 1357813000 Hz
cwUnmodulated ou
BERTinTX-Rxmode
2
1
3
4
Define IDU
Software Upload
Set Parameters
Tests
Operations
Monitoring Screens
Download Log Files
Identification
Test Channel Data
Modulation Scheme
Code Rate
COTM Mode
Symbol Rate [kBaud]
Minimum Gross Container Size
Roll Off Factor
Burst Gap
Uplink Frequency Base [Hz]
Downlink Frequency Base [Hz]
Get Channel Parameters
Set Channel Parameters
Test Parameters
Station State
Set Active
Modem Mode
Set Modem in Test Mode
Test Type
Transmit Off
Test Channel Power [dBm]
Modulator Power Adjustment:
Set Tx-Power for all Channels
Tx Readjust
Output Power [dBm]
Output Power [Watt]
Power Class
RFT 5000 Tx Attenuation [dB]
RFT 5000 Rx Attenuation [dB]
Get Output Power
Set RFT Attenuation
BERT Results
Refresh Rate
Refresh
Reset Counters

c. Without touching the SkyWAN attenuators, switch from one IBUC to the other and verify with Intelsat that the difference in levels is less than 0.1 dB.
Otherwise, note the difference and adjust the attenuation on the IBUCs so that the output power is the same, to within less than 0.1 dB.

d. Sending a modulated carrier wave (BERT in TxRx mode)

➔ Adjust the SkyWAN power (lower/increase the attenuators), or the power on the IBUCs.

➔ Note the maximum SkyWAN attenuation value.

SkyWAN A: Attenuation:_____dB

e. Do the same for SkyWAN B, without touching the IBUCs.

➔ Note the maximum SkyWAN attenuation value.

SkyWAN B: Attenuation:_____dB
IBUC A: Attenuation:_____dB
IBUC B: Attenuation:_____dB

Complete the corresponding section (5.2.1, second table) on the PSAT document with the customer.

f. Shut off IBUC transmission.

g. In the NDSatcom line-up manager, in the test section, click on transmit Off. Then in the "*operation*" tab, click "*transmit on*", and then set *"transmit power control*" to "off". Then adjust the SkyWAN attenuation to identical values for d. and e.

The SkyWAN must again show the Diag and Operation LEDs blinking green and red.
Do the same thing on SkyWAN B.

DO NOT RECONNECT THE RJ45 CABLES TO THE SKYWANS.

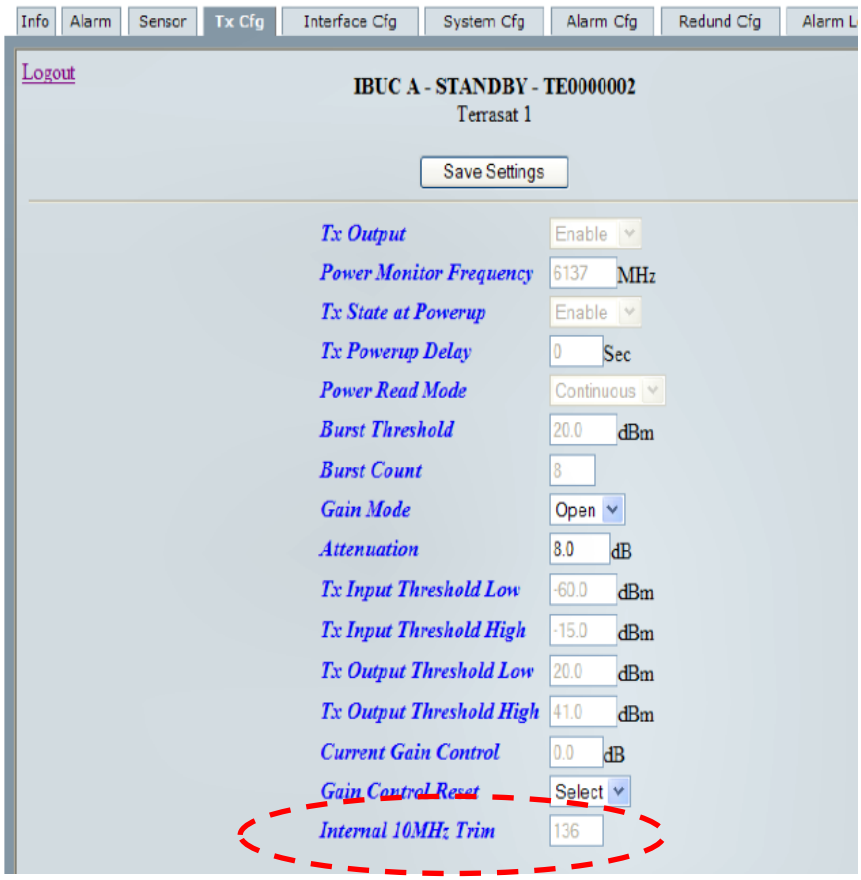
5 DAY 4: COMMISSIONING ON THE VSAT NETWORK

5.1 STEP 1: COMMISSIONING THE NETWORK

1) Authorise IBUC transmission
2) Check with the Line-Up Manager that the SkyWANs have TPC off and the attenuation values defined yesterday.
3) Both SkyWAN LEDs should then show a steady green light.
4) Wait 10 min. and for clear meteorological conditions, then in the Line-Up Manager, in the *monitoring* tab (or *monitoring screens*), "*TDMA Power*" menu, note the following values (divide by 10, a value of 115 is actually 11.5 dB):
   - EsToNoRef:_____dB (SkyWAN A)
   - EsToNoOwn:_____dB (SkyWAN A)
   - EsToNoRef:_____dB (SkyWAN B)
   - EsToNoOwn:_____dB (SkyWAN B)

The EsToNoRef values must be greater than the *EsToNoMin* value (11.2 dB).
The EsToNoOwn values must be greater than the EsToNoMin and EsToNoMod values.

5) In the "*Set parameters*" tab, *Station* section, change the EsToNoMax value to the value previously noted in EsToNoOwn (if you have clear skies).
6) In the Operation tab, set TPC (Transmit Power Control) to On.
7) In the "*Set parameters*" tab, click on get parameters, and then "put in permanent mode".
8) Before restarting the equipment, check that you noted the values in 4), restart the equipment (if it goes into diag mode, steady orange diag LED and operation off for more than 5 min., disconnect and reconnect the power supply cable) and verify that the TPC (On) and EsToNoMax settings were saved.
9) Do the same thing on SkyWAN B.
10) As the SkyWANs are again on the network, switch from IBUC A to IBUC B. There should be no loss of SkyWAN synchronisation (lights that blink for more than 2 sec.). If so, use the Line-Up Manager to connect to one of the SkyWANs that is blinking and go to the supervision/monitoring tab.
    In the "TDMA frequency" tab, note the "frequency offset" value. Switch IBUCs, wait for the SkyWAN to return to the network and read the setting. This difference must be reduced. To do so, you must change a parameter on the IBUCs:



Only change one piece of equipment. Note the default values.
Change this parameter by lowering or increasing by a large amount (20 for example), and watching the positive or negative effect on the frequency offset during a new switch.
Adjust this parameter until a transition without loss of synchronisation is obtained (the SkyWANs. Note this value.

Complete the corresponding section (5.2.2) on the PSAT document with the customer.

5.2 STEP 2: MIGRATION OF THE SERVICES TO THE VSAT LINK

1) Start a continuous ping to Manaus and Bogota
   Start two command prompts:
   ping –t 10.100.36.254 and
   ping –t 10.100.45.254
2) Note the average time to ping Manaus and Bogota
3) Connect the RJ45 cables to the SkyWANs.
4) Wait 5 min. to establish dynamic routing
5) Verify that the ping times changed
6) Carry out a tracert to both destinations to verify that the signal is in fact passing through the SkyWANs: 10.100.XX.31 or 10.100.XX.32.
7) Make a rough verification that the services are operational (telephone call, AFTN, AMHS), coordinating as previously:

Country	Coordinator
Argentina	Argentina
Bolivia	Recife
Curitiba	Recife
Manaus	Manaus
Recife	Recife
Chile	Argentina
Colombia*	Manaus
Ecuador*	Manaus
Paraguay	Argentina
Peru*	Manaus
Guyana	Venezuela
Guyana	Venezuela
Suriname	Venezuela
Trinidad	Venezuela
Uruguay	Argentina
Venezuela	Venezuela

5.3 STEP 3: PSAT TESTS - SERVICES

5.3.1 PSAT

Carry out the corresponding PSAT tests, in the PSAT file:

- Service tests on channel A
- Service tests on channel B

Complete the corresponding section (paragraph 6) on the PSAT document with the customer.

5.3.2 MEVA:

In Venezuela, conduct a MEVA interconnection test by calling 18.., 22.., 29.. depending upon the numbers indicated by the focal point.
In Columbia, conduct a MEVA interconnection test by calling 22.., 39.. depending upon the numbers indicated by the focal point.

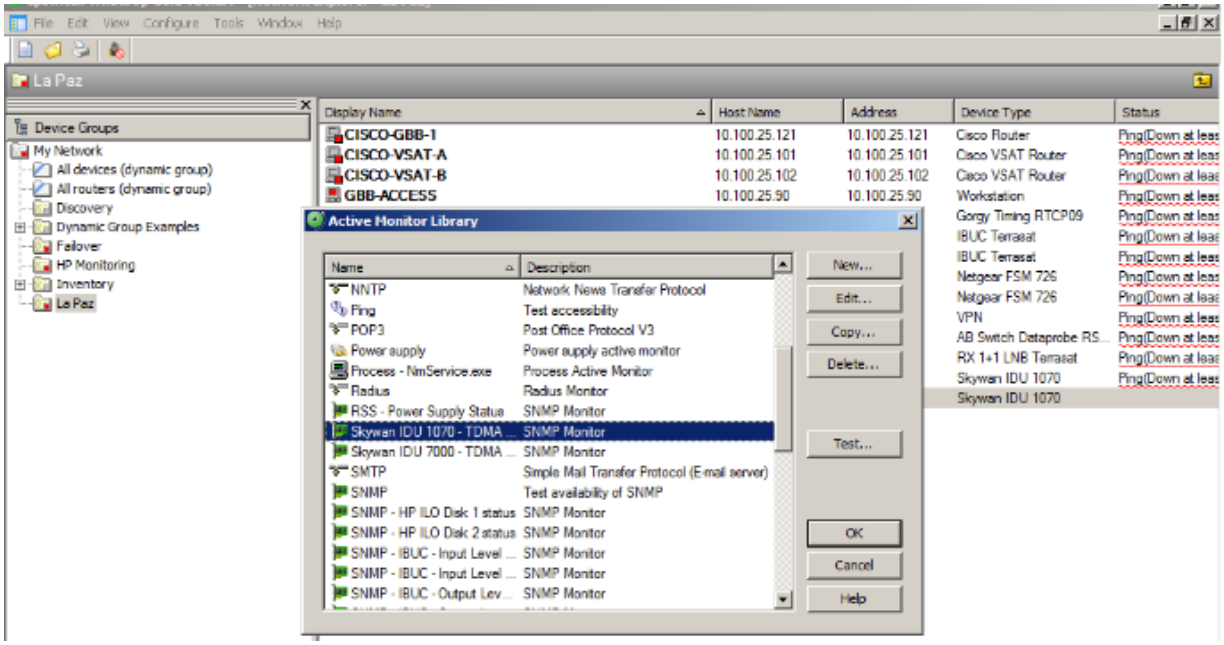
Complete the corresponding section on the PSAT document with the customer.

Then Continue step 4 then 5 if possible. Otherwise, complete it on the following day.

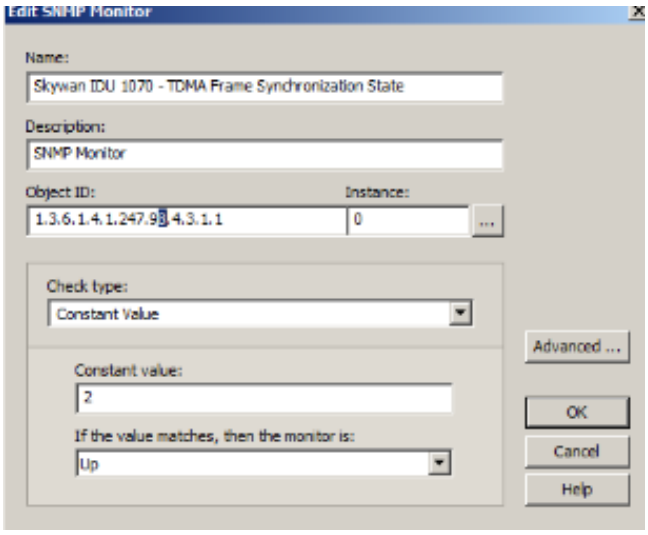
5.4 STEP 4: UPDATING THE NMS

The MIB on the SkyWANs changed. A monitoring update must be carried out.
On the monitoring PC, start "What's Up Gold Admin console".

Go to the "*Configure*" tab, then "*Active monitor Library*"

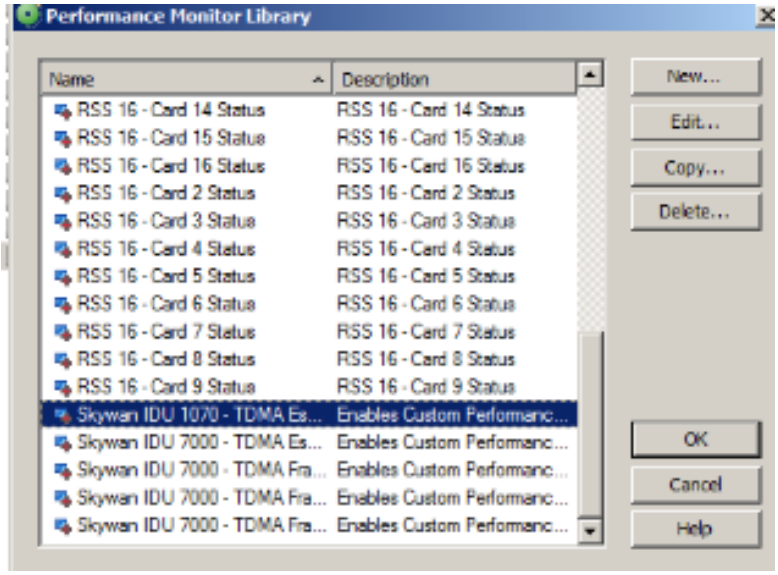


Click on "*SkyWAN IDU 1070* - TDMA", then on "*Edit*"



The value .97 is incorrect. Replace with 98 as above. Click OK. Do the same with the IDU 7000.

Go to the "*Configure*" tab, then "*Performance Monitor Library*", click *on SkyWAN IDU 1070 - TDM*, then *Edit* and change the value .97 to .98. Do the same thing for the settings on the SkyWAN 7000:



5.5 STEP 5: REDUNDANCY TESTS (AND NMS DISPLAY)

In accordance with the PSAT document, conduct the redundancy tests, checking to ensure that the failure nicknames have been transmitted to the NMS.

5.5.1 Tx 1+1: IBUC redundancy

Disconnecting the coaxial cable from the active IBUC and switching. Conduct an A to B and then B to A test.

Complete the corresponding section (paragraph 7.1.1) on the PSAT document with the customer.

5.5.2 RX 1+1

Disconnecting the cable from the active LNB (on the RX 1+1) and switching. Conduct an A to B and then B to A test.

Complete the corresponding section (paragraph 7.1.2) on the PSAT document with the customer.

5.5.3 Master SkyWAN

Only in Manaus and Ezeiza.
Disconnect the Tx and Rx cables from the active master, confirm the master relay takeover and that the synch is re-established in a few seconds.

Complete the corresponding section (paragraph 7.2) on the PSAT document with the customer.

5.5.4 Cisco

Turn of Cisco 1A and watch the switch to channel B.
After having conducted the tests, return to A.

Complete the corresponding section (paragraph 7.3.1) on the PSAT document with the customer.

5.5.5 SkyWAN

Turn of SkyWAN A and watch the switch to channel B.
After having conducted the tests, return to A.

Complete the corresponding section (paragraph 7.3.2) on the PSAT document with the customer.

5.5.6 Ethernet Switch

Turn off Netgear Ethernet Switch A and watch the switch to channel B.
After having conducted the tests, return to A.

Complete the corresponding section (paragraph 7.3.3) on the PSAT document with the customer.

5.5.7 RSS

Turn off the RSS and confirm that communication is not interrupted.

Complete the corresponding section (paragraph 7.3.4) on the PSAT document with the customer.

6 DAY 5: FINALISING

6.1 STEP 1: TESTS OF THE DEDICATED LINKS TO THE GBB

6.1.1 Backup test

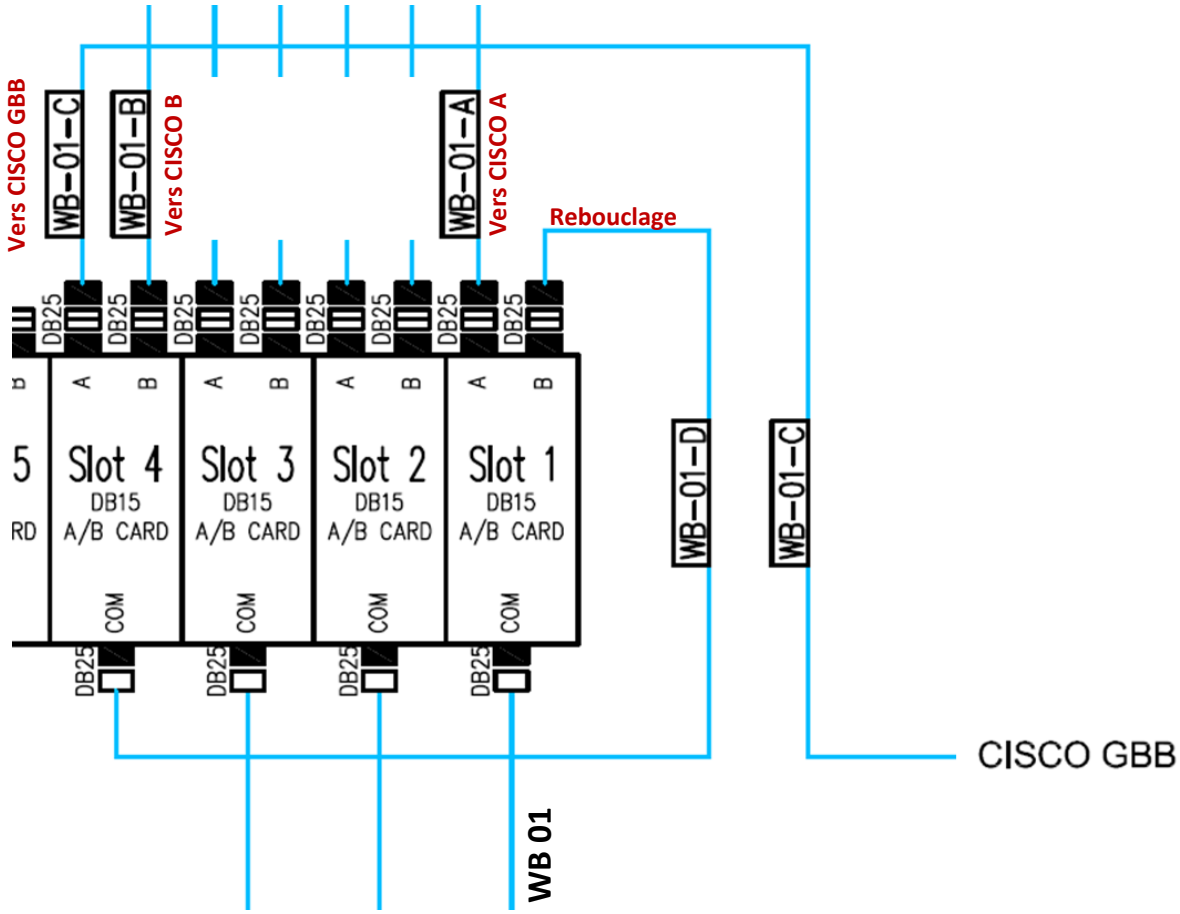
Turn off both SkyWANs and after a few minutes verify that you have access to the other sites and that the services are operational.

Complete the corresponding section (paragraph 8.1) on the PSAT document with the customer.

6.1.2 Dedicated links

There are dedicated links for the Cisco GBB. Not all services go through it. Only some AFTNs and a voice port (without cable) are present.

These AFTNs pass through the RSS switch, and then output B is looped back to the RSS:



Thus, in this example, when the RSS is all in A, input WB 01 is connected to output 1A in WB-01-A, to CISCO A.
When everything is in B, WB 01 is connected to 1B at WB-01-D, enters through the COM port in slot 4 and exits through 4B on WB-01-B to Cisco B.
Thus, if we manually position everything in B, except card 4, which we put in A, we exit on WB01-C, which is connected to the CISCO GBB.

1) Identify the RSS cards used to switch between the CISCO GBB and CISCO B (such as card 4 in the example above). We will call them the GBB cards
2) Shut down Cisco A and then B. The system will switch to B
3) Manually switch the GBB cards (and only this one)
4) Disconnect the service/admin telephone (dial plan 2) and reconnect it to the CISCO GBB (see dial plan file). Do the same thing with the ATS (non hotline).
5) Conduct a ping test to verify that the system is still operational.
6) Place a call to a remote site.

Complete the corresponding section (paragraph 8.2) on the PSAT document with the customer.

Return the status to normal (turn on Cisco A and then Cisco B, manually switch from RSS to A).

6.2 STEP 2: NMS TESTS

In accordance with the PSAT document, check the NMS configuration:
See appendix 7.12 for help if necessary.

6.2.1 Check the active monitors

6.2.2 Check the performance monitors

6.2.3 Check the connections to the console ports

6.3 STEP 3: MIGRATION OF THE LEVEL 3 EQUIPMENT

If the Level 3 equipment was not installed in the rack, shut it down, install it in the rack, and reconnect it.
Manaus will then conduct a test to ensure proper operation.

6.4 STEP 4: CHECKING THE PSAT DOCUMENT

Ensure that on the PSAT document that only equipment removal is missing, and that all service and redundancy tests were completed.

6.5 STEP 5: FINALISING THE INSTALLATION

6.5.1 Install the VPN in the bay

The VPN was held up in customs and could not be sent. Install it now. And check for its presence on the NMS in green.

6.5.2 Finalise the cabling for the services on REDDIG II

Finalise the cabling for the services on REDDIG II with the customer (or if the customer prefers to handle this...).

6.5.3 Finishing work

Protect the outdoor connectors with Scotch tape 23 (which can stretch) and 33 (to properly tighten them).

Complete the corresponding section (paragraph 5.1.2) on the PSAT document with the customer.

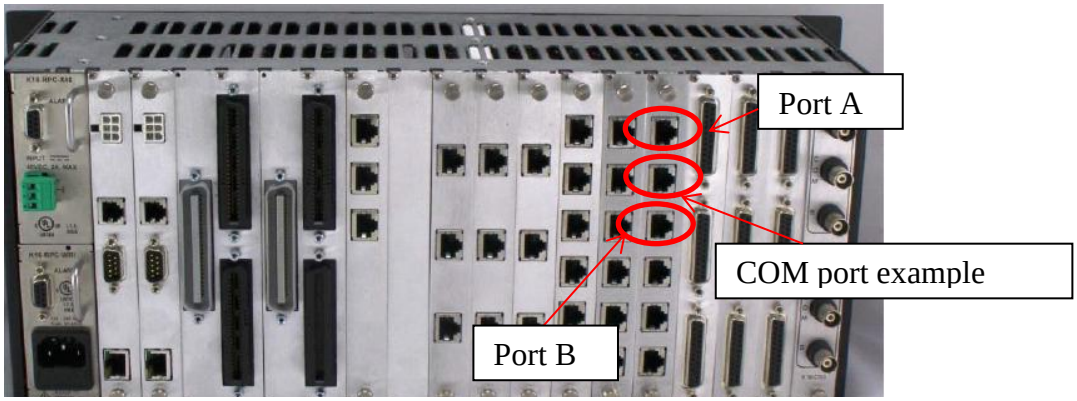
6.5.4 Removing the outdoor cables from REDDIG I

Remove the cables from REDDIG I (coaxial and multi-pair), with special care (do not pull out the new ones!).

6.5.5 Removing the old IBUCs and RX 1+1

The existing equipment is owned by the countries and the ICAO. Help them to move it.

Modifying the cabling:
The IP telephone must pass through the patch panel and the Dataprobe.
Take the RJ45/RJ45 connector provided and install it on the patch panel.
Connect it to an RJ45 card on the Dataprobe, on one of the two COM ports:



Connect port A to Ethernet switch A, on an unused port (and linked to VLAN 1).
Connect port B to Ethernet switch B, on an unused port (and linked to VLAN 1).

7 APPENDICES

7.1 TELEPHONY

7.1.1 Dial plan

See the "dial plan" file

7.1.2 Additional E&M and E1 commands

```
Router # conf  t
Router (config)# voice-port ___
Router(config-voiceport)# ___
```

(0/y/z : 0/slot/port or 0/y/z :a: where a is the ds0 number, the time-slot number, for the E1)

http://docwiki.cisco.com/wiki/Cisco_IOS_Voice_Troubleshooting_and_Monitoring_--_E%26M_Interfaces

http://www.cisco.com/c/en/us/support/docs/voice/analog-signaling-e-m-did-fxs-fxo/14005-em-supervision.html

http://www.cisco.com/en/US/docs/ios/12_3t/voice/command/reference/vrht_t3_ps5207_TSD_Products_Command_Reference_Chapter.html#wp1619902

timing interdigit

To specify the dual-tone multifrequency (DTMF) interdigit duration for a specified voice port, use the **timing interdigit** command in voice-port configuration mode. To reset to the default, use the **no** form of this command.

timing interdigit *time*

no timing interdigit *time*

Syntax Description

time	DTMF interdigit duration, in milliseconds. Range is from 50 to 500. The default is 100.

Command Default

100 milliseconds

Usage Guidelines

The call signal direction for the **timing interdigit** command is out. This command is supported on Foreign Exchange Office (FXO), Foreign Exchange Station (FXS), and E&M ports.

Examples

The following example sets the DTMF interdigit duration on a voice port to 150 milliseconds:

```
voice-port 1/0/0
 timing interdigit 150
```

→Leave the default, or increase it to 200.

timing dialout-delay

To specify the dial-out delay for the sending digit on a specified voice port, use the **timing dialout-delay** command in voice-port configuration mode. To reset to the default, use the **no** form of this command.

timing dialout-delay *time*

no timing dialout-delay *time*

Syntax Description

time	Dial-out delay, in milliseconds, for the sending digit or cut-through on a Foreign Exchange Office (FXO) trunk or an E&M immediate trunk. Range is from 100 to 5000. The default is 300.

Command Default

300 milliseconds

→Increase it to 1000.

timing wink-wait

To specify the maximum wink-wait duration for a specified voice port, use the **timing wink-wait** command in voice-port configuration mode. To reset to the default, use the **no** form of this command.

timing wink-wait *time*

no timing wink-wait

Syntax Description

time	Maximum wink-wait duration, in milliseconds, for a wink start signal. Range is from 100 to 6500. The default is 200.

Defaults

200 milliseconds

Command Modes

Voice-port configuration

Command History

Release	Modification
11.3(1)T	This command was introduced on Cisco 3600 series.
11.3(1)MA	This command was supported on Cisco MC3810.
12.4(12)	The millisecond range was extended from 5000 to 6500.

Usage Guidelines

The call signal direction for the **timing wink-wait** command is out. This command is supported on ear and mouth (E&M) ports only.

Examples

The following example sets the wink-wait duration on a voice port to 300 milliseconds:

```
voice-port 1/0/0
 timing wink-wait 300
```

→Increase it to 5000 (most tolerant system).

timing wait-wink

To set the maximum time to wait for wink signal after an outgoing seizure is sent, use the **timing wait-wink** command in voice port configuration mode. To restore the default value, use the **no** form of this command.

timing wait-wink *milliseconds*

no timing wait-wink *milliseconds*

Syntax Description

milliseconds	Maximum time to wait for wink signal after an outgoing seizure is sent. Valid entries are from 100 to 6500 milliseconds (ms). Supported on ear and mouth (E&M) ports only.

Defaults

milliseconds: 550 milliseconds

Command Modes

Voice port configuration

Command History

Release	Modification
11.3(1)T	This command was introduced on Cisco 3600 series routers.
11.3(1)MA	This command was implemented on Cisco MC3810 multiservice concentrators.
12.4(12)	The millisecond range was extended from 5000 to 6500.

Examples

The following example configures the maximum time to wait for wink signaling after an outgoing seizure is sent on a voice port for 300 milliseconds:

```
voice-port 1/0/0
 timing wait-wink 300
```

→Increase it to 5000 (most tolerant system).

timing interdigit

To specify the dual-tone multifrequency (DTMF) interdigit duration for a specified voice port, use the **timing interdigit** command in voice-port configuration mode. To reset to the default, use the **no** form of this command.

timing interdigit *time*

no timing interdigit *time*

Syntax Description

time	DTMF interdigit duration, in milliseconds. Range is from 50 to 500. The default is 100.

Command Default

100 milliseconds

Command Modes

Voice-port configuration

Command History

Release	Modification
11.3(1)T	This command was introduced on Cisco 3600 series.
11.3(1)MA	This command was supported on Cisco MC3810.

Usage Guidelines

The call signal direction for the **timing interdigit** command is out. This command is supported on Foreign Exchange Office (FXO), Foreign Exchange Station (FXS), and E&M ports.

Examples

The following example sets the DTMF interdigit duration on a voice port to 150 milliseconds:

```
voice-port 1/0/0
 timing interdigit 150
```

→Leave the default (100).

auto-cut-through

To enable call completion when a PBX does not provide an M-lead response, use the **auto-cut-through** command in voice-port configuration mode. To disable the auto-cut-through operation, use the **no** form of this command.

auto-cut-through

no auto-cut-through

Syntax Description

This command has no arguments or keywords.

Defaults

Auto-cut-through is enabled.

Command Modes

Voice-port configuration

Command History

Release	Modification
11.3(1)MA	This command was introduced on the Cisco MC3810 multiservice concentrator.
12.0(7)XK	This command was first supported on the Cisco 2600 and 3600 series routers.
12.1(2)T	This command was integrated into Cisco IOS Release 12.1(2)T.

Usage Guidelines

The **auto-cut-through** command applies to ear and mouth (E&M) voice ports only.

Examples

The following example shows enabling of call completion on a Cisco MC3810 multiservice concentrator when a PBX does not provide an M-lead response:

```
voice-port 1/1
 auto-cut-through
```

The following example shows enabling of call completion on a Cisco 2600 or 3600 router when a PBX does not provide an M-lead response:

```
voice-port 1/0/0
 auto-cut-through
```

Related Commands

Command	Description
show voice port	Displays voice port configuration information.

Agenda Item 4: **Work plan for year 2015**

4.1 The Meeting deemed convenient the following activities scheduled for 2015:

a) REDDIG II training programme;
b) REDDIG II operation and analysis of the implementation of new services; and
c) Installation and operation of MEVA III / REDDIG interconnection.

REDDIG II training programme

4.2 The Meeting considered that in order to complete the training of the personnel to be responsible for the operation and maintenance of the REDDIG II, the following training courses will be required for 2015:

- ✓ *Specialized course on management and operation of the WhatsUp Gold software*
- ✓ *Basic course on routers and switches IP CISCO*

Specialized course on management and operation of the WhatsUp Gold software

4.3 The Meeting deemed as a result of the recommendation formulated by the participants of the in-factory course, who considered that the training received on WhatsUp Gold during the in-factory course was basic and that an advanced course for the management and operation of the REDDIG II would be essential for a deeper knowledge on the software necessary for the management of the local and central Management System (NMS) of the REDDIG II. In this sense the Meeting approved the delivery of an advance course on WhatsUp Gold software. The course will be delivered in Manaus Brazil from 21 to 25 April 2015. For the carrying out of the course it will be required a fellowship per State but Brazil to whom two fellowships will be awarded, simultaneous interpretation and the course fee. The approximate cost of this activity should be USD 35 000.

4.4 Likewise the Meeting considered that prior to the course, from 20 to 21 April the Fourth technical-operational meeting of the REDDIG (RTO/4) will be held. This meeting is addressed to the personnel responsible for the maintenance and operation of the REDDIG and is aim to analyze the performance of the REDDIG II, the procedures for the response to network contingencies and the REDDIG II Operation and Maintenance Manual will be also presented. For this meeting one fellowship per State and simultaneous interpretation will be provided and its costs are included in the amount considered for WhatsUp Gold course.

Basic course on routers and switches IP CISCO

4.5 As a result of the training courses conducted during 2014 (more details in Agenda Item 3), the Meeting considered the delivery of a basic course on routers and switches OP CISCO addressed to the personnel in charge of the maintenance and operation of the REDDIG II. This course will be intended to provide the necessary training to the technical personnel responsible of the maintenance of the REDDIG II that do not have a solid knowledge on IP network and associated equipment (CISCO routers and switches).

4.6 In this sense the Meeting proceeded to approve the carrying out a course Basic course on routers and switches IP CISCO. Description of the course is presented as **Appendix A** to this Agenda Item. The course with a duration of 15 days has been scheduled initially to take place from 19 to 30 September 2015 and will have an estimated cost of USD 35 000, which includes the course fee and the simultaneous interpretation. No fellowships have been foreseen for this activity. In connection to this event the Fifth technical-operational meeting of the REDDIG (RTO/5) will be carried out.

REDDIG II operation and analysis of the implementation of new services

4.7 The Meeting took note that the REDDIG II came into operation on 31 January 2015, the provisional acceptance (PSAT) of the REDDIG process was completed on 6 February 2015. The PSAT as it was considered in the 22501200 contract signed between ICAO and the Consortium INEO LEVEL 3 was carried out by the focal points of the REDDIG II altogether with INEO staff in charge of the installation of REDDIG II.

4.8 At the same time the Meeting was informed that the focal points completed the PSAT test protocol and proceeded to the signing of the PSAT certificate with observations practically in all nodes of REDDIG II. These observations should be addressed by the INEO & Level 3 consortium in a period of 40 days called ORD (Operational Readiness Demonstration) between the PSAT and the FSAT (Final site acceptance test). Likewise any problem occurring during the period has to be solved before the FSAT. The ORD began on 6 February 2015.

4.9 During the meeting a teleconference was held via GO TO MEETING which attended by INEO staff as well as focal points of the States that were not present at the meeting as Colombia, Ecuador, French Guiana, and Venezuela) also participated the REDDIG Manager from Manaus. In the teleconference, INEO representative reported on progress made so far and the activities planned in the coming days. The focal points of the States informed INEO of the main problems in its nodes and the urgent need to resolve them. In this regard INEO reported that its commitment was to resolve all the outstanding issues and that these could last longer than the planned time of 40 days of the ORD.

Implementation of REDDIG II new services

Access to SITA data link through REDDIG II

4.10 The meeting analyzed the proposal presented by SITA on Air Navigation (ANSPS) Service Provider access to SITA data link service through the REDDIG. The details of the proposal of SITA are can be found in Working Paper WP/07 of this meeting.

4.11 In this sense, the Meeting was informed that currently the SITA ATS AIRCOM service supports several services ATC data link ANSPS of the SAM Region as FANS 1/A (CPDLC and ADS-C) in Brazil (DECEA), Uruguay (DINACIA), Chile (DGAC), French Guiana (DSNA) and Argentina (DGCTA).

4.12 The Meeting considered the proposal offered by SITA useful for States which had data link with SITA services especially for Chile and French Guiana, since in these countries for access to SITA network it is required to hire communications service providers which would affected the cost of data link service to these States.

4.13 In this regard the meeting considered that as a first step to access the Datalink SITA service through the REDDIG II it will be necessary to perform tests for a period of three months in one of

the States mentioned in the preceding paragraph. In this respect the Meeting taking into account the current status of the data link service in those States, considered that tests should be carried out in Chile.

4.14 SITA informed to the Meeting that would give all the technical support for the trial period at no cost for the Aeronautical Administration of Chile. In this regard the Meeting considered that Chile will analyze the possibility of testing and report to ICAO Regional Office by April 15, 2015 and in case they decided to accept the tests, it would start on July 2015. In this sense the Meeting formulated the following Conclusion:

Conclusion RCC 18/2 Tests to access the SITA data link service through the REDDIG II by ANSP

In order to analyze the technical feasibility of access to the SITA data service through REDDIG II, by the air navigation services providers (ANSP) for a period of three months:

a) That the Aeronautical Administration of Chile analyzes the feasibility of carrying out tests considering that, no additional cost will be charged by SITA and that they would receive all the technical support from SITA and the REDDIG Administration and will report the results of the analysis to the ICAO South American Regional Office by April 15.

b) The Secretariat will provide information regarding possible costs to be assumed by Chile for the testing period through REDDIG II, not later than 30 March 2015.

c) In case of feasibility of the test by Chile, the test will begin on July 2015.

Implementation of new REDDIG node in Brasilia

4.15 The Meeting took note that for the second part of 2015 it is foreseen the operation of the new REDDIG node in Brasilia. The acquisition of the Brasilia node was done through ICAO amending contract 22501200 of REDDIG II.

4.16 The Meeting took note that as part of the activities for the implementation of a new node in Brasilia, some services from REDDIG II nodes of Manaus, Recife and Curitiba will be relocated through the new node of Brasilia (interregional AFTN circuits Madrid, United States). Likewise it has been foreseen a REDDIG II theoretical-practical course for the technical staff of Brazil that will be in charge of the maintenance of the node.

4.17 The Meeting considered that in case any REDDIG II Member State wants to participate in the course, will inform to the ICAO South American Regional Office. For this course, Brazil stated that in addition to the candidates pointed by Brazil, a maximum of 12 persons from other Member States of the REDDIG II could attend the course. Expenses for assistance to the course will be in charge of the State concerned.

4.18 **Appendix B** of this agenda item presents the Schedule of activities presented by INEO for the implementation of the new node.

Installation and operation of MEVA III / REDDIG interconnection

4.19 The Meeting was informed that between ICAO, on behalf of all States members of the REDDIG II, and COMSOFT GmbH Company (provider of the MEVA III) developed the Contract No. 2250128 for the implementation of the MEVA III REDDIG II interconnection. The contract was signed on November 14, 2014 and will become effective once the interconnection services of MEVAIII /REDDIG II become operative foreseen for March 2015.

4.20 The Meeting remembered that the Thirteen Coordination Meeting analyzed the proposal submitted by COMSOFT for the new MEVA III REDDIG II interconnection. The proposal presented two options to implement the interconnection, one consisting of the acquisition of the required equipment as REDDIG II property, plus the recurrent costs corresponding to services, and other option consisting in the acquisition of equipment by leasing plus the recurrent costs of services.

4.21 The RCC/13 pointed the leasing option as the most appropriate and beneficial in terms of cost and considered it as a solution for the new interconnection MEVA III REDDIG II, stablishing in this regard the *Conclusion RCC/17-1 New interconnection MEVA III / REDDIG II*. The Conclusion makes reference to Appendix E of Agenda Item 4 of RCC/17 where the option of leasing costs was presented as well as the costs that will be shared equitably among all States (non-recurring costs of the interconnection MEVA III / REDDIG II in Bogota and Caracas nodes) also specified in Appendix E.

4.22 The list of equipment to be installed in Bogota and Colombia for the implementation of interconnection as well as services that will provide are presented as **Appendix C** to this agenda item. Copy of the agreement for the implementation of the interconnection MEVA III / REDDIG II is presented as **Appendix D** to this agenda item.

4.23 The Meeting was informed that in order to follow up the operation of services of the MEVAIII REDDIG II interconnection since its setup as well as to review the MoU established for the operation, maintenance, control, management and other aspects for the interconnection MEVA REDDIG and examine the implementation of new services, the first meeting of coordination for the interconnection MEVAIII/REDDIG II will be held in Oranjestad, Aruba from 25 to May 26, 2015.

Other considerations

4.24 The Meeting was informed that during the ORD process and after the final acceptance test the REDDIG II (during the guaranty period) in case of failure in any equipment of the node, the proceeding will be the following:

a) SAM Office will send, in case in stock in the warehouse of spare part of the REDDIG, a new equipment to the REDDIG II node presenting failure.
b) The node that has problem will send the damaged equipment to ICAO SAM Office.
c) ICAO SAM Office will send the damaged equipment to the Factory.
d) The equipment repaired from the Factory is sent to the SAM Office for its entry to the warehouse of spare parts.

APPENDIX A

Cisco Networking Academy®

Mind Wide Open™

CCNA Routing and Switching

At-A-Glance

The Cisco Networking Academy® CCNA Routing and Switching curriculum is designed for students who are seeking entry-level ICT jobs or plan to pursue more specialized ICT skills.

CCNA Routing and Switching provides comprehensive coverage of networking topics, from fundamentals to advanced applications and services, with opportunities for hands-on practical experience and career skills development.

Cisco Certifications

Students will be prepared to take the Cisco CCENT® certification exam after completing a set of two courses and the CCNA® Routing and Switching certification exam after completing a set of four courses.

Features and Benefits

The CCNA Routing and Switching curriculum offers the following features and benefits:

- Students learn the basics of routing, switching, and advanced technologies to prepare for the CCENT and CCNA certification exams, networking related degree programs, and entry-level careers.
- The language used to describe networking concepts is designed to be easily understood by learners at all levels and embedded interactive activities help reinforce comprehension.
- Courses emphasize critical thinking, problem solving, collaboration, and the practical application of skills.
- Multimedia learning tools, including videos, games, and quizzes, address a variety of learning styles and promote increased knowledge retention.
- Hands-on labs and Cisco® Packet Tracer simulation-based learning activities help students develop critical thinking and complex problem solving skills.
- Embedded assessments provide immediate feedback to support the evaluation of knowledge and acquired skills.

Course Description

CCNA Routing and Switching teaches comprehensive networking concepts, from network applications to the protocols and services provided to those applications by the lower layers of the network. Students will progress from basic networking to more complex enterprise and theoretical networking models later in the curriculum.

There are four courses in the recommended sequence:

- Introduction to Networks
- Routing and Switching Essentials
- Scaling Networks
- Connecting Networks

In each course, Networking Academy™ students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities that reinforce their learning.

Course	Description
Introduction to Networks	Introduces the architecture, structure, functions, components, and models of the Internet and computer networks. The principles of IP addressing and fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.
Routing and Switching Essentials	Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.
Scaling Networks	Describes the architecture, components, and operations of routers and switches in a large and complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network.
Connecting Networks	Discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network

Skills and Competencies

Here are some examples of tasks students will be able to perform after completing each course.

Introduction to Networks	Routing and Switching Essentials
Describe the devices and services used to support communications in data networks and the Internet	Describe enhanced switching technologies such as VLANs, VLAN Trunking Protocol, Rapid Spanning Tree Protocol, and 802.1q
Describe the role of protocol layers in data networks	Describe basic switching concepts and the operation of Cisco switches
Describe the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments	Configure and troubleshoot basic operations of a small switched network
Design, calculate, and apply subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 network	Configure and troubleshoot basic operations of routers in a small routed network
Build a simple Ethernet network using routers and switches	Configure and troubleshoot VLANs and inter-VLAN routing
Use Cisco command-line interface (CLI) commands to perform basic router and switch configurations	Describe the operations of Dynamic Host Configuration Protocol and Domain Name System for IPv4 and IPv6

Scaling Networks	Connecting Networks
Configure and troubleshoot DHCP and DNS operations for IPv4 and IPv6	Describe the operations and benefits of virtual private networks (VPNs) and tunneling
Describe the operations and benefits of the Spanning Tree Protocol (STP)	describe different WAN technologies and their benefits
Configure and troubleshoot STP operations	Configure and troubleshoot serial connections
Describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP)	Configure and troubleshoot broadband connections
Configure and troubleshoot basic operations of routers in a complex routed network for IPv4 and IPv6	Configure and troubleshoot IPSec tunneling operations
Configure and troubleshoot advanced operations of routers and implement RIP, OSPF, and EIGRP routing protocols for IPv4 and IPv6	Monitor and troubleshoot network operations using syslog, SNMP, and NetFlow
Manage Cisco IOS® Software licensing and configuration files	Design network architectures for borderless networks, data centers, and collaboration

About Cisco Networking Academy

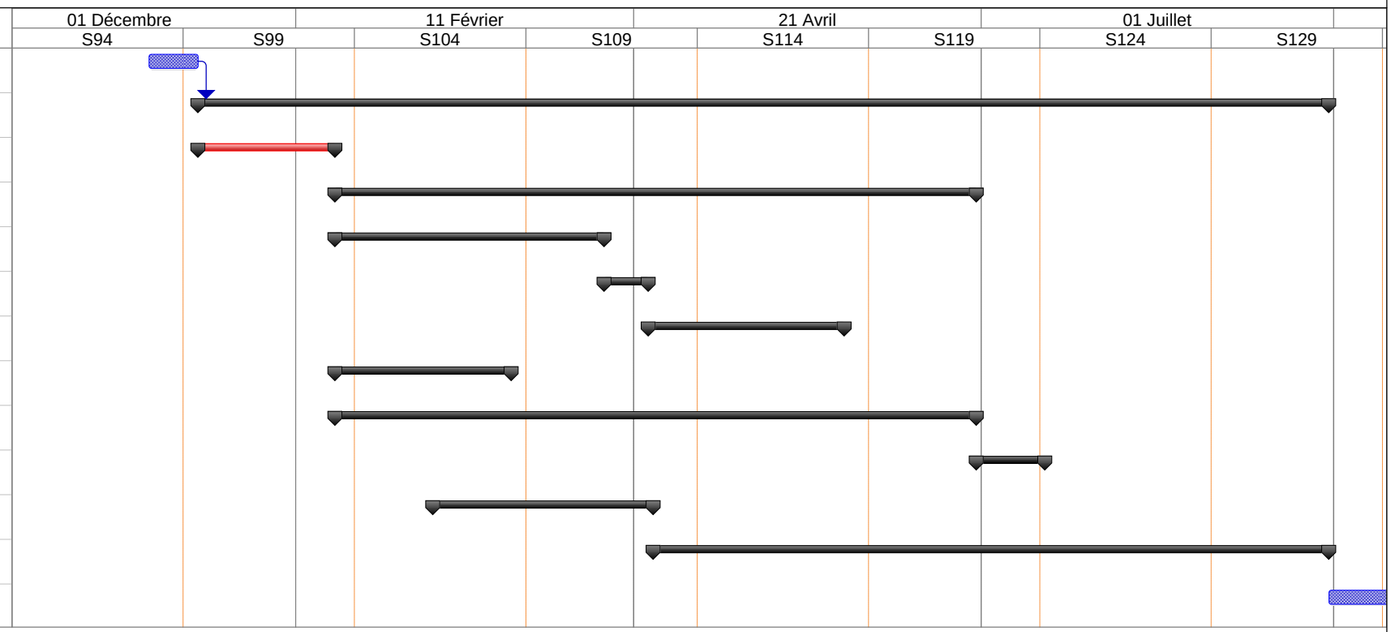
In partnership with schools and organizations around the world, Cisco Networking Academy delivers a comprehensive learning experience to help students develop ICT skills for career opportunities, continuing education, and globally recognized career certifications.

To learn more, visit: www.netacad.com.

Tentative time schedule / PHASES - 26th June 2013

INEO Engineering & Systems

N°	Nom de la tâche	Début	Fin	Durée	% achevé
1	**signature amendement III**	12/01	22/01	10 jours	0%
2	**Project Tentative Work Schedule**	**22/01**	**10/09**	**231 jours**	**0%**
3	**SDD**	**22/01**	**19/02**	**28 jours**	**0%**
13	**Purchasing FAT and Delivery**	**19/02**	**30/06**	**131 jours**	**0%**
14	**Factory Intergation**	**19/02**	**15/04**	**55 jours**	**0%**
17	**FAT**	**15/04**	**24/04**	**9 jours**	**0%**
20	**trasport**	**24/04**	**03/06**	**40 jours**	**0%**
24	**Rack preparation in Rio**	**19/02**	**27/03**	**36 jours**	**0%**
28	**rack integration in Brasilia**	**19/02**	**30/06**	**131 jours**	**0%**
33	**Training in Brasilia**	**30/06**	**14/07**	**14 jours**	**0%**
35	**Ground backbone preparation**	**11/03**	**25/04**	**45 jours**	**0%**
39	**commissioning**	**25/04**	**10/09**	**138 jours**	**0%**
48	2-Year Guarantee	10/09	09/09	730 jours	0%



APPENDIX C

SERVICES COMMISSIONED WITH MEVA III THROUGH THE INTERCONNECTION MEVAIII REDDIG II

Node Bogota Colombia

- 2 asynchronous AFTN links (From / To Atlanta)
- 1 asynchronous AFTN link (From / To Panama)
- 3 hot lines

  From / To Jamaica

  From / To Curacao

  From / To Panamá
- 8 switched voice links (one for maintenance purposes)

Node Maiquetia Venezuela

The circuits in the node Maiquetia in the MEVA III REDDIG II interconnection are:

- asynchronous AFTN link (To Atlanta)
- asynchronous AFTN link (From / To Curacao)
- 3 hot lines

  From / To Curacao

  From / To Aruba

  From / To Puerto Rico
- 4 switched voice links (one for maintenance purposes)

EQUIPMENT TO BE INSTALLED ON NODES OF BOGOTA AND MAIQUETIA FOR THE MEVA III REDDIG II INTERCONNEXTION

NODE BOGOTA

MODEM EQUIPMENT1- IDU 2570

SKYWAN LICENSE FRAME RELAY PORT
SKYWAN LICENSE 8PSK
SKYWAN LICENSE MESH TOPOLOGY
CABLE INT. RS232 TERMINAL SKYWAN IDU
CABLE INT. X21 DCE IDU-FAD
USER MANUALS SKYWAN IDU7000
DIAL IN MODEM SET SKYWAN IDU 7000/7000C

MULTIPLEXER EQUIPMENT

FAD 9230 BASE UNIT UAC
FAD 8400 BASE UNIT 4 SERIAL PORTS UAC
FAD 92X0 QUAD FXS MODULE

RF EQUIPMENT-

COMBINER / SPLITTER

NODE MAIQUETIA

MODEM EQUIPMENT1- IDU 2570

SKYWAN LICENSE FRAME RELAY PORT
SKYWAN LICENSE 8PSK
SKYWAN LICENSE MESH TOPOLOGY
CABLE INT. RS232 TERMINAL SKYWAN IDU
CABLE INT. X21 DCE IDU-FAD92XX/93XX/8400
USER MANUALS SKYWAN IDU7000 SERIES
DIAL IN MODEM SET SKYWAN IDU 7000/7000C

MULTIPLEXER EQUIPMENT-

FAD 9230 BASE UNIT UAC
FAD 92X0 DUAL SERIAL INTERFACE MODULE
FAD 92X0 QUAD FXS MODULE

RF EQUIPMENT-

COMBINER / SPLITTER 2-fold162,500,000,0004

RACK4.322,504.322,501- PATCH PANEL IDU RFT5X / SMA -N-FEM 1.5m220,00220,001- VARIOUS ITEMS650,00650,005.192,5005.Equipment Sub Total1- Purchase32.502,5006.Equipment Cost (indirect)1- Shipping to Site2.795,002.795,001- Insurance148,66148,661- Import Duties and processing Charges2.943,662.943,6607.Installations1- Site Survey1.560,001.560,001- Installation1.986,401.986,403.546,4008.Training1- On the Job Training1.500,001.500,001- High-level Equipment Training1.250,001.250,001- Restauration Training833,33833,333.583,33NRC Total (Purchase)42.575,89

APPENDIX D

AGREEMENT FOR THE IMPLEMENTATION OF THE INTERCONNECTION MEVA III / REDDIG II

Contract No.22501528

between the

International Civil Aviation Organization

and COMSOFT GmbH

for the Provision of

the Interconnection of the MEVA III and REDDIG II Satellite Telecommunications Networks

for

MEVA III and REDDIG II Member States/Territories/International Organization

Technical Cooperation Bureau

1.0 Introduction, Definitions and Abbreviations

1.1 Introduction

1.1.1 This Contract is entered into between the International Civil Aviation Organization (ICAO) acting on behalf of and as mandatary for the Government of Argentina, Aruba, Bahamas, Bolivia, Brazil, Cayman Islands, Chile, Colombia, Cuba, Dominican Republic, Ecuador, French Guiana, Guyana, Haiti, Honduras, Jamaica, Netherlands Antilles, Panama, Paraguay, Peru, Puerto Rico, Suriname, Trinidad and Tobago, United States, Uruguay and Venezuela, specifically their respective Civil Aeronautical Administration & for the International Organization COCESNA (herein after "MEVA III and REDDIG II Member States/Territories/International Organization"), and COMSOFT GmbH.

1.2 Definitions and Abbreviations

Contract Term	Definition
"ICAO", means	The International Civil Aviation Organization, with Headquarters at 999 University Street, Montreal, Quebec, Canada, H3C 5H7.
"REDDIG II Member States", means	The Government of Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela, specifically their respective Civil Aeronautical Administration.
"MEVA III and REDDIG II Member States/Territories/ /International Organization", means	The Government of Argentina, Aruba, Bolivia, Bahamas, Brazil, Cayman Islands, Chile, Colombia, Cuba, Curacao, Dominican Republic, Ecuador, French Guiana, Guyana, Haiti, Jamaica, Mexico, Panama, Paraguay, Peru, Puerto Rico, Sint Maarten, Suriname, Trinidad and Tobago, United States, Uruguay and Venezuela, specifically their respective Civil Aeronautical Administration and the International Organization COCESNA.
"Contractor", means	COMSOFT GmbH, with Headquarters at Wachhausstr. 5a, 76227 Karlsruhe, Germany.
"Contractor's Appointed Representative", means	An officer notified to ICAO as being authorized to act on behalf of the Contractor.
"ICAO's Appointed Representative", means	An officer notified to the Contractor by the ICAO Director, Technical Co-operation Bureau, as being authorized to act on behalf of ICAO.
"MEVA III and REDDIG II Member States/Territories/ /International Organization's Appointed Representative", means	An officer notified to ICAO and the Contractor as being authorized to act on behalf of MEVA III and REDDIG II Member States/Territories/International Organization.
"REDDIG II & MEVA III TMG", means	REDDIG II and MEVA III Technical Management Group.

"Day", means	Unless otherwise specified, a calendar day.
"Common Start Date", means	The date indicating the beginning of the MEVA III Project Implementation activities, which is the 6 August 2014.

NB: Words in the singular shall also include the plural and vice versa where the context requires or admits.

2.0 Scope of Contract

2.1 This Contract covers the turnkey implementation of the interconnection of the MEVA III and REDDIG II satellite telecommunications networks and subsequent leasing of related voice and data communication services (hereinafter the "Services") to be provided to MEVA III and REDDIG II Member States/Territories/International Organization as outlined in Attachments I through III, V and VII with COMSOFT GmbH as prime Contractor.

3.0 Status of ICAO

3.1 The Contractor recognizes that ICAO has the status of a mandatary of MEVA III and REDDIG II Member States/Territories/International Organization.

3.2 Neither the Contractor nor its personnel shall be considered as an employee or an agent of ICAO.

3.3 Unless otherwise provided for in this Contract, ICAO shall not be liable for claims of any kind arising in connection with the performance of this Contract.

4.0 Responsibilities

4.1. Contractor Responsibilities

4.1.1 The Contractor shall be responsible for the turnkey installation of the MEVA III compatible modems in Caracas, Venezuela and Bogota, Colombia to allow the interconnection of the MEVA III and REDDIG II satellite telecommunications networks and shall provide and be responsible for the personnel, insurance coverage and other resources necessary for the performance of the Services under this Contract.

4.1.2 During the implementation of the Contract and as a result there from, the Contractor shall act as to limit to a minimum any potential impact and/or disruption on all current civil aviation and aeronautical operations in the countries of the MEVA III and REDDIG II Member States/Territories/International Organization. Should there be any foreseeable adverse impact and/or disruption of the existing related operations, an appropriate transition plan shall be submitted to MEVA III and REDDIG II Member States/Territories/International Organization and to REDDIG II & MEVA III TMG by the Contractor and be planned in full coordination with MEVA II and REDDIG Member States/Territories/International Organization and REDDIG II & MEVA III TMG.

4.1.3 The Contractor shall provide the MEVA III and REDDIG II Member States/Territories/International Organization with a written monthly report showing all network end-user's individual characteristics and shall maintain an online database accessible by the users which will include at the minimum the current network status, call record list, call statistics and trouble report list.

4.2 **ICAO Responsibilities**

4.2.1 ICAO, using its best efforts, shall be responsible for facilitating the completion of this Contract and shall undertake in this respect the following:

i. Payment of invoices submitted as per Article 5.2;
ii. Review of reports and approving of works in collaboration with REDDIG II & MEVA III TMG;
iii. Co-ordination of Project Review Meetings with REDDIG II & MEVA III TMG;
iv. Assistance to Contractor in any governmental requirement, such as visa, travel of personnel and/or Equipment shipping;
v. Co-ordination of training with MEVA III and REDDIG II Members States/ /Territories/International Organization, REDDIG II & MEVA III TMG and the Contractor;
vi. Other administrative matters which could reasonably be expected of ICAO to enable the execution of the Contract.

4.3 **MEVA III and REDDIG II Member States/Territories/International Organization Responsibilities**

4.3.1. REDDIG II Member States/Territories/International Organization shall provide the funds necessary to cover the price of this Contract.

4.3.2. MEVA III and REDDIG II Member States/Territories/International Organization will provide access to the sites for the Contractor's personnel together with authorizations to perform all relevant activities.

4.3.3. MEVA III and REDDIG II Member States/Territories/International Organization personnel may be assigned to monitor the implementation of the Services and act as liaison between the Contractor and MEVA III and REDDIG II Member States/Territories/International Organization who shall advise ICAO of any adverse observations.

5.0 Prices And Payment Terms

5.1 **Prices**

5.1.1 The total price of this Contract is **US $79,332.36 (seventy-nine thousand, three hundred and thirty-three United States dollars and thirty-six cents).**

5.1.2 This price is based on a one (1) year leasing Contract, followed by up to four (4) subsequent automatic annual renewals from year 2 to year 5, subject to availability of funds of the REDDIG II Member States/Territories/International Organization, with monthly recurring charges as follows:

Description:	US $ per month	US $ per year
Network access	**2,818.11**	**33,817.32**
- for Brazil	284.30	
- for Caracas (Venezuela)	1,409.06	
- for Bogota (Colombia)	840.45	
- for Peru	284.30	
Total circuit (AFTN/PAMA/DAMA circuits)	**2,331.67**	**27,980.04**
- for Brazil	263.37	
- for Caracas (Venezuela)	907.31	
- for Bogota (Colombia)	897.62	
- for Peru	263.37	
Total Monthly Recurring Price:	**5,149.78**	
Summary of Monthly Recurring Price, per year		**61,797.36**

The above prices are valid for five (5) years from the date of Contract coming into force.

Price validity for optional years after year 5 (subject to Contract Amendment as per Articles 5.1.7 and 24):

i- Site Bogota (Colombia)

Pos.	Description	MRC (in US$)	Duration (Month)	MRC Total (in US$)
01.	Option 1 Year (Contract Prolongation)	2.177,14	12	26.125,63
02.	Option 2 Year (Contract Prolongation)	2.086,42	24	50.074,13
03.	Option 3 Year (Contract Prolongation)	1.995,71	36	71.845,49
04.	Option 4 Year (Contract Prolongation)	1.904,99	48	91.439,71
05.	Option 5 Year (Contract Prolongation)	1.814,28	60	108.856,80

ii- Site Caracas (Venezuela)

Pos.	Description	MRC (in US$)	Duration (Month)	MRC Total (in US$)
01.	Option 1 Year (Contract Prolongation)	2.120,86	12	25.450,27
02.	Option 2 Year (Contract Prolongation)	2.032,49	24	48.779,69
03.	Option 3 Year (Contract Prolongation)	1.944,12	36	69.988,25
04.	Option 4 Year (Contract Prolongation)	1.855,75	48	89.075,95
05.	Option 5 Year (Contract Prolongation)	1.767,38	60	106.042,80

5.1.3 The following Non-Recurring One Time Fee is included in the initial one (1) year leasing period:

Description	(US $)
Site Survey	14,535.00
Network Integration/Installation	
Activation and Operation	
Training Package	3,000.00
Total One Time Fees:	**$17,535.00**

5.1.4 The summary of prices above includes all Services related to this Contract. These prices shall remain firm for one hundred and twenty (120) months from the activation date of the leasing services as defined under this Contract. Such prices are exclusive of taxes and import duties on all goods and/or services imported under this Contract into the countries of the MEVA III and REDDIG II Member States/Territories/International Organization. In the event that any taxes or import duties are levied on the Contractor by the Authorities in such countries on the imported goods and/or services, arrangements will be made by the Authorities in the country to withdraw the levy or such taxes or import duties will be paid by the concerned MEVA III and REDDIG II Member States/Territories/International Organization directly.

5.1.5 The prices for the local services and supplies purchased by the Contractor or subcontracted and carried out in the countries of the MEVA III and REDDIG II Member States/Territories /International Organization in the performance of this contract, if any, include all applicable taxes.

5.1.6 The activation date for the leasing services procured under this Contract shall be the day following the successful acceptance of the interconnection as defined under Article 10.0 (signed Site Acceptance Certificate).

5.1.7 Three months before the end of each annual leasing period, the Contractor shall inform ICAO, the countries of the MEVA III and REDDIG II Member States/Territories/International Organization and the REDDIG II & MEVA III TMG of the scheduled end date of the Services. Following the initial one (1) + four (4) year leasing period as per Article 5.1.2, the Contractor undertakes to accept an amendment to the duration of this Contract should ICAO/ the countries of the MEVA III and REDDIG II Member States/Territories/International Organization's decide to extend the Services for one or more additional years (not exceeding five (5) cumulative years after the initial one (1) + four (4) year leasing period as per Article 5.1.2).

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.	Milestone	Payment Amount

1	Non-Recurring Charges due upon successful network integration (signed Site Acceptance Certificate)	$17,535.00

2	Monthly Recurring Fees (to be paid one month in advance, on a quarterly basis following the successful network integration (signed Site Acceptance Certificate))	$5,149.78

5.2.2 The Contractor shall submit one (1) original invoice plus two (2) copies for the amount due as indicated in Article 5.2.1. All payments shall be effected by bank transfer to the Contractor account indicated below within thirty (30) days after receipt of correct invoice. The bank charges for such transfers shall be borne by the Contractor.

5.2.3 Banking references of the Contractor:

Name of Bank: Deutsche Bank AG
Address: Kaiserstr. 90, 76133 Karlsruhe, Germany
Recipient: COMSOFT GmbH
Account No.: 1005 255
Area Code: 660 700 04
BIC / SWIFT: DEUT DE SM 660
IBAN No.: DE77 6607 0004 0100 5255 00

6.0 Export Licences

6.1 In all cases where export licenses are required for the export of the Services, obtaining any such licenses shall be the responsibility solely of the Contractor.

7.0 Documentation

7.1 Language & Standards

7.1.1 Unless otherwise specified, all reports, correspondence and other technical information concerning this Contract shall be in English (and in Spanish if available) and in the metric system of weights and measures and in other internationally accepted units.

7.2 Manuals, Reports

7.2.1 The Contractor shall provide ICAO/each affected MEVA III and REDDIG II Member States/Territories/International Organization with the following Documentation:

i. Drawings and Diagrams: Two (2) sets (in Spanish if available and in English) of mechanical and electrical schematic diagrams essential for installation, routine maintenance and operation of the equipment, including such drawings as are needed to identify the equipment and its sub-units interconnections (as-built drawings).

8.0 Delivery and Completion

8.1 Delivery, installation and commissioning of the interconnection shall take place by 31 March 2015, except otherwise agreed by the parties in accordance with the approval by REDDIG II & MEVA III TMG of the Contract Implementation Schedule, submitted by the Contractor.

8.2 The Contractor shall submit to ICAO within forty-five (45) days after the Common Start Date (06 August 2014) a detailed Contract Implementation Schedule, presented in weekly segments from the Common Start Date to final acceptance of the Services, based on the Contract Implementation Schedule in Attachment III.

8.3 If delivery of the Services is delayed by a cause constituting a *force majeure* as per Article 30, the delivery schedule shall be extended for such period as is reasonable having regard to all the circumstances of the case. However, if delivery is delayed by any such circumstances for more than 90 Days, ICAO shall be entitled, without granting additional extension, to terminate the contract pursuant to Article 31.

8.4 If the Contractor fails to deliver the Services in accordance with the Contract Implementation Schedule at Attachment III, except for reasons not attributable to him, and adjusted for any extension to which the Contractor may be entitled under Article 30, ICAO shall be entitled, without granting any additional extension, at ICAO's option, to terminate the Contract for default pursuant to Article 31, or to maintain the Contract, accept late delivery and recover damages under Article 29 or any other right or remedy which ICAO has under the terms of this Contract, or by law.

9.0 Site Installation

9.1 The Contractor shall be responsible for the installation of the equipment necessary for the interconnection in Bogotá (Colombia) and Caracas (Venezuela).

9.2 All installation materials, services, personnel, test equipment and tools required for installation of the equipment in Bogotá and Caracas and implementation of the interconnection of the MEVA III and REDDIG II satellite telecommunications networks shall be provided by the Contractor.

9.3 The cost of fares, accommodation and subsistence for Contractor's personnel during the installation and commissioning phase shall be borne by the Contractor.

9.4 Any spare parts or tools and test equipment belonging to the end-user, used to replace faulty items during the installation and check out phases and until acceptance of the Equipment shall be returned in the same condition as received by the Contractor upon Site Acceptance of the Equipment under this Contract.

9.5 During the period of installation, commissioning and acceptance of the system, the Contractor shall accept the participation (for observation purposes) of up to ten (10) local technical Personnel at site. MEVA III and REDDIG II Member States/Territories/International Organization's and the Contractor's representative(s) at the installation sites shall coordinate such participation.

10.0 Site Acceptance Tests (SAT)

10.1 The SAT Procedures shall verify that the links pertaining to the Caracas and Bogotá nodes are properly connected and that the interconnection between both REDDIG II and MEVA III networks is successfully functioning in a true operational environment. The SAT must also verify that all the equipment for the interconnection in Caracas and Bogotá has been installed and that all documentation, drawings, as-built plans, etc., have been completed and delivered.

10.2 The Contractor shall submit to ICAO at least twenty (20) days before the SAT, the proposed SAT Procedures which shall be subject to mutual agreement between the parties.

10.3 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). ICAO/ REDDIG II & MEVA III TMG shall reserve the right to have all the tests or any single test performed again on the equipment under this Contract. All such costs shall be borne by the Contractor, including travel, accommodation and subsistence costs for ICAO/ REDDIG II & MEVA III TMG's representative(s) re-participation.

10.4 Minor defects that do not affect the operation and service of the Equipment, may not permit ICAO/ REDDIG II & MEVA III TMG to refuse to sign the on-Site Acceptance Certificate and the Contractor shall undertake to resolve those defects at its own expense and in an agreed time frame.

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

i. Successful testing of the equipment and services in Bogotá and Caracas sites, between the sites linked with these sites and on the interconnection between both networks;
ii. All Training Programs have been satisfactorily completed.

11.0 Training

11.1 The Contractor shall provide basic on-the-job (OJT) training to six (6) technicians for each of two (2) MEVA III Network sites Caracas, Venezuela and Bogota, Colombia at a price of US $1,500.00 per site. That price includes instructors' fees, teaching and course material, air fare, medical travel insurance, hotel and meals for the instructor. The training material will be sent to the Member State electronically for distribution prior to the course. The Contractor shall also provide one (1) hard copy of the training material upon installation.

11.2 The OJT training shall be provided as outlined in Attachment V.

11.3 The OJT training shall include hands-on experience involving the actual installation of the terminal equipment, operation, trouble-shooting and maintenance. It shall ensure that the technical personnel are competent and comfortable with the functioning of the MEVA III network characteristics..

11.3 The OJT training shall be provided at the respective MEVA III Network Site during the installation in one (1) session for at least one (1) working day per each site.

11.4 All training shall be conducted in Spanish if available, otherwise in English.

11.5 Upon completion of each training course, a certificate shall be issued as per the model at Attachment VI.

12.0 Contractor's Responsibility for Employees

12.1 The Contractor shall be responsible for the professional and technical competence of its employees and will select for work under this Contract reliable individuals who will perform effectively in the implementation of the Contract, respect the local customs and conform to a high standard of moral and ethical conduct.

12.2 The Contractor, its director(s), officer(s), employees and servants shall conform to all applicable laws, regulations and ordinances promulgated by legally constituted authorities of MEVA III and REDDIG II Member States/Territories/International Organization.

12.3 The Contractor expressly acknowledges that the minimum supplier eligibility criteria contained in the supplier eligibility declaration is maintained and is applicable throughout the duration of the Contract.

12.4 Not less than one (1) working day after learning that any of the Contractor's personnel who have access to any MEVA III and REDDIG II Member States/Territories/International Organization premises have been charged by law enforcement authorities with an offense other than a minor traffic offense, the Contractor shall provide written notice to inform ICAO about the particulars of the charges then known and shall continue to inform ICAO concerning all substantial developments regarding the disposition of such charges.

13.0 Assignment of Personnel

13.1 The Contractor shall not assign any personnel other than those referred to in this Contract for the performance of work in the field without the prior written approval of ICAO. Prior to assigning any other personnel for the performance of work in the field, the Contractor shall submit to ICAO for its consideration the curriculum vitae of any person the Contractor proposes to assign for such service.

14.0 Removal of Personnel.

14.1 Upon written request from ICAO and based on a good reason, the Contractor shall withdraw from the field any personnel provided under this Contract and shall replace such personnel by others acceptable to ICAO, if ICAO so requests.

14.2 Such request for withdrawal or replacement shall not be considered as termination in part or in whole of this Contract under the provisions of Article 31 (Termination).

14.3 All costs and additional expenses resulting from any withdrawal or replacement for whatever reason of any of the Contractor's personnel shall be at the Contractor's expense.

15.0 Workmen's Compensation and Other Insurance

15.1 The Contractor shall provide and thereafter maintain appropriate workmen's compensation and liability insurance, with respect to and, prior to the departure for, overseas employment under this Contract of all employees who are hired outside MEVA III and REDDIG II Member States/Territories/International Organization, and who are not citizens of the countries of the MEVA III and REDDIG II Member States/Territories/International Organization. The Contractor shall, upon request, provide ICAO with satisfactory evidence of the insurance required under this Article.

15.2 The Contractor shall comply with the labour laws of the MEVA III and REDDIG II Member States/Territories/International Organization providing for benefits covering injury or death in the course of employment.

16.0 Indemnification

16.1 The Contractor shall indemnify, save and hold harmless, and defend, at its own expense, ICAO, its officials, agents, servants and employees, from and against all suits, claims, demands and liability of any nature or kind, including their costs and expenses, arising out of the acts or omissions of the Contractor or the Contractor's employees, officers, agents or sub-Contractors, in the performance of this Contract. This provision shall extend, *inter alia*, to claims and liability in the nature of workmen's compensation claims, product liability and liability arising out of the use of patented inventions or devices, copyrighted material or other intellectual property by the Contractor, its employees, officers, agents, servants, or sub-Contractors. The obligations under this clause do not lapse upon termination of this Contract.

17.0 Encumbrances/Liens

17.1 The Contractor shall not cause or permit any lien, attachment or other encumbrance by any person to be placed on file in any public office or on file with ICAO against any monies due or to become due for any work done or material furnished under the Contract, or by reason of any other claim or demand against the Contractor.

18.0 Confidential Nature of Documents and Information/Public Disclosure

18.1 All technical, financial or other documentation and data compiled by or received by a Party under this Contract shall be the property of disclosing Party, and as such, shall be treated as confidential, and shall be delivered only to the disclosing Party's authorized officials upon completion of work under this Contract.

18.2 The Contractor shall not communicate at any time to any other person, Government or authority

external to ICAO ICAO/ MEVA III and REDDIG II Member States/Territories/International Organization, any information known by reason of its association with ICAO, which has not been made public except with the authorization of ICAO; nor shall the Contractor at any time use such information for private advantage. These obligations do not lapse upon termination of the Contract.

18.3 Unless authorized in writing, neither Party shall disclose the particulars of the Contract, issue a press-release, advertise or make otherwise public the fact that it is performing, or has performed, this Contract or otherwise provided services for ICAO.

19.0 Copyright, Patents and Other Proprietary Rights

19.1 Unless otherwise specified, MEVA III and REDDIG II Member States/Territories/International Organization shall be entitled to all intellectual property and other proprietary rights including but not limited to copyrights, patents and trademarks, with regard to documents, software, and other materials which are produced or prepared or collected in consequence of or in the course of the execution of the Contract. At ICAO's request, the Contractor shall take all necessary steps, execute all necessary documents and generally assist in securing such proprietary rights for the benefit of MEVA III and REDDIG II Member States/Territories/International Organization in compliance with the requirements of the applicable law.

19.2 It is the Contractor's responsibility to ensure that no intellectual property nor other proprietary rights, including but not limited to, copyrights, patents and trademarks are violated and to defend at its own expense any suit or proceedings based on any claim of an infringement, provided that the Contractor is notified promptly in writing and is given full and complete authority, information and assistance for the defence of same.

20.0 Officials Not to Benefit

20.1 The Contractor warrants that no official of ICAO / MEVA III and REDDIG II Member States/Territories/International Organization has been or shall be admitted by the Contractor to any direct or indirect benefit arising from this Contract or the award thereof.

21.0 Source of Instructions

21.1 The Contractor shall neither seek nor accept instructions from any authority external to ICAO in connection with the performance of the work under this Contract. The Contractor shall refrain from any action, which may adversely affect ICAO / MEVA III and REDDIG II Member States/Territories/International Organization and shall fulfill its commitments with fullest regard for the interest of ICAO / MEVA III and REDDIG II Member States/Territories/International Organization.

22.0 Assignment

22.1 The Contractor shall not assign, transfer, pledge or make other disposition of this Contract or any

part thereof or of any of the Contractor's rights, claims or obligations under this Contract except with the prior written consent of ICAO.

23.0 SubContracting

23.1 In the event the Contractor requires the services of sub-Contractors, the Contractor shall obtain the prior written approval and clearance of ICAO for all sub-Contractors. The approval by ICAO of a sub-Contractor shall not relieve the Contractor of any of its obligations under this Contract, and the terms of any sub-Contract shall be subject to and be in conformity with the provisions of this Contract.

24.0 Contract Amendments

24.1 This Contract including the Attachments may, by agreement between the parties, be amended at any time during the execution of the project.

24.2 Contract amendments shall be effective only when executed and delivered on behalf of ICAO and the Contractor by persons duly authorized in writing to do so.

25.0 Direction of Contract and Interpretation of Specifications

25.1 The Contractor shall perform the work in accordance with the decisions and directions of ICAO given under this Article and any further consequential decisions and directions given by ICAO in the performance of this Contract. Upon notification by ICAO of the details of any failure by the Contractor to meet its obligations, the Contractor shall take corrective action as soon as possible but in any event within two (2) weeks, failing which ICAO reserves the right to terminate the Contract in accordance with Article 31.1. Such directions shall be given in writing. If verbal instructions must be given, such shall be confirmed in writing within seven (7) days. In case of any decisions and/or directions of ICAO in the performance of the Contract constituting a deviation, change or amendment to the original specifications and which may give rise to additional expenses, the Contractor may submit to ICAO for its consideration a statement detailing the cost consequences of such deviation, change or amendment. Any such deviation, change or amendment, in order to be effective, shall be executed by way of a Contract amendment in accordance with Article 24.2 prior to its implementation.

25.2 ICAO reserves the right of adjudication should any question arise at any time prior to approval of the Services regarding the interpretation of any provision of the specifications and any other technical documentation incorporated in this Contract.

25.3 ICAO may order the Contractor in writing to suspend all or any part of the work for a period of time deemed appropriate by ICAO/MEVA III and REDDIG II Member States/Territories/International Organization. In this case, the Contract shall be amended in accordance with Article 24.2 and the Contractor may submit to ICAO for its consideration a statement detailing the reasonable costs of such amendment.

26.0 Regulatory Requirements

26.1 It shall be the Contractor's responsibility to ensure that it is fully in compliance with all applicable laws, enactments, rules, regulations, patents and procedures of the civil aviation industry which have been established by the MEVA III and REDDIG II Member States/Territories/International Organization, their relevant regulatory bodies or by any regulatory body with jurisdiction over any aspect of the scope of works of the Contract.

27.0 Licences

27.1 If any licence or permit is required for the performance of the Contract, the Contractor shall obtain any such licence or permit.

28.0 Packing

28.1 The Contractor warrants that the goods, including packaging, conform to the specifications for the goods ordered under this Contract and are fit for the purposes for which such goods are ordinarily used and for purposes expressly made known to the Contractor by ICAO, and are free from defects in design, workmanship and materials.

28.2 The Contractor also warrants that the goods are packaged and marked for the purpose of transportation in a proper manner in order to protect the goods in accordance with any statutory requirement, any requirements of the carriers, and any shipping instructions from ICAO.

29.0 Damages / Penalties

29.1 Subject to the provisions of Article 30 (*Force Majeure*) hereof and without prejudice to any action which ICAO is empowered to take pursuant to the provision of any Article of this Contract or by law, if the Contractor fails to effect delivery of the Services in accordance with the Contract, then the Contractor shall become liable to pay to ICAO / MEVA III and REDDIG II Member States/Territories/International Organization penalties in this Contract's currency according to the scheme stipulated in Attachment VII (SLA).

29.2 Notwithstanding Article 29, paragraph 1, in case of the Contractor's significant delay in the implementation of the project or its negligent failure to fulfill any of its obligations under the terms of the Contract, ICAO/MEVA III and REDDIG II Member States/Territories/International Organization shall have the right to claim and recover from the Contractor all proven damages incurred by ICAO, or MEVA III and REDDIG II Member States/Territories/International Organization, or both. Save in the case of gross negligence, the total liability of the Contractor for such proven damages shall not exceed the total value of the Contract and shall exclude indirect or punitive damages. The recovery of proven damages shall not be excluded for the period of delay referred to in paragraph 29.1, but shall not be claimed in addition to the liquidated damages.

29.3 Without prejudice to any right to recover any sum under this Article, ICAO/ MEVA III and REDDIG II Member States/Territories/International Organization is entitled to require the

Contractor to fulfil all obligations under the Contract.

29.4 ICAO/ MEVA III and REDDIG II Member States/Territories/International Organization reserves the right to recover its damages/penalties by means of set-off, withholding of payments and/or recourse to the Bank Guarantee.

30.0 Force Majeure

30.1 *Force Majeure* as used herein shall mean acts of God, laws or regulations, industrial disturbances, acts of the public enemy, civil disturbances, explosions and any other similar cause of equivalent force not caused by nor within the control of either party and which neither party is able to overcome. As soon as possible after the occurrence of any cause constituting *force majeure*, the Contractor shall give notice and full particulars in writing to ICAO of such *force majeure* if the Contractor is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under this Contract. In this event, the following provisions shall apply:

a) The obligations and responsibilities of the Contractor under this Contract shall be suspended to the extent of its inability to perform them and for as long as such inability continues;

b) The term of this Contract shall be extended for a period equal to the period of suspension taking, however, into account any special conditions which may cause the time for completion of the work to be different from the period of suspension;

c) If the Contractor is rendered permanently unable, wholly or in part, by reason of *force majeure* to perform its obligations and meet its responsibilities under this Contract, ICAO shall have the right to terminate this Contract on the same terms and conditions as are provided for in Article 31 (Termination);

d) For the purpose of the preceding subsection, ICAO may consider the Contractor permanently unable to perform in case of any period of suspension in excess of ninety (90) days. Any such period of ninety (90) days or less shall be deemed temporary inability to perform.

31.0 Termination

31.1 ICAO may terminate this Contract for cause or default in whole or in part at any time, upon giving written notice to the Contractor. The termination notice shall be sent by certified mail, return receipt requested. Upon receipt of notice of termination, the Contractor shall take immediate steps to bring the work and services to a close in a prompt and orderly manner, shall reduce expenses to a minimum and shall not undertake any forward commitment from the date of receipt of notice of termination.

31.2 ICAO shall pay the Contractor for work and service satisfactorily performed and accepted by ICAO, for expenses necessary for the prompt and orderly termination of the work, and for such urgent and essential work as the Contractor is asked by ICAO to complete. In the event such termination is caused by the Contractor's negligence or fault, no payment shall be due from ICAO to the Contractor except for work and services completed to ICAO's satisfaction and

accepted by ICAO.

31.3 ICAO may terminate this Contract at any time should ICAO's mandate be curtailed or terminated. In such case the Contractor shall be reimbursed by ICAO/MEVA III and REDDIG II Member States/Territories/International Organization for all reasonable costs incurred by the Contractor prior to receipt of the notice of termination.

31.4 ICAO may also terminate the Contract for convenience at any time in full agreement with MEVA III and REDDIG II Member States/Territories/International Organization. In such case, the Contractor shall be reimbursed by ICAO/MEVA III and REDDIG II Member States/Territories/International Organization for all reasonable costs incurred by the Contractor prior to receipt of the notice of termination.

32.0 Bankruptcy

32.1 Should bankruptcy or winding-up procedures be initiated against the Contractor, or should the Contractor be adjudged bankrupt, or should the Contractor make a general assignment for the benefit of its creditors, or should a receiver be appointed on account of the Contractor's insolvency, ICAO may, without prejudice to any other right or remedy it may have under the terms of this Contract, terminate this Contract forthwith by giving the Contractor written notice of such termination in accordance with the provisions of Article 31.

32.2 The Contractor must advise ICAO within twenty-four (24) hours of the occurrence of any event described in this Article.

33.0 Change in Ownership

33.1 The Contractor shall inform ICAO as early as possible of any change or anticipated change in the status of the Contractor or its ownership that may affect its ability to render the Services mentioned herein, as soon as such information is known to the Contractor.

34.0 Settlement of Disputes

34.1 **Amicable Settlement: Negotiations**

The parties shall use their best efforts to settle amicably through negotiation any dispute, controversy or claim arising out of, or relating to, this Contract or the breach, termination or invalidity thereof, within a time period of ninety (90) days.

34.2 **Arbitration**

Any dispute, controversy or claim arising out of or relating to this Contract, or the breach, termination or invalidity thereof, unless settled amicably under the preceding paragraph of this Article within ninety (90) days, shall be referred by either party to arbitration in accordance with the UNCITRAL Arbitration Rules then prevailing. The parties agree that the arbitration be conducted by an arbitral tribunal consisting of a sole arbitrator. If the parties cannot agree on a

sole arbitrator within sixty (60) days, the appointment of the arbitrator shall be made in accordance with Article 8 of the UNCITRAL Arbitration Rules. The place of arbitration shall be Montreal, Quebec, Canada, and it shall be conducted in the English language.

35.0 Applicable Law

35.1 This Contract shall be governed by the laws of the Province of Quebec, Canada, without regard to its conflict of laws principles.

36.0 Notices

36.1 Any notices given by the parties to the Contract shall be sent in writing addressed as follows:

ICAO To:
Director, Technical Co-operation Bureau
Attn.: Chief, Procurement Section
Technical Co-operation Bureau
International Civil Aviation Organization
999 University Street
Montreal, Quebec, Canada H3C 5H7

Contractor To:
COMSOFT GmbH
Attn. Mr. Manfred Schmid (CEO)
Wachhausstr. 5a
76227 Karlsruhe, Germany
Tel. +49-721-9497-0
Fax +49-721-9497-129

36.2 Notices hereunder shall be effective when received.

37.0 ICAO Privileges and Immunities

37.1 Nothing in or relating to this Contract shall be deemed a waiver, express or implied, of any immunity from suit or legal process or any privilege, exemption or other immunity enjoyed or which may be enjoyed by ICAO, its officers and staff, either pursuant to the *Convention on the Privileges and Immunities of the Specialized Agencies* or other conventions, agreements, laws or decrees of an international character.

38.0 Use of Name, Emblem or Official Seal of ICAO

38.1 Unless authorized in writing by ICAO, the Contractor shall not advertise or otherwise make public the fact that it is performing, or has performed services for ICAO, or use the name, emblem or official seal of ICAO or any abbreviation of the name of ICAO for advertising purposes or for any other purpose.

39.0 Complete Nature of Agreement

39.1 This Contract constitutes the complete and exclusive statement of the Contract between the parties and supersedes all proposals or all other communications, verbal and/or written arrangements or agreements, between the parties relating to the subject matter of this Contract, unless the Contract is changed, amended or modified in accordance with Article 24 of this Contract.

40.0 Partial Invalidity

40.1 If any provision of this Contract is or becomes invalid, illegal or unenforceable by force of law, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

41.0 List of Attachments

Attachment	Description
I	Technical Specifications
II	Scope of Supply and Pricing
III	Contract Implementation Schedule
IV	Model Site Acceptance Certificate
V	Training Description
VI	Model of Training Course Completion Certificate
VII	Service Level Agreement (SLA)

42.0 Coming into Force of the Contract and Activation Date of Leasing Services

42.1 The Contract shall come into force at the time of signature of the Contract by ICAO and COMSOFT GmbH.

42.2 Subject to the conditions of Article 42.1, the Contract Implementation shall start on the Common Start Date agreed between REDDIG II & MEVA III TMG and COMSOFT GmbH, which is the 6 August 2014.

42.3 The activation date for the leasing services procured under this Contract shall be the day following the successful acceptance of the interconnection as defined under Article 10 (signed Site Acceptance Certificate).

43.0 Signatures

The Signatures hereunder are those of authorized officers empowered to enter into Contractual obligations.

Signed on 14 NOVEMBER 2014., on behalf of:
Date

ICAO
Technical Co-operation Bureau

Technical Co-operation Bureau

COMSOFT GmbH

Agenda Item 5: Financial situation of the project and approval of the Budget

5.1 Under this Agenda Item, the Meeting took note of the expenses incurred by Project RLA/03/901 and the situation of cost-sharing contributions in 2014.

Summary of expenditures incurred by Project RLA/03/901 between 2003 and 2014

5.2 Table # 1 shows the expenditures incurred by Project RLA/03/901. The project spent USD 5,495,805 in 2014 (expenditures corresponding to 2014 are subject to confirmation based on financial statements), and a total of USD 11,735,489 from 2003 to 2014.

5.3 Table # 2 contains a bar chart with the distribution of project expenditures by year, as well as a pie chart that showing the percentage of implementation of each budget component.

Status of cost sharing contributions

5.4 The Meeting took note of the status of the cost sharing contributions listed in Table # 3. To date, the total contributions amount to USD 12,704,350. Subtracting the costs of USD 11,735,489, there is a positive balance of USD 968,861.

5.5 Subsequently, it was informed that by the end of 2014, a payment of USD 1,101 from Chile was received, as well as a contribution of USD 354,322.56 from Brazil corresponding to the Brazilian node. The above indicated Tables 1, 2 and 3 are shown in **Appendix A.**

Updating of project budget

5.6 Subsequently, the Meeting took note on the proposed Project RLA/03/901 budget Revision, aimed mainly to update the expenses as of 2014 and the REDDIG II acquisition costs.

5.7 Regarding the new MEVA /REDDIG interconnection for the COCESNA case, it was informed that the arrangements for the update of the Agreement between ICAO and COCESNA (Project RLA/09/901) are being carried out. It will include the expenses regarding the implementation, installation and corresponding services of the new MEVA II / REDDIG II interconnection.

5.8 Finally, after examining the Project budget revision, prepared by the Secretariat, the Meeting agreed to adopt the following conclusion:

Conclusion RCC/18-3 Approval of the Project RLA/03/901 budget Revision

That the Eighteenth Meeting of the Coordination Committee of Project RLA/03/901 approve the Project RLA/03/901 budget, as shown in the **Appendix B** to the Report on Agenda Item 5.

5.9 The Meeting expressed their concern of the late payment of contributions for 2012, 2013 and 2014 by Suriname and in this sense, formulated the following conclusion:

Conclusion RCC/18-4 Delay in the payment of cost sharing contributions to the Project RLA/03/901 - Suriname

That the Secretariat takes the necessary actions to inform Suriname about the need to comply with the payment of cost sharing contributions in order that the REDDIG project has the necessary funds for the network management; among the actions to be taken are considered the delivery of a communication, having a teleconference with all the member States of the project or a high level visit to the State.

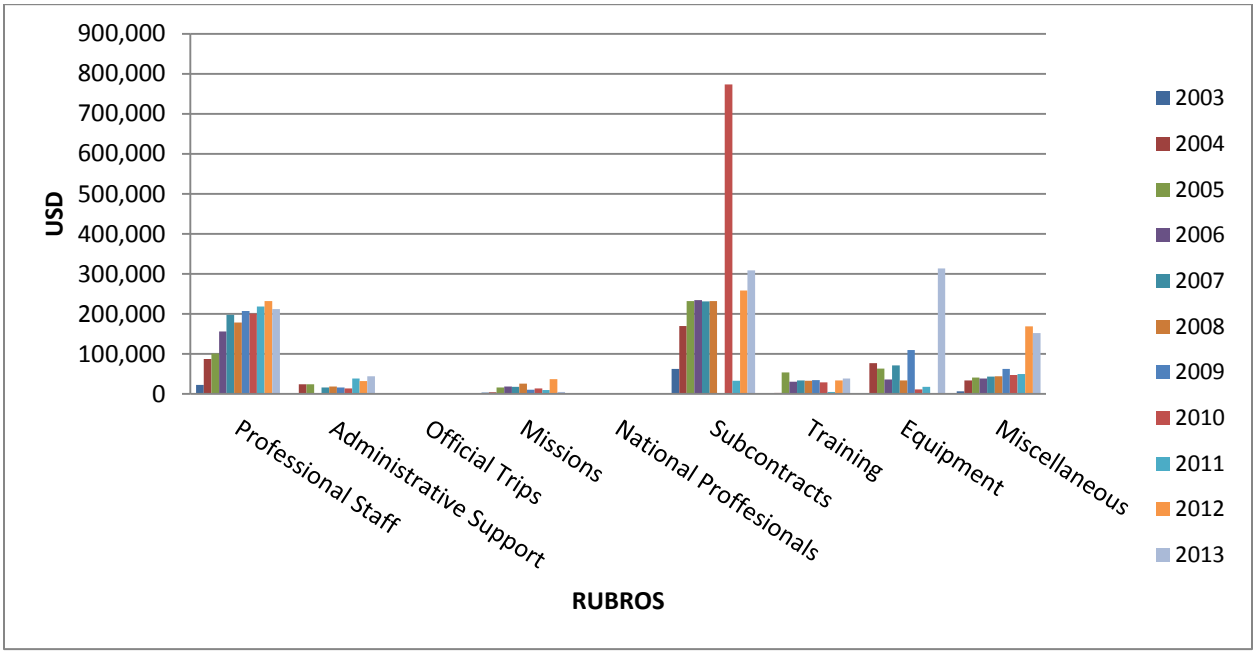
APPENDIX A

Table # 1 - Detailed breakdown of expenditures up to 31 December 2013

(expenditures in 2013 are subject to confirmation with the final financial statements)

	CONCEPT	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	TOTAL
BL 11	**Experts**												
	REDDIG Administrator	22,359	93,953	101,296	156,503	197,784	177,449	207,289	201,030	209,250	232,544	212,112	**1,811,569**
	Consultants		(6,303)				1,499			9,200	0	0	**4,396**
BL 13	**Administrative Support**												**0**
13-01	Secretary	354	12,185	12,551		15,968	11,471	16,497	14,066	19,086	19,443	17,183	**138,804**
13-02	REDDIG Technician		12,000	12,108	711								**24,819**
13-04	Secretary						7,516						**7,516**
13-05	Administrative and financial assistant									10,670	12,831	15,508	**39,009**
13-06	Information technology clerk									8,931	107	11,425	**20,463**
BL 15	**Official trips**		321	925	499						0	0	**1,745**
BL 16	**Missions**	3,504	4,110	16,732	18,642	18,357	25,718	10,615	14,110	10,250	36,747	5,075	**163,860**
BL 17	**National professionals**							2,080		961			**3,041**
BL 20	**Subcontracts**												**20**
21-01	Pan Am sat (P.O. 40670)												**0**
21-01	P.O. 30473(1 Oct 2003 to 31 Dec 2003)	62,727											**62,727**
21-01	P.O. 40670 (1 Jan 2005 to 31 Dec 2008)		168,849	231,264	231,264	231,264	231,264						**1,093,905**
21-01	Rent 2009-2011								693,792				**693,792**
21-01	Rent 2012-2014										233,826	231,264	**465,090**
21-02	Network Access									32,831	24,650	77,518	**134,999**
21-07	MEVA/REDDIG Non Recurrent								77,684				**77,684**
21-98	Professional liability insurance		845	1,156	3,469		1,156	1,156	1,810		0	0	**9,592**
BL 39	**Training**		**3,014**	**53,862**	**30,553**	**34,044**	**32,852**	**34,413**	**29,496**	**5,130**	**33,591**	**38,422**	**295,376**
40	**Equipment**												**0**
45-01	**Spare parts**		**-12,752**	**59,541**	**36,311**	**71,637**	**33,997**	**108,509**	**8,218**	**2,896**	**635**	**3,600**	**312,592**
45-02	**Office equipment**	**82**	**0**	**2,083**	**-30**	**0**	**0**	**0**	**351**	**3,402**	**757**	**3,128**	**9,773**
45-03	Equipment operation and maintenance		1,716						1,676	2,009		0	**5,401**
45-03	PO 50522 VIASAT Modem Repair SYGC			1,603									**1,603**
45-03	CB LIMA			179									**179**
45-04	Transfer of NCC from SPIM to SBMN												**0**
45-04	P.O. 040694 VIASAT		8,250										**8,250**
45-04	P.O. 040687 MEMOTEC		4,250										**4,250**
45-05	Extension of SEEE contract (P.O. 40489)		50,000										**50,000**
45-06	SEEE backup network (P.O. 04090)		24,820										**24,820**
45-09	Interconection equipment MEVA-REDDIG									9,439			**9,439**
45-10	REDDIG II Acquisition											307,004	**307,004**
45-98	Professional liability insurance		444	284	246		130	1,109	1,250		0	0	**3,463**
50	**MISCELLANEOUS**												**0**
53-01	Miscellaneous expenses	643	4,726	4,475	1,150	8,688	4,632	3,703	14,253	13,351	11,518	8,340	**75,479**
53-02	PNUD services		118	505	337			3,318				0	**4,278**
55.01	Administrative costs	6,439	28,795	35,817	37,372	34,601	39,503	55,621	33,357	36,539	157,229	143,555	**608,828**
	TOTAL	**96,108**	**399,341**	**534,381**	**517,027**	**612,343**	**567,187**	**444,309**	**1,091,093**	**373,945**	**763,878**	**1,074,134**	**6,473,746**

Table # 2
Distribution of project expenditures per year



Percentage of implementation by each budget component

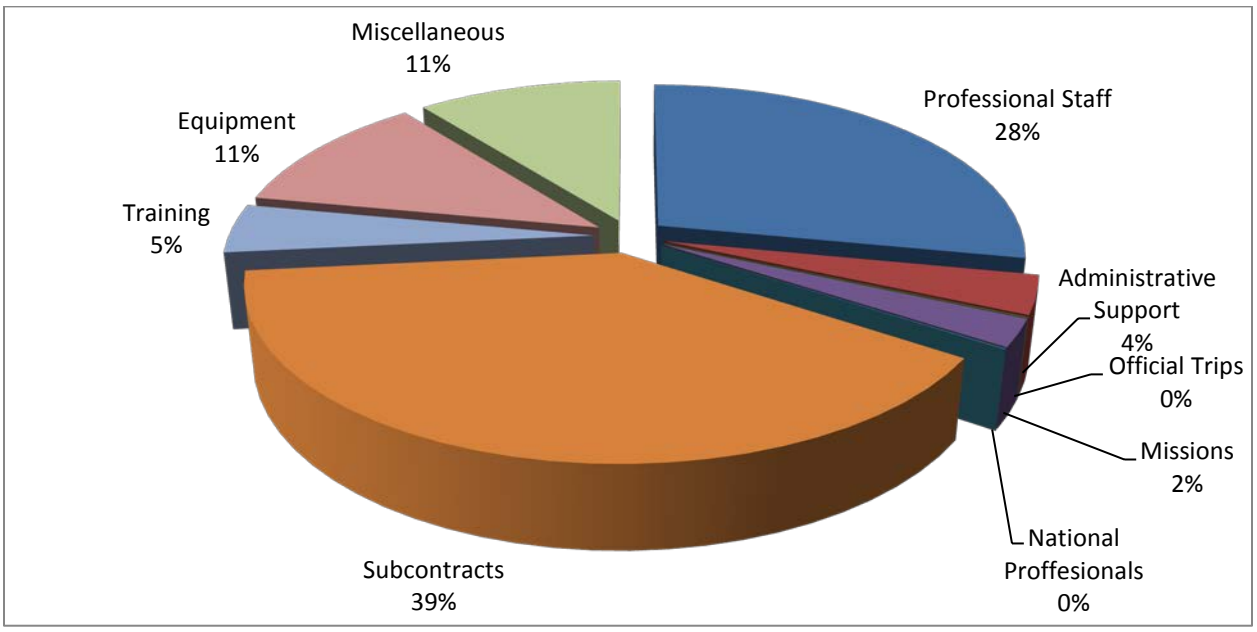


Table # 3 - Status of cost-sharing contributions to Project RLA/03/901

	2003-2006		1 July 2007		1 July 2008		1 July 2009		1 July 2010		1 July 2011		1 July 2012		1 July 2013		Totals		
	Quota	Paid	Quota	Paid	Quota	Paid	Quota	Paid	Quota	Paid	Quota	Paid	Quota	Paid	Quota	Paid	Quota	Paid	Debts
Argentina	163,063	**167,483**	66,700	**65,423**	80,000	**77,660**	85,063	**85,559**	86,201	**0**	82,500	**167,402**	363,218	**281,230**	123,934	**205,922**	1,050,679	**1,050,679**	0
Bolivia	124,163	**124,143**	10,900	**0**	43,675	**54,595**	52,460	**52,460**	48,039	**48,039**	43,924	**43,924**	324,355	**324,345**	74,603	**62,820**	722,119	**710,326**	11,793
Brasil	387,090	**389,855**	60,800	**58,035**	81,444	**81,444**	118,154	**118,039**	137,644	**142,700**	148,003	**148,003**	993,893	**993,893**	193,683	**235,239**	2,120,711	**2,167,208**	-46,497
Chile	178,513	**207,223**	28,710	**0**	29,500	**29,500**	29,500	**29,500**	1,000	**1,000**	45,000	**45,000**	44,791	**44,791**	346,919	**346,919**	703,933	**703,933**	0
Colombia	186,363	**186,363**	150,000	**0**	0	**150,000**	7,441	**7,441**	0	**0**	67,201	**67,201**	346,822	**412,394**	65,572	**0**	823,399	**823,399**	0
Ecuador	110,713	**110,713**	19,000	**19,000**	40,865	**40,865**	51,589	**51,589**	35,000	**35,000**	35,000	**35,000**	328,951	**328,951**	63,882	**65,598**	685,000	**686,716**	-1,716
Francia	93,373	**93,363**	25,000	**25,000**	45,795	**45,795**	51,371	**51,371**	24,092	**24,092**	42,203	**42,178**	323,622	**323,572**	62,981	**0**	668,437	**605,371**	63,066
Guyana	87,013	**64,487**	15,000	**27,854**	35,935	**35,378**	43,009	**29,119**	30,000	**43,870**	30,000	**63,148**	314,398	**328,347**	57,193	**21,696**	612,548	**613,899**	-1,351
Paraguay	100,663	**100,663**	25,600	**25,600**	46,160	**46,160**	53,262	**53,262**	47,056	**0**	40,162	**87,148**	323,098	**323,048**	68,543	**64,899**	704,544	**700,780**	3,764
Peru	154,113	**154,103**	40,000	**40,010**	71,372	**71,372**	77,820	**77,820**	78,271	**0**	77,000	**155,271**	349,287	**349,287**	76,474	**76,474**	924,337	**924,337**	0
Suriname	88,913	**60,198**	18,300	**0**	36,412	**28,670**	44,752	**18,330**	30,000	**0**	30,000	**111,164**	318,461	**311,215**	62,017	**0**	628,855	**529,577**	99,278
Uruguay	120,513	**120,483**	77,171	**77,156**	64,003	**52,871**	39,759	**39,729**	30,000	**29,970**	30,000	**29,971**	325,269	**333,134**	63,551	**66,541**	750,266	**749,855**	411
Venezuela	133,013	**133,013**	38,700	**38,700**	71,774	**71,774**	81,664	**81,664**	88,967	**88,967**	80,000	**80,000**	368,283	**368,283**	85,800	**100,980**	948,201	**963,381**	-15,180
Trinidad yTabago	45,400	**45,384**	15,500	**15,500**	37,791	**37,787**	48,776	**48,776**	30,000	**29,980**	30,000	**0**	318,571	**318,528**	45,913	**91,605**	571,951	**587,560**	-15,609
COCESNA							0	**0**	28,400	**0**	19,193	**65,145**	19,193	**19,178**	19,193	**19,178**	85,979	**103,501**	-17,522
Sub-Totals	**1,972,906**	**1,957,475**	**591,381**	**392,278**	**684,726**	**823,871**	**784,620**	**744,659**	**694,670**	**443,618**	**800,186**	**1,140,555**	**5,062,212**	**5,060,196**	**1,410,258**	**1,357,871**	**12,000,959**	**11,920,523**	**80,436**
Interests	32,054	**32,054**	17,065	**17,065**	8,630	**8,630**	2,023	**2,023**	785	**785**	468	**468**	2,776	**2,776**	1,211	**1,211**	63,801	**63,801**	
Adjustments							-75	**-75**	-15	**-15**	379	**379**	-164	**-164**	84,748	**84,748**	125	**125**	
Sub-Totals	**32,054**	**32,054**	**17,065**	**17,065**	**8,630**	**8,630**	**1,948**	**1,948**	**770**	**770**	**847**	**847**	**2,612**	**2,612**	**85,959**	**85,959**	**63,926**	**63,926**	
Totals	**2,004,960**	**1,989,529**	**608,446**	**409,343**	**693,356**	**832,501**	**786,568**	**746,607**	**695,440**	**444,388**	**801,033**	**1,141,402**	**5,064,824**	**5,062,808**	**1,496,217**	**1,443,830**	**12,064,885**	**11,984,449**	**80,436**

NOTE: Some differences between the amount deposited by the States and that shown by ICAO are due to transaction costs or exchange rates.

Agenda Item 6: Annual project evaluation

6.1 Under this Agenda Item, the Meeting took note on the information submitted in WP/06 regarding the project appraisal documents, namely:

a) Project status as of 31 December of each year and management and result indicators (WP/06, Appendix A);
b) Project monitoring and control, work plan for year 2015 (WP/06, Appendix B); and,
c) Survey on management and result indicators (WP/06, Appendix C).

6.2 The survey on management and result indicator for 2014 was completed by Argentina, Brazil, Chile, Ecuador, Guyana, Paraguay, Peru, Trinidad and Tobago, and Uruguay. The consolidated information is shown as **Appendix** to this Agenda Item.

6.3 In relation to the assessment of the project at present, it was noted that, in general, the project objectives and scope were adequate and that the objectives are being met adequately.

6.4 The Meeting exchange opinions on the achievements and project management, highlighting as positive lessons learned the active participation of all member states of the project, as well as the management in all phases of implementation for the REDDIG II through conducting continues teleconference, which were appropriate for all member states in decision-making. Regarding the opportunity for improvement, it was highlighted the importance that the staff in charge of maintaining the REDDIG II have an ongoing training program.

6.5 Regarding the evaluation results of the progress of the Project in 2014, formulated by the States who completed the survey, it was informed that it received an average score of 4.2 on a maximum of 5 which in accordance with the respective scale means that the project objectives were achieved in all cases.

APPENDIX
REDDIG Management System and Satellite Segment Administration

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS

Section I: Evaluation of current project
Section II: Assessment of compliance with objectives
Section III: Evaluation of implementation and delivery of services by ICAO
Section IV: Lessons learned

5.0	Exceptional results beyond project requirements
4.5	Exceeds requirements
4.0	Project objectives were achieved in all cases
3.5	Most of the project's objectives were achieved
3.0	Some quality results were achieved and implemented
2.5	Some quality results were achieved but are not implementable
2.0	Some results were achieved with little impact and quality
1.5	Below the expected results
1.0	Well below the expected results

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS
I. EVALUATION OF CURRENT PROJECT

1.-Project objectives Do you think the project's objectives are set correctly according to the development priorities of your State in relation to the National Air Navigation Plan to serve the reality of civil aviation?		Evaluation
ARG	The objectives of the project are set according with the priorities set os objetivos del proyecto estan en consonancia con	4.5
BOL		
BRA	Yes	4.5
CHI		5
COL		
ECU	Yes. The objectives are aligned with the National Air Navigation Plan.	4
GUY		4
PAR		4.5
PER		4
URU	The project objectives contemplated the priorities of our state in relation to PNNA.	4
VEN		
T&T		4
	AVERAGE	**4.3**

2.- Support at regional and global level Do you think that the project responds and supports your administration with the commitments of the Regional and Global		Evaluation
ARG	The project contributes to the commitments of regional and global plan, as well as the goals derived therefrom (Declaration of Bogotá)	4.5
BOL		
BRA	Yes.	5
CHI		5
COL		
ECU	The project meets requirements and regional commitments and is part of the Global Air Navigation Plan.	4
GUY		4
PAR		4.5
PER		4.5
URU	We believe that responds and supports the commitments of our administration versus Regional and Global Air Navigation Plan.	4
VEN		
T&T		4
	AVERAGE	**4.4**

3.-Comments of the State(s) Do you have any comments on the direction of the project?		Evaluation
ARG	Project management is very professional and participatory.	4.5
BOL		
BRA		5
CHI	It is in the right direction, considering the actual and future needs of the Aeronavigation, concieling them with the technological advances.	4.5
COL		
ECU	Cutting edge technology, to manage current and future aeronautical applications.	
GUY		4
PAR		4.5
PER	Is effective.	5
URU	The direction of the project meets its objectives to the satisfaction of our administration.	5
T&T		4
	AVERAGE	**4.6**

4.-Strategy and vision Do you consider that the project meets your institution's strategy and vision that has at long term?		Evaluation
ARG	The project responds to the strategic guidelines in promoting technological innovation necessary to incorporate new applications developed for aeronautical telecommunications services.	4.5
BOL		
BRA		4.5
CHI	Yes, considering that it is pointed to be an intelligent public service, with excelente and environment responsibility, that contributes with the safety, sustainable and efficiten development of the air activities of the country.	4.5
COL		
ECU	Yes. The project contributes to fulfill the institutional mission.	4
GUY	Yes.	4
PAR		4
PER		4.5
URU	The project responds to the strategy and long-term vision of our management.	4
T&T		4
	AVERAGE	**4.2**

5.-Project quality What opinion deserves you the content of this project to achieve the expected objectives?		Evaluation
ARG		4.5
BOL		
BRA	The Brazilian administration is of the opinion that this project is essential for the ATM development in the Region.	5
CHI	It is consistent with the expected goals of having a Regional Aeronautical Telecommunications Network, under the concept of CNS / ATM, with backrest.	4.5
COL		
ECU	Yes. We collected the operational technical requirements of States to meet and satisfy expectations.	3.5
GUY		4
PAR		4.5
PER		4.5
URU	The quality of the project is within expectations and within the desired target.	4
T&T		4
	AVERAGE	**4.3**

6- Project resources Do you consider that the financial, physical and human resources agreed to achieve the objectives established in the project document are appropriate?		Evaluation
ARG	Yes.	4
BOL		
BRA	Yes.	5
CHI		4.5
COL		
ECU	Yes. They are appropriate.	4
GUY		4
PAR		4
PER	Increased training budget is desirable.	4
URU	Financial, physical and human resources used for the project are sufficient and adequate.	3
T&T	Yes. It's well balanced.	4
	AVERAGE	**4.1**

7.-Project participants Do you consider that all parties that should be involved in the project are present? If it is not so, who should be involved?		Evaluation
ARG	Yes.	4
BOL		
BRA		5
CHI		4.5
COL		
ECU	Yes.	4
GUY		4
PAR		4
PER		5
URU	All parties involved are necessary and have been actively involved.	4
T&T		4
	AVERAGE	**4.3**

8.-Project effectiveness Is the project effective in costs compared to similar programs or projects?		Evaluation
ARG	Yes.	4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. The project has demonstrated to be effective.	4
GUY		4
PAR		4
PER		4
URU	This project effectively meets its development, like other previous projects.	4.5
T&T		4
	AVERAGE	**4.2**

9.-Modification of project objectives What modifications to the objectives and scope of the project would you propose?	
ARG	Update the terms of the immediate objectives, taking into account the activities completed. For example, once achieved results Immediate 4 Objective, could merge with Immediate Objective 2.
BOL	
BRA	
CHI	
COL	
ECU	No. None.
GUY	NIL
PAR	
PER	
URU	We would not have changes in scope and objective of the project.
T&T	

10.-Other information	
Please provide any other information that may support or clarify your perception of the current project scope.	
ARG	
BOL	
BRA	
CHI	
COL	
ECU	No. None.
GUY	NIL
PAR	
PER	
URU	We want the REDDIG II according to expectations, project exceeds the performance of the REDDIG I was very high.
T&T	

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS
II. ASSESSMENT OF OBJECTIVES COMPLIANCE

1.-Project objectives		**Evaluation**
In terms of project management by ICAO, do you think that project objectives are being met?		
ARG	Yes.	4
BOL		
BRA		5
CHI		4.5
COL		
ECU	Yes. The objectives were met.	4
GUY	ICAO doing excellent job.	4.5
PAR		4
PER		4.5
URU	We believe that ICAO is fulfilling the objectives of the project, successfully overcoming all obstacles they may appear.	4
T&T	ICAO is doing a great job.	4.5
	AVERAGE	**4.3**

2.- Project Schedule		**Evaluation**
In terms of project management by ICAO, do you think that project objectives are being met?		
ARG	Yes.	4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. Delays have been the responsibility of the contractor and have been assumed by them.	3.5
GUY		4
PAR		4
PER		4
URU	Delays of objectives have been generated by suppliers of the project, the direction of the essential project to negotiate them within the contractual framework.	4
T&T	Despite some issues, yes.	4
	AVERAGE	**4.1**

3.-Use of resources		**Evaluation**
Do you consider that in meeting the objectives are being used, or have been used, resources efficiently?		
ARG	Yes.	4
BOL		
BRA		5
CHI		4.5
COL		
ECU	Yes. The resources are used efficiently.	4
GUY		4
PAR		4
PER		4.5
URU	Resources are adminitran correctly.	4.5
T&T		4
	AVERAGE	**4.3**

4.- Project cost		Evaluation
Do you consider that in meeting the objectives are being used, or have been used, resources efficiently?		
ARG	Yes.	4
BOL		
BRA		5
CHI		4.5
COL		
ECU	Yes. They have been efficient.	4
GUY		4
PAR		4.5
PER		4
URU	Costs relating meet the desired objectives and adequately achieved.	4
T&T		4
	AVERAGE	**4.2**

5.-Major achievements		Evaluation
What are the main achievements of the project in relation to the expected results?		
ARG	The implementation of the REDDIG II.	4.5
BOL		
BRA		
CHI	Interconnection with MEVA II, the addition of new services and the implementation of REDDIG II.	4.5
COL		
ECU	Yes. High availability, user satisfaction, satisfactory levels of service.	4
GUY		4
PAR		4.5
PER		4.5
URU	So far, leaving aside unforeseen during installation of the nodes, the achievements of the project are expected.	4
T&T	Currently all works well. Better voice circuit quality.	4
	AVERAGE	**4.3**

6.-Major problems and their resolution What are the main problems affecting the achievement of the expected results and how should them be resolved?		Evaluation
ARG	Delays by successful tenderer regarding the processes associated with the installation of REDDIG II nodes and their implementation. It is understood that from the FSAT this issue would be resolved by applying the procedures developed for this purpose.	
BOL		
BRA		
CHI	Basically logistical problems in regard to customs management by individual states. You could make a standard procedure and distribute it to each administration as an information and referral to follow.	4
COL		
ECU	Yes. The problems identified are related to the configuration of the applications of equipment or systems user but not by the media as the connectivity is good communication channels are available. Because of that there is variety of providers of aeronautical applications (INDRA, THALES, COMSOFT, RADIOCOM, etc) should have information and make operational tests over a period of time sufficient to validate the information transport.	3.5
GUY		4
PAR		4
PER		4
URU	The administration of each country and their focal points, met all expectations administratively.	4
	The problems are technical in character and hopefully be solved by the supplier.	2
T&T		4
	PROMEDIO	**3.7**

7.- Other comments Please include other comments related to the compliance of project objectives.	
ARG	
BOL	
BRA	
CHI	
COL	
ECU	Have met the objectives of the Project. Greater knowledge of systems that interface to the REDDIG is required.
GUY	NIL
PAR	
PER	
URU	The objectives achieved within the project could not have been achieved without the professionalism, dedication and effort made by the coordination, management and administration of ICAO and persons involved in each State.
T&T	

8.- Risks What new events that could happen, would probably affect the achievement of project outputs? What do you recommend to respond to these events?	
ARG	They recommend that the company providing installation procedures provide for failover, contact details, scaling, to shorten fault resolution.
BOL	
BRA	
CHI	Regarding the REDDIG II, with respect to the terrestrial network, the possible involvement of different service providers final mile. Recommendation: Centralize management // Regarding the REDDIG II, coordination within the INEO / LEVEL3 consortium. Recommendation: Improve management // Regarding the REDDIG II, centralization of knowledge in one person by INEO. Recommendation: To request the INEO have a more balanced work group, at least in the initial stage.

COL	
ECU	Yes. Limited staff qualified to handle REDDIG Node 2, one of which is very old. It is recommended that new or young person in the CNS Network knowledgeable staff to engage, train and participate in the project.
GUY	NIL
PAR	
PER	
URU	The risk at this stage of the project can go through not achieve 100% compliance on the expected performance today and for the future to avoid degradation and mediocrity must be maintained through ongoing workshops and refresher courses communication.
T&T	A delay in resolving current problems of the states. More resources required on the equipment provider's part.

9.-Other information	
Please provide any other information that may support or clarify your assessment regarding compliance with the objectives of the project.	
ARG	
BOL	
BRA	
CHI	
COL	
ECU	
GUY	NIL
PAR	
PER	
URU	Our assessment of compliance with project builds on the excellent communication between all stakeholders and dedication of each.
T&T	

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS
III. EVALUATION OF PROJECT IMPLEMENTATION AND PROVISION OF SERVICES BY ICAO

1.-Decision making **Do you think that the decision-making process within the project is appropriate?**		**Evaluation**
ARG		4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. The decision-making process is appropriate.	4
GUY		4.5
PAR		4.5
PER		4.5
URU	We believe that decisions even in times of emergency, have been appropriate.	4
T&T	Yes, it is.	4
	AVERAGE	**4.3**

2.-Product quality **Do you think that the quality of products elaborated is appropriate?**		**Evaluation**
ARG		4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes.	3.5
GUY		4.5
PAR		4.5
PER		4.5
URU	Product quality has not been by chance, but the product of many hours of study and analysis.	5
T&T	Yes it is appropriate but will take time to gather expertise knowledge.	4
	AVERAGE	**4.3**

3.-Orientation **Do you think that there is compliance with guidance towards achieving the project outputs?**		**Evaluation**
ARG		4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. Are being met.	3.5
GUY		4.5
PAR		4.5
PER		4.5
URU	If we believe and excellent results oriented.	4
T&T		4
	AVERAGE	**4.2**

4.-Organization and prioritization Do you think the organization and prioritization within the project is appropriate?		Evaluation
ARG		4.5
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. It is appropriate.	4
GUY		4.5
PAR		
PER		4.5
URU	We believe that the agenda and prioritization is appropriate.	4
T&T		4.5
	AVERAGE	**4.4**

5.-Change management Do you think that the management of change and degree of flexibility in managing the project are appropriate?		Evaluation
ARG		4
BOL		
BRA		4
CHI		4.5
COL		
ECU	Yes. They are appropriate.	4
GUY		4.5
PAR		4
PER		4
URU	The management and flexibility against unforeseen and its solution has been adequate.	4.5
T&T		4.5
	AVERAGE	**4.2**

6.-Service to the State Do you think that the service provided to your State is appropriate?		Evaluation
ARG		4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. It is appropriate.	4
GUY		4.5
PAR		5
PER		5
URU	Yes. Thank you.	5
T&T	Excellent support was received.	4.5
	AVERAGE	**4.6**

7.-Communication Do you think that the level of communication within and outside the project is adequate?		Evaluación
ARG		4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. It is adequate.	4
GUY		4.5
PAR		4
PER		4.5
URU	Sustained communication is the basis of the expected final success.	4.5
T&T		4.5
	AVERAGE	**4.3**

8.-Conflicts Do you believe that conflict management is adequate?		Evaluation
ARG		4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. It is adequate.	4
GUY		4
PAR		5
PER		4.5
URU	The challenges are adequately addressed by their importance and priority.	4
T&T		4.5
	AVERAGE	**4.3**

9.-Use of resources Do you think that project resources are being used efficiently to produce the expected results?		Evaluation
ARG		4
BOL		
BRA		5
CHI		4.5
COL		
ECU	Yes. The resources are used efficiently.	3.5
GUY		4
PAR		4.5
PER		4.5
URU	Yes. The use of the resource are managed properly.	4
T&T		4.5
	AVERAGE	**4.3**

10.-Relevance of mechanisms Do you think that management mechanisms of the project are relevant?		Evaluation
ARG		4
BOL		
BRA		4.5
CHI		4.5
COL		
ECU	Yes. They are relevant.	4
GUY		4
PAR		4
PER		4.5
URU	Yes. They are relevant and adequate.	4
T&T		4
	AVERAGE	**4.2**

11.-Opportunity to work plans On the basis of its work plan, how would you rate the degree of opportunity of the project as regards the achievement of products, outputs and delivery of inputs?		Evaluation
ARG		4
BOL		
BRA		4.5
CHI		5
COL		
ECU	Yes. Very good.	4
GUY		4.5
PAR		4
PER		4.5
URU	The opportunity of the work plan has been adequate with good time management on the part of management and administration.	4
T&T		4
	AVERAGE	**4.3**

12.-Orientation Do you consider that the activities and products developed through the project are in line with ICAO directives, regional offices and air navigation plans?		Evaluation
ARG		4.5
BOL		
BRA		4.5
CHI		5
COL		
ECU	Yes. They are aligned.	4
GUY		4.5
PAR		4
PER		4
URU	Products and activities are aligned with the air navigation plans, ICAO and regional offices.	4
T&T		4.5
	AVERAGE	**4.3**

13.-Other information Please provide any other information that may support or clarify your assessment on products and services provided through the project.		
ARG		
BOL		
BRA		
CHI		
COL		
ECU		
GUY	Satisfactory.	
PAR		
PER		
URU	The handling of products and services have been appropriate.	
T&T		

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS
IV. LESSONS LEARNED

1.-Positive lessons learned from the project.	
Provide a brief description of the positive lessons learned from project implementation.	
ARG	The different stages designed for planning and implementation of the REDDIG II platform with interactive participation of states in a process of continuous consultation. The methodology used for monitoring including conducting daily teleconferences during the stage of implementation and migration of services contributed significantly to the coordination necessary to remedy the problems found.
BOL	
BRA	
CHI	Possibility of active participation of representatives of each of the States. Appropriate scheduling activities. Efficient way to work with regard to meetings and decision making. Work efficient and harmonious team.
COL	
ECU	The project has evidenced Regional level the following values: Professionalism, commitment, involvement, responsibility, teamwork, respect, camaraderie and quality.
GUY	Teleconference was excellent, assisted in solving problems.
PAR	Cooperation among States for the implementation and coordination for virtually immediate solution of technical problems. The use of the tool Teleconference was a success for the evolution of management and coordination situations.
PER	Appropriate use of teleconferencing enables coordination.
URU	Es bueno resaltar la buena comunicación obtenida a través de las reuniones, cursos, teleconferencias donde compartimos
T&T	Excelent teamwork.

2.-Opportunities for improvement.	
Provide a brief description of the improvement opportunities identified during project implementation.	
ARG	Improve coordination with the provider to help troubleshoot failures and technical problems. It is proposed to develop procedures with relevant contact details, scaling and records (ticketing systems).
BOL	
BRA	
CHI	Enhance teleconferencing tool to coordinate the affairs of the various services of the REDDIG.
COL	
ECU	More training is required in networks and interconnecting Aplicativos the REDDIG.
GUY	More training.
PAR	Ongoing training will be important for the future of the project.
PER	
URU	Simplemente, el proyecto de REDDIG I y todo lo aprendido, han servido de preparación y experiencia; por lo cual durante el
T&T	
3.- Strategy to implement the improvement opportunities identified.	
Provide a brief description of the strategy that you would propose to implement the improvement opportunities identified.	
ARG	It is proposed to continue the monitoring / tracking applications and services for the operation of the REDDIG II, in order to detect the use of resources and make the necessary provisions in cases of extensions.
BOL	
BRA	
CHI	Analysis of improvement opportunities, with the participation of all states, through teleconferences. Study the feasibility of executing them. Formation of working groups for implementation.
COL	
ECU	Interacción con los proveedores, cursos y prácticas, pruebas y ensayos.
GUY	NIL
PAR	It should keep the strategy followed since it was perfected with the experience gained during the project.
PER	
URU	Sin dudas, para poder mejorar debemos mantener e incremenatar y apoyar a la gestión y administración de REDDIG II.
T&T	

Agenda Item 7: **Other matters**

7.1 A State consulted the Meeting on the treatment that would be given to the equipment and spare parts of the **REDDIG I**; cause there would exist interest in acquiring them in view of its functionality.

7.2 After an exchange of ideas about the equipment treatment, it was determined that there should be explored other possibilities to dispose this equipment, both sale and other figures that might arise. In that sense, Secretariat was instructed to explore these possibilities and then report to the States to determine the actions to be performed. Is expected to have an initial response by the beginning of the second semester of the 2015. In this regard, the meeting formulated the following conclusion

Conclusion RCC / 18-5 Provision of equipment and spare parts of the REDDIG I

That the secretariat explores the possibility of having the equipment and spare parts of the REDDIG I, both for their sale and other figures that could manifest and report the results to all Member States of the Regional Project RLA/03/901 by the beginning of the second semester of the 2015.

7.3 It should be noted that States expressed the importance of implementing the recommendations on the maintenance of these equipment in order to keep them operative while the actions to be taken by the States are being defined.