INTERNATIONAL CIVIL AVIATION ORGANIZATION

RLA/03/901

NINETEENTH MEETING OF THE COORDINATION COMMITTEE (RCC/19)

FINAL REPORT

(Lima, Peru, 7 to 9 March 2016)

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HISTORY OF THE MEETING

ii-1. PLACE AND DURATION OF THE MEETING

The Nineteenth 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 7 to 9 March 2016.

ii-2. OPENING

Mr. Oscar Quesada, Deputy 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 10 member States (Argentina, Brazil, Chile, Colombia, French Guiana (France), Paraguay, Peru, Trinidad & Tobago, Uruguay and Venezuela), and one international organization (SITA), making a total of 27 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 Assistance 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 Eighteenth 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 2016
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 TO THE PROVISIONAL AGENDA

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 Nineteenth Meeting.

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

The Committee will review, for approval, the report of its Eighteenth Meeting (RCC/18) held in Lima from 2 to 4 March 2015. 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) Follow-up to REDDIG II performance;
b) Follow up to MEVAIII / REDDGI II interconnection;
c) REDDIG II training programme; and
d) New REDDIG II services and activities.

Agenda Item 4: **Work plan for 2016**

The Committee will analyze the work programme for 2016:

a) New REDDIG II activities and services (final acceptance tests of the satellite network (FNAT), installation of the REDDIG II Brasilia Node, transfer of the Bogota´s Node and implementation of new services);
b) New MEVAIII / REDDGI II activites and interconnection services; and,
c) Training programme for 2016

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 2015, as well as the project budget for 2016 for approval.

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 2015, 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 Eighteenth Coordination Committee Meeting of the REDDIG (RCC/18) that was held in Lima, Peru, from 2 to 4 March 2015 and was attended by participants from 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.

2.2 The RCC/18 Meeting reviewed the report of the Seventeenth Coordination Committee of the REDDIG (RCC/17), the presentation of the activities carried out from the RCC/17 to the RCC/18, the work plan for year 2015, the financial situation of the project and the approval of the budget for year 2015, the annual project evaluation from the RCC/17 to the RCC/18 and other matters.

2.3 During the RCC/18 the following conclusions were formulated:

RCC/18-1	*Registration process at the national entities that manage the spectrum, of the REDDIG II equipment and frequencies*
RCC/18-2	*Tests to access the SITA data link service through the REDDIG II by ANSP*
RCC/18-3	*Approval of the Project RLA/03/901 budget*
RCC/18-4	*Delay in the payment of cost sharing contributions to the Project RLA/03/901 - Suriname*
RCC/18-5	*Provision of equipment and spare parts of the REDDIG*

2.4 The Meeting examined the list of valid conclusions presented in WP/2 and in this respect considered that Conclusions 8/8, 15/1, 15/4, 16/3, 18/1, 18/4 and 18/5 were valid, and Conclusions 16/1, 16/2, 18/2 and 18/3 were completed. The **Appendix** to this Agenda Item presents the status of the conclusions as a result of the Meeting review.

2.5 To follow-up on Conclusions 15/4, 16/3 and 18/4 related with the delay in the payment of project RLA/03/901 cost-sharing contributions, the Meeting took note that the ICAO SAM Regional Office had sent letter SA5033 of 21 January 2016 to the Surinamese Ministry of Transport, Communications and Tourism, indicating that it owed the amount of USD 276,051 pertaining to cost-sharing contributions from 2012 to 2016, and informing that in the event that payment was not made, the REDDIG Administration would apply the procedure established through Conclusion RCC/8-11 - *Procedure in cases of payment delay*, as of 21 March 2016. This procedure was approved by all REDDIG member States.

2.6 In reply, Suriname sent a letter on 3 March 2016, indicating its awareness regarding its obligation of make payment of their contributions, that the delays in making them were due to various reasons, mainly of bureaucratic nature, that at this time it could not make full payment but that it would be effected in installments, and that the services not be cut off. In this regard, the SAM Regional Office sent letter SA5192 of 7 March 2016 in order that Suriname present a payment schedule.

2.7 In this sense, the Meeting considered that Suriname's contributions' delay were affecting all REDDIG member States as regards the activities related with the network operation and maintenance, and urged Suriname to present its payment schedule as soon as possible, with the aim of avoiding application of the payment delay procedure. In this respect, the Meeting formulated the following Conclusion:

Conclusion RCC/19-1 Suriname cost-sharing contributions payment schedule

That, Suriname with the aim of complying with full payment of its 2012 to 2016 cost-sharing contributions, present a payment schedule in this regard, in order to avoid the application of the payment delay procedure indicated by the ICAO SAM Regional Office through letters SA5033 and SA5192 of 21 January and 7 March 2016, respectively.

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.
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. In this regard, trials were conducted in December 2015 between the AFTN Test Switch in the Technical Centre at Atlantic City via Atlanta, Georgia, and from Atlanta to Manaus via the MEVA III / REDDIG II interconnection. Trials for the implementation of the Brasilia-Atlanta AFTN circuit would start on 11 March 2016 between Brazil and United States.

No.	Title	Content	Status	Remarks
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. The ICAO SAM Regional Office had sent letter SA5033 of 21 January 2016 to the Surinamese Ministry of Transport, Communications and Tourism, indicating that it owed the amount of USD 276,051 pertaining to cost-sharing contributions from 2012 to 2016, and that it make the corresponding payment by 15 March 2016. In the event that payment were not made, the REDDIG Administration would apply the procedure established through Conclusion RCC/8-11 - *Procedure in cases of payment delay*.
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.	Completed	REDDIG II implementation was successfully completed at the beginning of 2015, and the aeronautical authorities of the REDDIG II member States provided all necessary facilities in order that the REDDIG II focal points could carry out the activities required for the implementation and operation of 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.	Completed	The focal points actively participated in all functions required for the final implementation and operation of REDDIG II. Pending is the final acceptance of the satellite network, scheduled for the end of March 2016and in which the focal points are actively involved.

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. Refer to remarks under Conclusion 15/4.
18/1	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.	Valid	RCC/18 meeting informed that only Argentina, Chile and Guyana had registered the equipment and frequencies, and that Brazil, Ecuador, Peru, Trinidad & Tobago and Uruguay had only started the process. At RCC/19, Argentina presented REDDIG II the form containing CNS frequencies and equipment; Chile presented a letter where SUBTEL grants permission for the use of the frequency; and Venezuela informed it had registered the REDDIG II frequencies and equipment at CONATEL. REDDIG II member States, except Argentina and Chile, were urged to send to the ICAO SAM Regional Office the registry forms presented to the national entities managing the radio frequencies.

No.	Title	Content	Status	Remarks
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.	Completed	The whole process for the conduct of trials was successful. The data link information from the Chile Oceanic ACC is passing through REDDIG II up to the Recife REDDIG node and, thereafter, through the SITA network up to the Rio de Janeiro processing centre.
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.	Completed	The budget was approved by RCC/18.
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.	Valid	Suriname has still not cancelled its contributions since 2012 onwards. Refer to remarks under Conclusion 15/4.
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.	Valid	Replies were received from Bolivia, Brazil, Chile, Ecuador, Suriname, Trinidad & Tobago and Uruguay. It is expected that the remainder States inform at RCC/9 on their point of view, with the aim of counting with a common position in this regard.

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

3.1 The Meeting under this Agenda Item analysed the following working papers:

- WP/03 *Report of the activities carried out to date since the last meeting of the Coordination Committee* (presented by the Secretariat)
- WP/07 *CMR WRC-15 results and registration process of REDDIG II equipment and frequencies at national organisms that manage the frequency spectrum* (presented by the Secretariat)
- WP/08 *Follow-up to actions for the treatment of REDDIG I equipment and spare parts* (presented by the Secretariat)
- WP/09 *Follow-up to Chile ANSP test implementation to access the SITA ACAES service through the REDDIG II network* (presented by SITA)

Report of the activities carried out to date since the last meeting of the Coordination Committee

3.2 The Meeting analysed the following activities agreed upon at the last meeting of the Coordination Committee (RCC/18):

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

REDDIG II training programme

REDDIG II TRAINING PROGRAMME

3.3 With regard to training activities, the Meeting took note on the following courses carried out:

a) Specialized course on the management software “WhatsUp Gold”; and
b) Basic course on CISCO routers and IP switch.

3.4 The specialized course on the WhatsUp Gold management software took place in Manaus, Brazil, from 21 to 24 April 2015, at the facilities of the Cuarto Centro Integrado de Defensa Aérea y Control del Tránsito Aéreo – CINDACTA IV.

3.5 The course was delivered by Mentat Soluções Ltda., SP, Brazil, representative of WhatsUp in Brazil. Eight member States assisted (Argentina, Brazil, Chile, Ecuador, Paraguay, Peru, Trinidad & Tobago and Uruguay) with a total of 21 participants.

3.6 The course’s programme is shown in **Appendix A** to this Agenda Item. The course material has been uploaded at the REDDIG II website, www.lima1.icao.int/reddig. The cost of the course was of USD 4,767.00, without including neither simultaneous interpretation services nor the fellowships granted to the participants.

3.7 The basic course on CISCO IP routers and switches, the ICDN1 (*Interconnecting Cisco Network Devices Part 1)* was carried out in Lima Peru from 9 to 13 November 2015. The course was delivered by the Training Institute NEW HORIZON, entitled to dictate CISCO courses.

3.8 The content of the course is presented in **Appendix B** to this Agenda Item and its objective was to provide the skills and knowledge required for installing, operating and resolving connectivity issues of REDDIG II, including the configuration of switches, routers, and the respective safety implementation.

3.9 The cost of the course ICDN1 was of USD 8,000.00 (eight thousand US dollars). This amount did not include simultaneous interpretation services, nor participants' fellowships.

3.10 Ten REDDIG II member States (Argentina, Brazil, Chile, Ecuador, Colombia, Paraguay, Peru, Suriname, Trinidad & Tobago and Uruguay) attended the course ICDN1, totalling 16 participants. The content of this course is available in the REDDIG website www.lima1.icao.int/reddig.

REDDIG II operation and analysis to the implementation of new services

3.11 The Meeting took note that the REDDIG II presented initial operational problems at some of its services, such as the AFTN, AMHS, some ATS speech and administrative circuits, the IP telephone network for the ATFM service, the node management service (NMS), and the freezing of some satellite modems that with time, most of the failures were solved, achieving to date a stable performance, with high availability. The network still presents some problems, such as random freezing at some of the satellite modems (Skywan).

3.12 The Meeting was informed that there is 90% of probability that the freezing problem of satellite MODEM is due to a synchronization problem between the RX RF part and the Skywan modems, according with the investigation carried out by NDSatCom, MODEM satellite manufacturer.

3.13 To fix the problem, NDSatCom informed INEO who informed the manager of the REDDIG II project, that it is necessary to replace all existing LBNs (which presently generate internally their own 10MHz intermediate frequency) by new LNBs (receiving an external 10MHz intermediate frequency coming from the Skywan).

3.14 In this sense, the Meeting was informed that INEO will take the following actions without any cost to REDDIG II member States, to be executed in two phases:

Phase 1

a) The replacement of the two LNBs and the adding of the RF filter on four sites (Manaus, Recife, Ezeiza, Lima).
b) The replacement of the items will be done firstly at Manaus to make sure that the modifications will not generate any other hardware problem. The installation in Manaus of the LNB was made on 11 January 2016.
c) Then, the replacement of the items will be done on the three other sites.
d) Once the four sites are modified, a new analysis of the system will be done by NDSatCom to see if a significant reduction of the TDMA CRC errors can be noticed. (*)

** The modifications to be done on the four sites are only the first step observation. The complete reduction in the TDMA CRC errors can only be observed once all sites are modified.*

Phase 2

a) If there is a significant reduction of the TDMA CRC errors, the same hardware modifications will be deployed on all the sites.
b) Then, the whole network will be under observation during some weeks, to see if the problem is solved definitely.
c) If not, NDSatcom will have to investigate more deeply, by going on some important sites (e.g. Manaus and/or others sites to be defined).

3.15 The Meeting was informed that the replacement of LNBs in all nodes could be delay by mid-2016 in view that in some States their customs process to release equipment are being delayed. As **Appendix C** to this Agenda Item includes the LNB replacement procedure and RF filter installation, as well as both their technical characteristics.

3.16 The Meeting also took note that additionally to the replacement of LNBs; INEO had informed that would install RF filters in each REDDIG II node to avoid interference, especially with WIMAX service. Nevertheless, INEO decided not to install the RF filters since this would not solve the freezing problem in the satellite modems.

3.17 The Meeting considered that the final acceptance of the REDDIG II will arise once the solution is implemented and in the event no more freezing present themselves at the satellite modems for a continuous one-month period and the TDMA CRC errors significantly reduce, will the final satellite network acceptance take place.

3.18 The Meeting analysed an Excel table with the status of all REDDIG II pending aspects since the REDDIG II Provisional Acceptance Test (January 2015), plus other failures occurred after the PSAT. The Excel table is presented as **Appendix D.** From the analysis of the table can be determined that almost all pending aspects of the REDDIG II have already been resolved except two problems in Uruguay. The first regarding the software version delivered for the remote VPN is not consistent with the manual send for the installation, being impossible to proceed to the installation according to INEO suggestion. The second concerning the MODEM satellite 1070 of B-chain, which power status indicator does not light green even though is operating properly; and a problem in Paraguay related with the IP administrative lines setup.

3.19 Additionally, the Meeting took note of the latest events occurred in REDDIG II that are pending solution, as the change in the synchronization reference from the Manaus NCC to the Ezeiza NCC without the intervention of the REDDIG II Administrator, and the low RF reception levels at Ezeiza, Montevideo and Guayaquil.

3.20 In this sense, the Meeting considered that the final acceptance test of the REDDIG II satellite part will be made when INEO completes the above-mentioned pending aspects.

Activities pertaining to the implementation of the new Brasilia node

3.21 The Meeting took note that for the implementation of the Brasilia node, REDDIG II Contract 22501200 had an addition, Amendment III. This amendment was signed on 3 August 2015 among INEO, LEVEL 3 and the ICAO in Montreal Technical Cooperation Bureau representatives. Copy of Amendment III to the Contract is shown in **Appendix E** to this Agenda Item.

3.22 The Meeting was informed that the services at the Brasilia node are an AFTN circuit with French Guiana, 11 AMHS circuits (all States adjacent to Brazil and the circuit with Atlanta through the

MEVA III REDDIG II interconnection). Regarding speech circuits, there are three administrative switched circuits and four ATS switched speech circuits. **Appendix F** to this working paper shows the detailed setup of services at the Brasilia node. The delegate from French Guiana informed that by the end of 2016 and AMHS system will be installed in French Guiana, then a new AMHS service should be considered in Brasilia node for that date.

3.23 The Meeting noted that the installation process of the new Brasilia REDDIG II node began in January 2016 and the installation and operations were completed on 3 February 2016 with the corresponding provisional acceptance test with satisfactory results and some observations.

3.24 Previously to this activity, the Meeting took note that during the week of 16 November 2015 the factory tests were conducted satisfactorily proceeding with its acceptance and signature. The trials were carried out by a representative from Brazil and the REDDIG II project technical manager. The documents pertaining to the Brasilia node PSAT are found in the REDDIG II website, www.lima1.icao.int/reddig.

3.25 The Meeting was informed that remains the last-mile connection between the REDDIG II node of Brasilia with the access point to the terrestrial network LEVEL 3 fiber-optic. On this respect LEVEL 3 has already begun coordination with the focal point of the REDDIG in Brasilia to start the implementation, in this regard by late March 2016 the operating of a new access in the terrestrial network is expected.

Final acceptance test of the REDDIG II terrestrial network

3.26 The Meeting took note that the ground network services with the service provider LEVEL 3 were tested and accepted at the beginning of July 2015 by all REDDIG II focal points. In this sense all REDDIG members decided to conduct two final acceptance tests, one with LEVEL 3 and the other, with INEO.

3.27 In order to perform the final acceptance test to the terrestrial network, the ICAO Technical Cooperation Bureau in Montreal made the Amendment IV to the REDDIG II contract so the two final acceptance tests recorded one for the terrestrial network and one for the satellite part. Copy of the IV amendment and the certificate of final acceptance of the terrestrial network are presented as **Appendix G** of this Agenda Item.

Installation and operation of the MEVA III / REDDIG II interconnection

3.28 The Meeting noted that with the aim at coordinating final activities required for the implementation of pending aspects of the MEVA III and REDDIG II networks interconnection, the implementation of new services in the interconnection, and the review of the Memorandum of Understanding (MoU) that provides for technical, operational, and administrative coordination between the MEVA III and REDDIG II networks, the First MEVA III / REDDIG II Coordination meeting was held in Oranjestad, Aruba, 25 to 26 may 2015.

3.29 The coordination meeting was attended by 29 delegates of 9 CAR and SAM States/Territories, one international organisation (COCESNA), the MEVA III service provider, and the REDDIG II Administrator.

3.30 The Meeting took note of the main results of the meeting:

a) Establishment of the steps to be taken to complete the implementation of the data (AFTN) and switched speech circuits foreseen for the MEVA III – REDDIG II interconnection.
b) Establishment of the action to be taken to complete the implementation of hot lines in Bogota and Caracas, and AFTN circuits with Atlanta from Bogota and Caracas.
c) An analysis of the implementation of new circuits in the MEVA III – REDDIG II interconnection during the 2015-2017 period. The circuits considered were the following:

No.	Circuits required	Estimated implementation date
1	Radar data exchange between Curacao and Venezuela	Before 2017
2	Radar data exchange between Colombia and Panama	Mid-2016
3	Implementation of SAM AMHS circuits with Atlanta • Caracas - Atlanta • Brasilia - Atlanta • Lima - Atlanta	2016-2017
4	Bogota – Panama AMHS circuit	2016
5	Implementation of Atlanta- PIARCO AMHS circuit through the REDDIG II COCESNA node	2016
6	PIARCO- Curacao AFTN circuit	After 15 June 2015

3.31 In this regard, the MEVA III/REDDIG II Coordination meeting formulated Conclusion MIII/RII 1/2 - *Confirmation of new interconnection circuit requirements*, requesting the States concerned to confirm the implementation of the circuits listed in the table under paragraph 3.30, so as to coordinate as needed for their implementation.

3.32 In this sense, in view that Brazil, Colombia, Peru, Trinidad & Tobago and Venezuela have not confirmed yet the implementation of the circuits indicated in paragraph 3.30, the Meeting considered the need that those States corroborate the feasibility of implementing the new circuits and the estimated implementation date, formulating the following conclusion:

Conclusion RCC/19-2 - Confirmation of implementation of new circuits in the MEVA III / REDDIG II interconnection by involved REDDIGII member States

That Brazil, Colombia, Peru, Trinidad & Tobago and Venezuela confirm feasibility of implementing the new circuits indicated in paragraph 3.30 of this Agenda Item, in the MEVA III/ REDDIG II interconnection as well as the estimated date of implementation not later than 29 April 2016.

3.33 The Meeting was informed that the MEVA III / REDDIG II Coordination Meeting reviewed and approved the MoU between MEVAIII and REDDIGII member States/Territories/International Organisations concerning coordination and cooperation for the MEVA III – REDDIG II interconnection **Appendix H** to this Agenda Item presents the amended MoU.

REDDIG logistics aspects

3.34 The Meeting took note that from RCC/18 to date, five (5) logistical operations were carried out by the REDDIG II. The summary of equipment failures and spare parts is shown in **Appendix I** to this Agenda Item. Similarly the Meeting was informed that regarding the statistics pertaining to the amount of attentions provided to the network node, as well as their distribution as regards the type of equipment originating the attention are presented as **Appendix J** to this Agenda and in the network availability chart from 2004 to the end of 2015 presented as **Appendix K,** can be observed a decrease in availability of REDDIG II operations due to the start-up of the REDDIG II network, and its initial problems.

Results of the Radio Navigation Conference (CMR) 2015 of the International Communications Union (UIT) and registration process of equipment and frequencies of REDDIG II at national organism that manage the frequency spectrum

3.35 The Meeting took note on the results on agenda item 1.1 of the UIT CMR 2015, specifically related to the examination of the spectrum additional attributions for International Mobile Telecommunications (IMT) in the frequency band corresponding to the Fixed Satellite Service (FSS C band) for aeronautical use.

3.36 The Meeting was informed that CMR agenda item 1.1 mentioned that several ranges of frequencies were adequate for a possible future introduction of bandwidth for the international mobile service telecommunications IMT. Among the possible allocation of frequency bands, there are the frequency band used for fixed-satellite service with aeronautical purposes (3 400-4 200 MHz and 4 500-4 800 MHz). ICAO's position on this respect (see State Letter by the Secretary General E 3/5.15-15/52 dated 15 July 2015) was the opposition to any new attribution to the mobile service for IMT or adjacent unless has been shown through studies agreed that he will become void in the aeronautical services.

3.37 The Meeting took note that the results of the CMR 2015 results regarding the allocation of additional bandwidth to the IMT in the band of fixed satellite service (FSS) for aeronautical use, was favorable with ICAO position, ensuring no allocation to the IMT from 3.7 Ghz to 4.2 Ghz especially in Africa, South and Central America. In the remaining bandwidth that is less critical for VSAT of aeronautical use (3.4 Ghz a 3.7 Ghz) the Conference specified its use for the IMT only if the necessary protection is ensured.

3.38 In this regard the Meeting took note that the REDDIG II operation frequencies were within the frequency band of the FSS in which the introduction of the IMT were not allowed. The frequency of reception of REDDIG II range from 3788.621 frequency to the frequency 3.792.9995 Mhz.

3.39 Likewise, the Meeting was informed of the frequencies of operation other VSAT networks for aeronautical use which are operating in the Region specifically in Argentina, Brazil, Colombia, Ecuador, Paraguay, Peru and Venezuela. From the other States that reported the operating frequency, Paraguay and Peru are within the protected band while Venezuela the operating frequency is in the section of the (3.4-3.7 Ghz) band which allowed bandwidth allocation to the IMT provided this service does not interfere with the service of the FSS. So there is such protection it is important that you have registered in the national entity that manages the spectrum, frequencies and equipment of the FSS for aeronautical applications. Venezuela reported the registration of frequency and equipment at its national entity called CONATEL.

3.40 The Meeting proceeded to follow-up the implementation of Conclusion RCC18/1 - *Registration process at the national entities that manage the spectrum, of the REDDIG II equipment and*

frequencies requesting States that still have not complete the process of registration of 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 Office by 12 June 2015, and those States that have already 2015 registered REDDIG II frequencies and equipment send a copy of the equipment send a copy of the forms by 31 March 2015.

3.41 From the analysis of the conclusion, only Argentina and Chile presented their registration forms and in the case of Chile, the approval reply by the entity that manages the spectrum. Copy of the registrations forms are presented as **Appendix L**.

3.42 The other States attending the Meeting informed what follows: Brazil reported that the process for registration of frequencies of REDDIG II is being made in conjunction with the registration process at all frequencies of aeronautical equipment installed in the country. Colombia reported that no their registration process has begun yet and would proceed once the relocation of Bogotá node REDDIG II is completed as well as the installation of its new national VSAT network which is in phase of implementation. France shall inform promptly to ICAO SAM Office if the registration process has been carried out. Paraguay reported that had proceeded to the registration of frequencies and equipment in same way as Peru, Trinidad & Tobago, Uruguay and Venezuela. In this regard the Secretariat requested these States to send as soon as possible to the ICAO SAM Office copy of the registration form in respect to the frequencies.

3.43 Finally, the Meeting took note that to ensure the protection of frequencies of REDDIG II and national satellite networks used for aeronautical applications, it is essential that States through their respective national entities that manage the frequency spectrum, register their VSAT stations to the MIFR (Master International Frequency Register). In this sense, REDDIG II focal points should ensure that the international registration process is made. In this respect, the Meeting formulated the following conclusion:

Conclusion RCC/19-3 – Registration of VSAT stations for fixed-satellite service (FSS) for aeronautical use at MIFR (Master International Frequency Register)

In order to ensure adequate protection to the operating frequencies of REDDIG II as well as the frequencies of VSAT stations for aeronautical use at the national level, REDDIG member States:

a) That still have not proceeded to registration of frequencies and REDDIG equipment as well as the frequencies of its VSAT stations for aeronautical use, in case that exists the respective national entities that manage the spectrum of radio frequency, do so as soon as possible and send the registration forms to the ICAO SAM Office.

b) Ensure that national entities that manage the radio frequency spectrum recorded operating frequencies of each REDDIG II station as well as frequencies of VSAT networks for local aeronautical use, in case they had it, to the UIT Master International Frequency Register (MIFR) and report the process to SAM Office.

Follow-up to actions for the treatment of REDDIG I equipment and spare parts

3.44 The Meeting took note that with the commissioning of the REDDIG II at the end of January 2015, all equipment of REDDIG I stop working and that REDDIG II being a fully Protocol IP-based network is not compatible with the equipment of REDDIG I whose technology is based on the Frame Relay Protocol, therefore most of equipment that make up the REDDIG I cannot be used in REDDIG II. The list or spare parts of REDDIG I is presented as **Appendix M** to this Agenda Item.

3.45 During RCC/18 the Meeting began the evaluation of the treatment that could be given to the equipment and spare parts of the REDDIG I.

3.46 As follow-up to Conclusion RCC/18-5 the Meeting was informed that the Secretariat sent on 25 March 2015 letter LT 12/4 - LN 3/20.3 - SA5212. In this letter REDDIG member States were requested to express their intentions regarding REDDIG I equipment and spare parts by sending a reply not later than 15 May 2015.

3.47 The Meeting noted that replies were received from Argentina, Bolivia, Brazil, Chile, Ecuador, Paraguay, Peru Suriname, Trinidad & Tobago and Uruguay. A summary of replies are shown as **Appendix N** to this Agenda Item.

3.48 From the answers, the Meeting observed the different proposals such as reusing the equipment and spare parts, selling, exchanging by REDDIG II equipment and cards, dismissing, using in trials or requesting cards used by same equipment of national networks.

3.49 The Meeting analysed the replies and considered that with respect to the selling option, some States informed their difficulties regarding the sale of State's goods and this should apply for most REDDIG member States. One State mentioned that the sale would be possible only through ICAO. Taking into consideration that ICAO selling process is very complicated, the selling option could be dismissed.

3.50 Regarding the replies of some States suggesting the consideration of which REDDIG I equipment and spare part can be reused in REDDIG II, the Meeting concluded that equipment that can initially be reused are: RF chain equipment, amplifiers (IBUC), receivers (LNB) and waveguide switches. FRAD and MODEM equipment cannot be used in REDDIG II as they are based on other technology, therefore are not compatible.

3.51 The Meeting considered this solution is highly recommended, thus States should store this equipment properly. From this equipment only the LNB can be directly changed, due to the modification that INEO is making in all LNB to fix the freezing problem. For the IBUC and waveguide switches some settings and adjustments are necessary for REDDIG II, therefore it's used can be reserved to real emergencies.

3.52 Regarding the option of changing equipment (FRAD and MODEM) by REDDIG II equipment or cards as proposed by some States, the Meeting concluded that it was a difficult option to implement and was disregarded.

3.53 Finally the option of donating this equipment and cards to the States of the Region that use the same equipment as REDDIG I in their local networks as is the case of Peru that needs card of FRAD equipment. On this respect Brazil, Colombia and Paraguay offered their equipment and cards in donation.

3.54 Additionally the Meeting took into consideration that if the donation to Peru is made from spare parts of REDDIG I equipment, the Secretariat would proceed to send a letter to all Member States requesting their approval, and if it is the case the donation will take place.

3.55 In this regard the meeting requested Peru to submit a formal letter to the ICAO SAM Office specifying the cards and equipment required so that the administration of the REDDIG can start the donation process.

3.56 In respect to this topic, Venezuela informed that all REDDIG I equipment will be donated to the Instituto Universitario de Aviacion Civil.

Follow-up to Chile ANSP test implementation to access the SITA ACARS service through the REDDIG II network

3.57 As a follow-up to the Conclusion RCC/18-2 *Tests to access the SITA data link service through the REDDIG II by ANSP*, the Meeting considered that the process for the performance of test to access the data link information from the ACC oceanic Chile through REDDIG II to Recife REDDIG II node and then through the SITA network to the new processing center of Rio had been performed successfully.

3.58 The Meeting considered that even positive results had been obtained from tests; same should remain until the first week of May 2016. for further investigation of the performance of the data link service in the REDDIG. Final results of these tests would be presented initially in a teleconference to be held the first week of May 2016 with the participation of all States members of the REDDIG II and SITA.

3.59 The Meeting took note of a network configuration design developed by SITA for the operational use by any ANSP willing to connect to SITA using REDDIG II as access point, and therefore ensure that the use of a dedicated network ATC under a profitably means. The diagram is presented as **Appendix Q.**

3.60 In this regard the Meeting considered that in order to be able to review in detail the network configuration of the appendix O, members of the REDDIG II required to know the final results of the tests in Chile as well as the study of cost benefit made by Chile and SITA using REDDIG II to transport data link service.

3.61 The representative of SITA informed that results will be presented in the SAM/IG/17 Meeting to be held in Lima, Peru, from 9 to 13 May 2016. In view that the SAM/IG Meeting is only for SAM States, it was agreed to carry out a teleconference once week prior to SAM/IG in order Trinidad & Tobago can take note on the results and set possible recommendations on this respect.

APPENDIX A

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

APÉNDICE B / APPENDIX B

Interconnecting Cisco Network Devices Part 1 (ICND1)

Quién debería asistir

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

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

Prerrequisitos

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

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

Objetivos del curso

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

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

Contenido del curso

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

Esquema Detallado del Curso

Day 1: Course Introduction, Building a Simple Network

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

Day 2: Establishing Internet Connectivity

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

Interconnecting Cisco Network Devices Part 1 (ICND1

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

Day 3: Managing Network Device Security

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

Day 4: Building a Medium-Sized Network

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

Day 5: Introducing IPv6

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

COFELY INEO
GDF SUEZ

PROCEDURE

Confidential ☐ ☒ **Restricted**

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

LNB/Filter Changeover Procedure

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

PURPOSE

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

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

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

SCOPE OF WORK

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

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www.cofelyineo-gdfsuez.com

Then, in a second step, the solution will be deployed in 3 other sites, in order to see if the changeover is improving the TDMA situation (see below). These sites have been chosen by NDSatcom, because they are relevant to observe the improvement for the following reasons:

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

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

Figure 1 - Second step of changeover

HARDWARE MODIFICATION

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

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

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

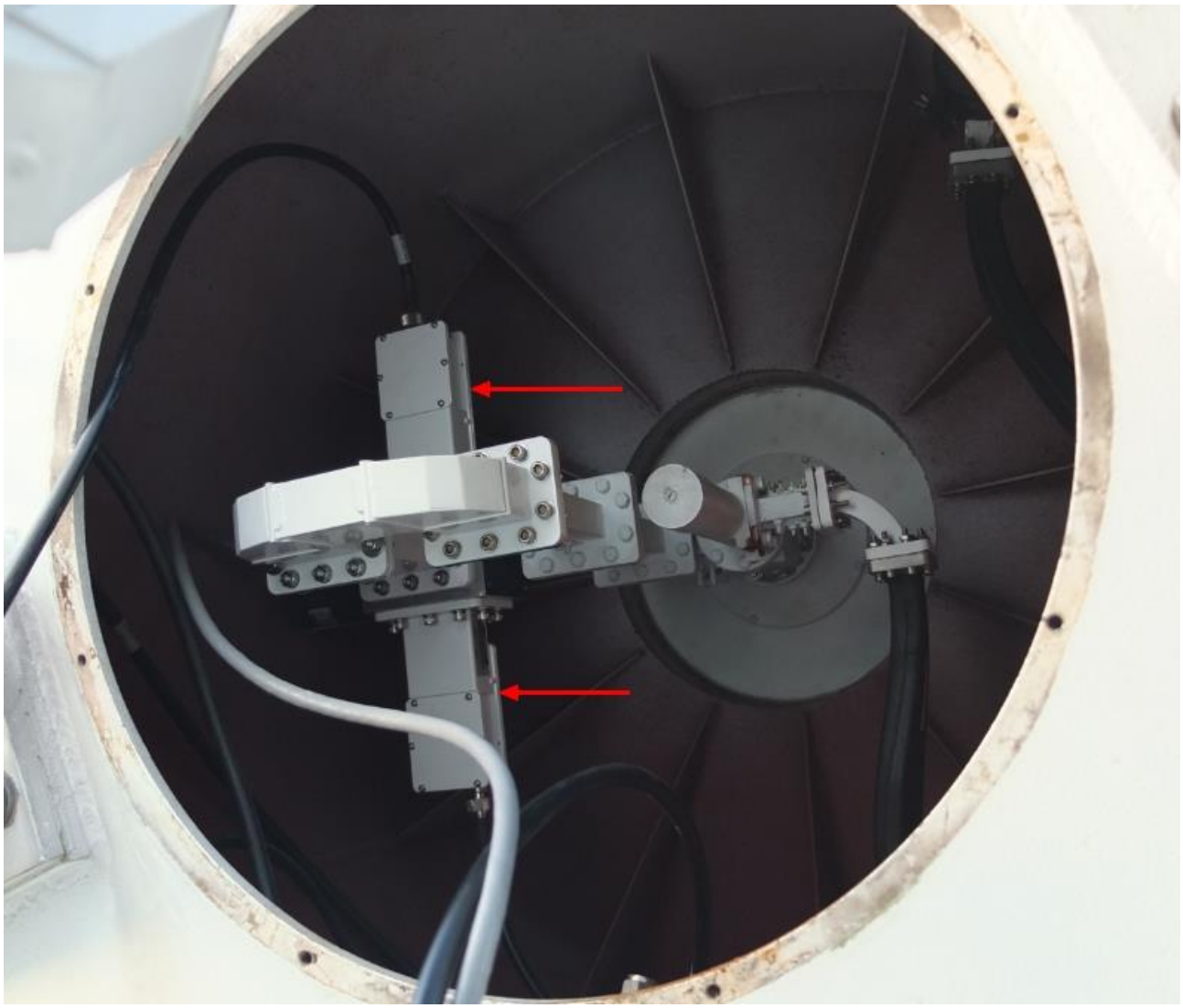


Figure 2 - LNB to be changed

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

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

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

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

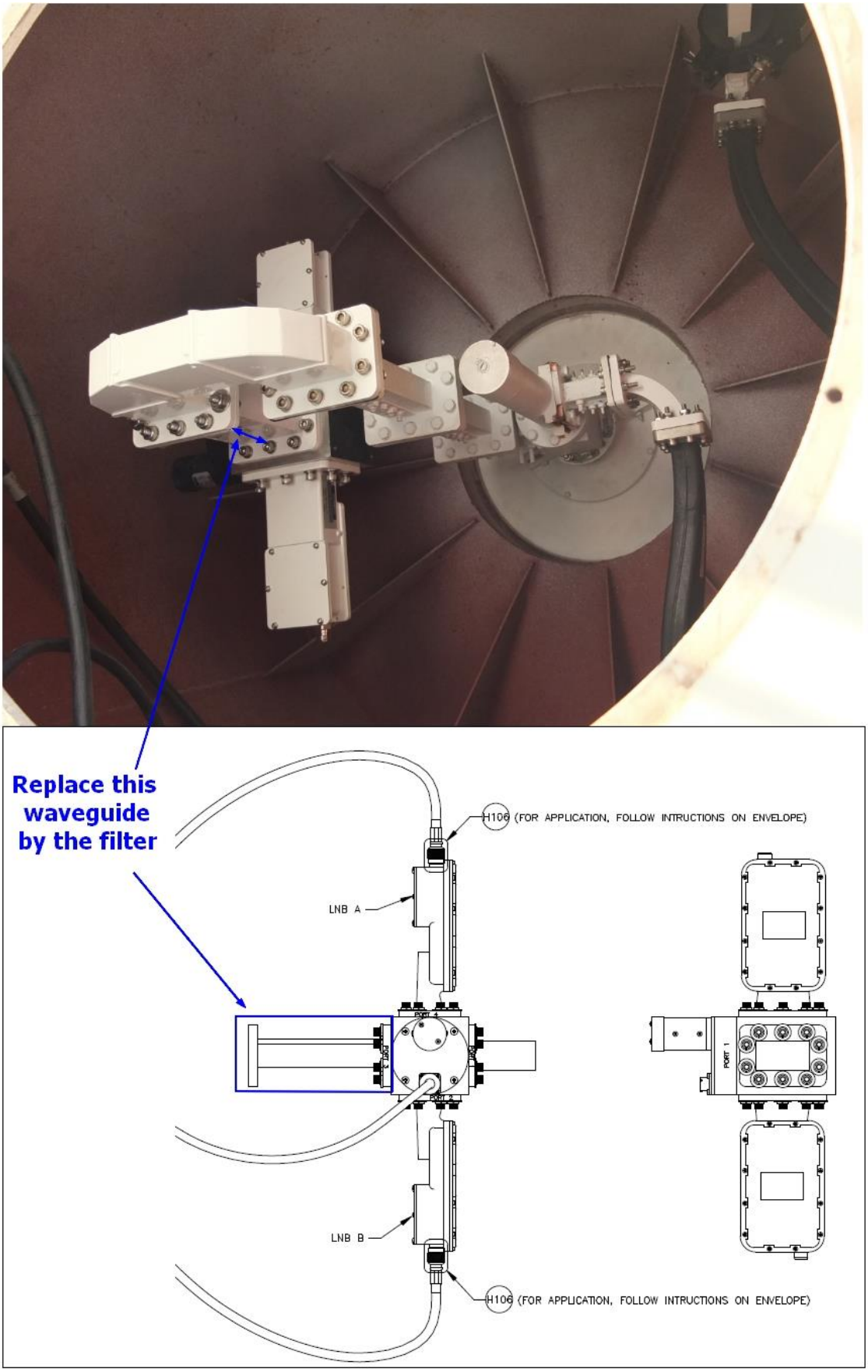


Figure 3 - Waveguide to be replaced by a filter

SOFTWARE MODIFICATION

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

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

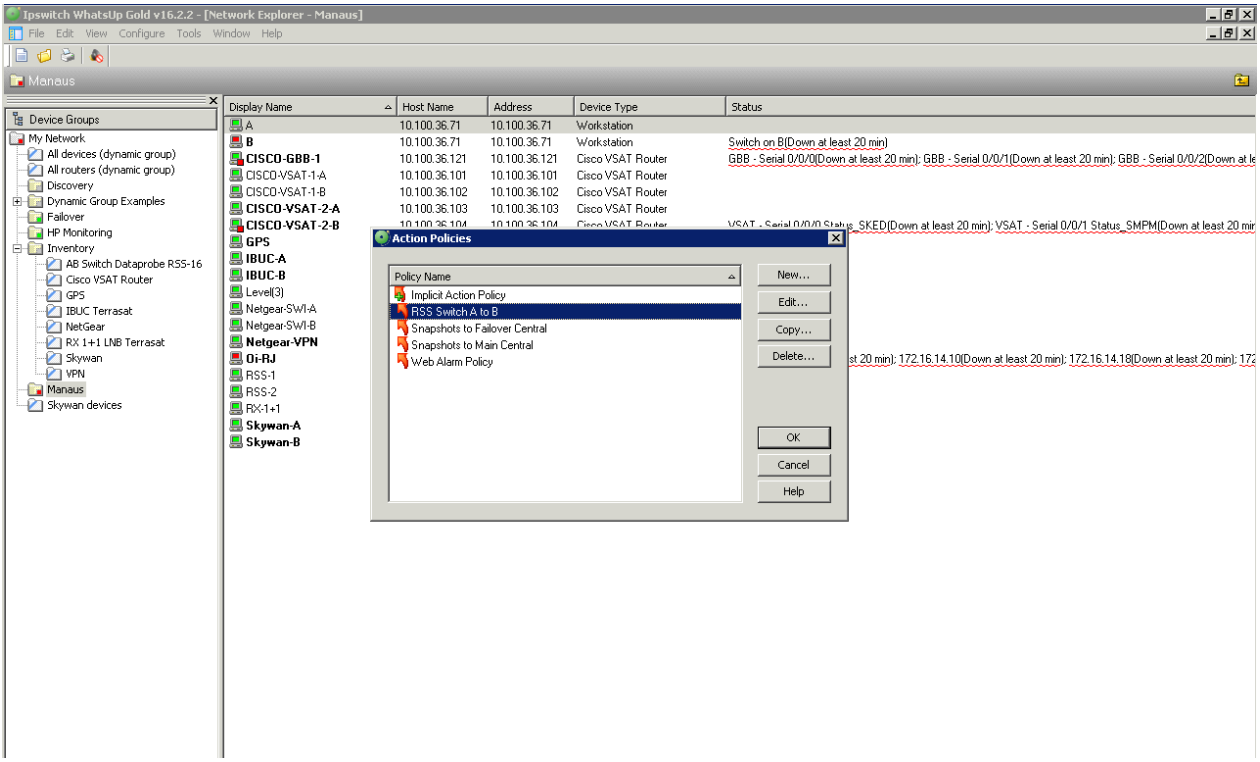


Figure 4 - WhatsUp Gold Action policies

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

VERIFICATION OF OPERATIONAL STATIONS

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

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

Norsat International Inc.

Innovative Communication Solutions

35 YEARS OF EXCELLENCE

LNB
C-BAND EXT. REF.
3000X

TYPICAL SPECIFICATIONS

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

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

FREQUENCY BANDS AVAILABLE

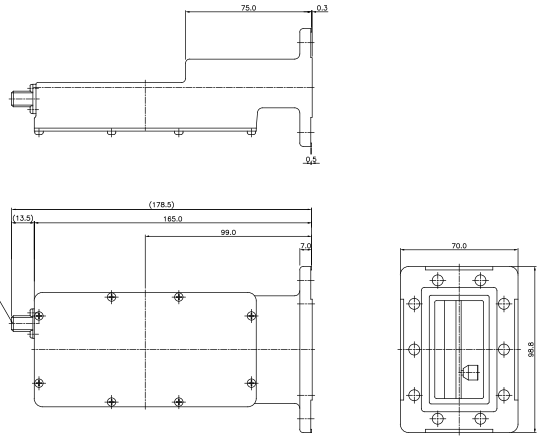
Input frequency (GHz)	3.40 to 4.20
L.O. frequency (GHz)	5.15
Output frequency (MHz)	950 to 1750

HOW TO ORDER

3020XN

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

MECHANICAL DIAGRAM



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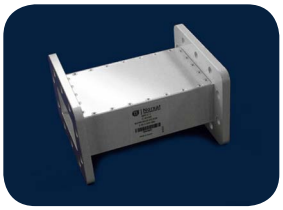
Norsat International Inc.

Pioneering the **Broadband Frontier**

30 Years of Excellence SINCE 1977

MICROWAVE COMPONENT

C-BAND BAND PASS FILTER



APPLICATIONS

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

TYPICAL SPECIFICATIONS (BPF-C-1)

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

TYPICAL SPECIFICATIONS (BPF-C-2)

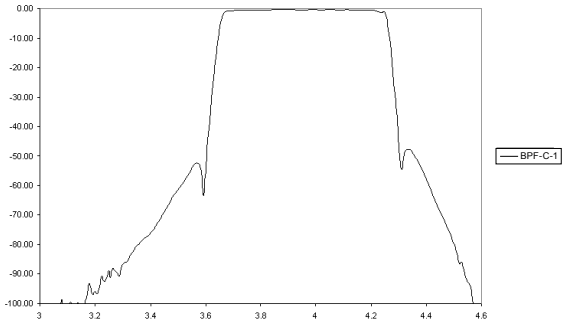
Frequency range	3.625 to 4.20 GHz
VSWR	1.4 : 1
Insertion loss in band	0.5 dB
Waveguide flange	CPR-229G (input), CPR-229F (output)
Dimensions	120 (L) x 100 (W) x 70 mm
Weight	650 g

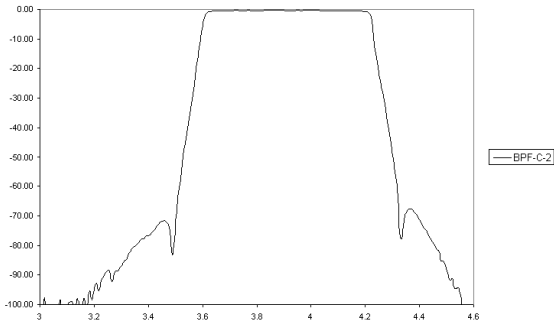
TYPICAL SPECIFICATIONS (BPF-C-BW36-CF)

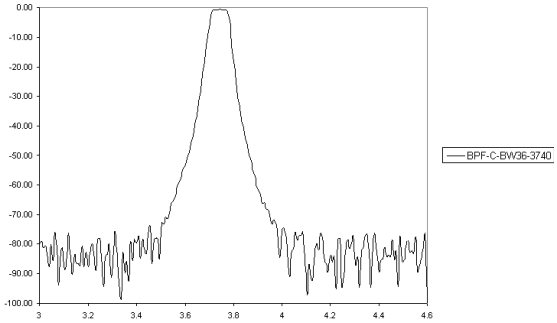
- BPF-C-BW36-CF is used for interference inside the standard receiver bands.
- The filter is a single transponder bandpass filter. The Center Frequency (CF) is
- determined by the individual customer's requirements.

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

FREQUENCY PLOTS







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File update: 3/22/2016 11:04

REDDIG-II - Pending issues

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

File update: 3/22/2016 11:04								**REDDIG-II - Pending issues**									
Item	**STATUS (as per INEO)**	**TYPE O/M**	**CRITICITY**	**Country**	**Node**	**City**	**Item #**	**Outstanding issues**	**Opening date**	**Action(s) to be performed**	**COMMENTS**	**Current update**	**Expecting closing date**	**Real closing date**	**STATUS (as per ICAO)**	***ICAO STATES Commentaries***	INEO / ICAO Responsible to solve the pending isssue
P3SAEZ02056	closed	P	3	**Argentina**	**SAEZ**	**Ezeiza**	**6**	Numero de emergencia dedicado GBB router (Fig 46. se comunica con Manaos con el numero 73601 y no con el numero indicado en la tabla de la figura 46	5 February 2015	To be corrected		27/03/2015 => targetted 04/03/2015 06/03/2015 => email send to clarify 30/04: test asked on 30/04 22/05/2015: pending test. 21/09: new Cisco configurations are to be sent before end of september	~~10h March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ ~~24th April 2015~~ end of september		Soved and closed	*Closed* *Solved*	INEO
P2SAEZ02057	closed	P	2	**Argentina**	**SAEZ**	**Ezeiza**	**7**	Perdida de paquetes en la red terrestre Manaos, Recife, Guyana, Paraguay y Surinam. Issue with the AMHS between SAEZ and SGAS when using the terrestrial link	5 February 2015	Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: General state is ok, pending one issue with AMHS with Paraguay. 21/09/15: new test is to be done before end of september to determine where is localisated the problem (AMHS works without problem on the VSAT link)	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015 end of september 2015		closed	*OK Operational December 2015*	OK
P3SAEZ02058	CLOSED	P	3	**Argentina**	**SAEZ**	**Ezeiza**	**8**	No se suministra el acceso a la página WEB de LEVEL 3 para la gestión de servicio	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**				LEVEL 3	closed	*OK The user name and password to acces LEVEL was sent March 27th*	ok
P4SAEZ02059	CLOSED	P	4	**Argentina**	**SAEZ**	**Ezeiza**	**9**	Dos conectores RJ45 del Patch Panel dañados	5 February 2015	To be corrected - New connectors will be sent to FP		~~05/03/2015~~ ~~=> Connector sent to FP on 27/02~~ ~~=> Waiting for confirmation of receipt~~ 08/04/2015 => Delivery cancelled due to AFIP restrictions (cf. mail Javier Vittor 08/04/2015)		4/8/2015	closed	*OK*	ok
P2SAEZ022410	closed	P	2	**Argentina**	**SAEZ**	**Ezeiza**	**10**	Continue intermittent problem in the AFTN circuit between Argentina and Brazil, Uruguay and Paraguay. Controllers report lost of flight plan	25 February 2015	Under analysis		27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week 15/07: as per precedent emails, retransmissions are not caused by REDDIG network.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Solved and Closed	*Solved and Closed*	INEO Solved and cclosed
P1SAEZ020511	closed	P	1	**Argentina**	**SAEZ**	**Ezeiza**	**11**	AMHS circuit between Ezeiza and Asunción	5 February 2015			30/04: solved and closed as per email 30/04 (clement chevallier), email from J. Vittor on 27/04			closed	*OK*	ICAO OK Solved in the REDDIG II satellite network additional test is required for the REDDIG II ground network

File update: 3/22/2016 11:04							REDDIG-II - Pending issues									
Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
O1SLLP17021	CLOSED	O	1	**Bolivia**	**SLLP**	**La Paz**	**1**	Communication problem with Manaus according to the email from ICAO (17th Feb.)	17 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	diagnostic on course after identification of the problem on the routing table with Level 3 expected resolution for 25/02	~~25/02/2015 => New configuration will be tested by Level3 as at today, on all nodes under recommendation made by our Cisco expert (CCIE certified)~~ ~~27/02/2015 => New configuration implemented, solution monitoring under validation~~ ~~28/02/2015 => Improvement of the routing discovery, but still to be confirmed~~ 12/03/2015: communciation test achieved with SOCA, pending test with SLLP	~~30th March 2015~~ ~~Test to be performed on 30th March 2015~~ test performed succesfully		closed	OK	
-																	
P2SBMN02051	closed	P	2	**Brazil**	**SBMN**	**Manaus**	**1**	Circuito AFTN Manaus Lima no funciona	5 February 2015	1/ Check of the Cisco configuration 2/ Local check-up with one of our expert (on-site) in Lima As soon as we have define where exactly is the problem, INEO E&S will correct the bugg.	Problem identified	25/02/2015 => Test must be conducted, in cooparation with Manaus AFTN center and REDDIG-II technical persons, waiting for their availability. 05/03/2015 => Problem solved, distrubings still apear but were already identifed in Reddig I 10/04/2015 => INEO engineer sent at Guayaquil for network-wide test. Improvement was noticed by Corpac 30/04: continuous test asked, to validate new configuration. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week 15/07: BER ok, service ok.	~~30th March 2015~~ ~~27th March 2015~~ ~~25th April 2015~~ 17/7/2015		solved and closed	Solved and closed	INEO Solved and closed
P4SBMN02052	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**2**	Pendiente actualización diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~30th March 2015~~ ~~27th March 2015~~ ~~25th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P3SBMN02053	closed	P	3	**Brazil**	**SBMN**	**Manaus**	**3**	La perdida de paquetes en la red terrestre están por encima de lo que especifica el SLA de LEVEL 3	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: after failure constated on the end of June, no more failure experienced.	~~30th March 2015~~ ~~27th March 2015~~ ~~25th April 2015~~ 17/7/2015	LEVEL 3	solved and closed	OK Closed and Solved	LEVEL 3 INEO and ICAO Closed and Solved
P3SBMN02054	CLOSED	P	3	**Brazil**	**SBMN**	**Manaus**	**4**	Pruebas en los circuitos administrativos, conmutados ATS y AFTN realizados en una sola cadena en la red terrestre	5 February 2015	During the PSAT, it appears that this test was already performed. It could be easily checked, and upon request by ICAO, it could be done during the ORD period with the local FP and INEO remote coordination		~~27/02/2015 => INEO technician will maintain the test on site, on 03/03/15~~ 05/03/15 => Test done with success	~~28th February 2015~~	3/5/2015	closed	OK closed	ok

							File update: 3/22/2016 11:04	REDDIG-II - Pending issues									
Item	**STATUS (as per INEO)**	**TYPE O/M**	**CRITICITY**	**Country**	**Node**	**City**	**Item #**	**Outstanding issues**	**Opening date**	**Action(s) to be performed**	**COMMENTS**	**Current update**	**Expecting closing date**	**Real closing date**	**STATUS (as per ICAO)**	**ICAO STATES Commentaries**	INEO / ICAO Responsible to solve the pending isssue
P4SBMN02055	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**5**	Teleconferencia IP no trabaja de acuerdo a las especificaciones técnicas limitada a 10 usuarios	5 February 2015	1/ Diagnostic of the current licence 2/ New 16 users licences to be provided after analysis		05/03 : Hardware limitation found, solution to be provided. Will be codec change or hardware addition 30/04: hardware under procurement 15/07: latest test unsuccsesful, pending confiugration change. 21/09: test on laboratory is performed, new Cisco configuration	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 31/7/2015 end of september		Solved and closed	The IP teleconference met with the quality of voice and number of users(16)	INEO closed and solved
P4SBMN02056	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**6**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: comment asked 15/07: finalized aspect.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		closed and solved	OK Closed and Solved	INEO Closed and Solved
P3SBMN02057	CLOSED	P	3	**Brazil**	**SBMN**	**Manaus**	**7**	Canal administrativo con Ecuador no opera	5 February 2015	1/ Analysis of the Cisco Configuration 2/ Correction to be proposed	To be solved from Ecuador side	12/03/2015 => new configuration sent to Ecuador, pending tests 16/03/2015 => test achieved, still not operational 27/03/2015 => A Cisco expert will assist us for the test on April 3rd 10/04/2015 => INEO engineer sent at Guayaquil	~~10h March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ 24th April 2015	4/20/2015	closed	OK	
P3SBMN02058	closed	P	3	**Brazil**	**SBMN**	**Manaus**	**8**	Observación pendiente desde la FAT: En caso de falla del servidor central del NMS en Manaos el servidor de reserva de Ezeiza debería asumir todas las funciones del servidor central con todas las atribuciones de monitoreo y control sobre todas las estaciones	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	27/02/15 => Problem identifeid => Solution will be implemented 04/03/15 ~~05/03/15 => solution implemented, tests passed with success, see email with summary of the test~~ 20/04/2015 => Complementary tests to be done by ICAO to comfirm the pb is solved 15/07: pending new test 09/09: failover procedure has been checked and is working, but failover is only about the server and not the station	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 31/7/2015		solved but not closed	Solved but not closed missing the respective test to verify if the transference are working properly	INEO considers this observation solved and closed. (see email 09/09/2015)
P4SBMN02059	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**9**	Falta pruebas BER en canales AFTN	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week 15/07: closed as per June tests	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Closed and solved	OK Closed and Solved	INEO AFTN Closed and Solved
P4SBMN020510	closed	P	4	**Brazil**	**SBMN**	**Manaus**	**10**	Falta pruebas SAT LOOP BER TEST	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/02/2015 => INEO technician will conduct the test on site, on 30/03/15 06/03/15 => As talked during teleconference, the test requires to shutdown the whole satellite network. Need to confirm and coordinate it. 12/03/2015: procedure sent, pending on test to be coordinated by ICAO 30/04: new procedure sent with calendar (finalized on 11/05). 22/05: finalization should be onFr 22th of May 15/07: some stations were below the scope. Interference check asked.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Solved	Solved	INEO After the first trials the BER SAT LOOP test was not positive it is required action to obtain the right BER value

File update: 3/22/2016 11:04

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P4SBMN02011	CLOSED	P	4	**Brazil**	**SBMN**	**Manaus**	**11**	Pruebas pendiente en circuitos orales ATS , administrativos AFTN en una de las cadenas de la red satelital	5 February 2015	During the PSAT, it appears that this test was already performed. It could be easily checked, and upon request by ICAO, it could be done during the ORD period with the local FP and INEO remote coordination		27/02/2015 => INEO technician will conduct the test on site 06/03/2015 => Waiting for Result report	~~25th February 2015~~ 10th March 2015	3/10/2015	closed	OK solved	OK
P1SBRF05021	closed	P	2	**Brazil**	**SBRF**	**Recife**	**1**	Perdida de paquetes en la red terrestre LEVEL 3 con todos los nodos	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: no more issue	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	LEVEL 3	solved and closed	Closed	Closed and Solved
P4SBRF05022	closed	P	4	**Brazil**	**SBRF**	**Recife**	**2**	Pendiente pruebas BER AFTN	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: no issue regrding this point as far as known	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		OK Colosed and Solved	OK Closed and Solved	INEO Closed and Solved
P3SBRF05023	closed	P	3	**Brazil**	**SBRF**	**Recife**	**3**	Falsa alarma NMS (IBUC) y RX 1 + 1	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/2015 => Problem identified => Implementation of the solution in progress, to be achieved on 09/03/15 23/03/2015 => new NMS problem identified: graphical issue on representation 10/04/2015 => INEO technician mission scheduled. 22/05/2015 => INEO technician mission for HDD change and copy 15/07: INEO restarted the device for parameter actualization, reported ok by technician. 21/09: problem solved after total NMS check between the 7th and 21th of september	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		pending	Noted the new date week of 20July	**INEO**

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Item	STATUS (as per INEO)	TYPE O/M	CRITI CITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2SCEL02051	closed	P	2	**Brazil**	**SBCT**	**Curitiba**	**1**	Switching of LNB does not work	5 February 2015			22/05/2015 => INEO technician mission pendiong on part delivery 15/07: switch changed, reported ok by technician.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Cllosed and Solved	OK Closed and Solved	INEO ok Closed and Solved
P3SCEL05021	CLOSED	P	3	**Chile**	**SCEL**	**Santiago**	**1**	Dañada pantalla del reloj GPS	5 February 2015	New equipment received in INEO Premises. Will be sent to the site asap		~~27/02/2015 => Coordination with FP for shipment in progress~~ ~~04/03/2015 => New equipment sent~~ ~~04/03/15; waiting for unit exchange to be done by FP~~ ~~18/03/2015 => Delivery pending~~ 20/04/2015 => new equipment received, installed and correctly working (recovery of faulty equip to be organize by INEO)	~~4th March 2015~~ ~~09th Marsh 2015~~ ~~TBD, pending on FP feedback~~	4/20/2015	closed and solved	OK Closed	OK INEO sent the equipment
P3SCEL05022	closed	P	3	**Chile**	**SCEL**	**Santiago**	**2**	NMS: refresco cambios de estados muy lento	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/2015 => in local NMS it seams correct refresh. For the distant NMS it is not possible to improve it due to satellite hop 30/04: information requested 22/05/2015: information asked to subcontractor for webbrowser optimization 15/07: implementation Opera or Chrome in 64bits version shows better results in latency.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	3/6/2015	solved and closed	OK Closed and Solved	INEO Closed and Solved
P3SCEL05023	CLOSED	P	3	**Chile**	**SCEL**	**Santiago**	**3**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/2015 => Problem identified => Implementation of the solution in progress 12/03 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site	~~20th February 2015~~ ~~6th March 2015~~ ~~09th Marsh 2015~~ 17th Marsh 2015	3/17/2015	closed	OK	
P3SCEL05024	closed	P	3	**Chile**	**SCEL**	**Santiago**	**4**	WEB IBUC : La indicación de voltaje no corresponde al valor real	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/2015 => Problem identified => Implementation of the solution in progress, to be achieved on 09/03/15 30/04: information requested 22/05: email sent on 30/04, pending relative test. Sent back on 22/05/2015 15/07: as per manufacturer advise, this is not an issue (email 9/6/2015).	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved but not closed	Not closed Not relevant issue Chile reported that the problem was not solved	INEO Chile is reporting wrong lecture since the PSAT The manufucturer reported not relevant issue
P4SCEL05025	closed	P	4	**Chile**	**SCEL**	**Santiago**	**5**	Pendiente actualización de los diagramas	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P1SCEL05026	closed	P	1	**Chile**	**SCEL**	**Santiago**	**6**	Circuito AFTN con Lima no operativo	5 February 2015	1/ Check of the Cisco configuration 2/ Local check-up with one of our expert As soon as we have define where exactly is the problem, INEO E&S will correct the bugg.	requested to FP to check cabling and RJ45 adaptator potential problem	27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: Lima reported circuit as OK.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	4/20/2015	solved and closed	OK Solved and Closed	INEO Closed and closed
P4SCEL05027	closed	P	4	**Chile**	**SCEL**	**Santiago**	**7**	Pendiente prueba BER AFTN	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: BER test ok, as per tests from Manaus	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		closed and solved	OK Solved and Closed	INEO Closed and Solved

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P1SCEK05021	closed	P	1	**Colombia**	**SKED**	**Bogota**	**1**	Circuito oral ATS Bogota Panamá no funciona	5 February 2015	1/ Analysis of the current configuration 2/ Expert to come on site to finalise the analysis and correct the problem	on site diagnostic to be conducted 21/02	25/02/2015 => INEO expert on investigation on site in coordination with FP and PABX local provider => Close cooparation with those persons is expected to address the problem proberly 27/02/2015 => Information on PBX received from provider, New configuration implemented by 02/03/2015 05/03/15 => still on progress with active colaboration of all members concerned 12/03/2015 => test today with E1 R2 and no longer E1 E&M 16/03/2015 => configuration changed to E1R2 still the same issue 27/03/2015 => A Cisco expert will assist us for the test on April 3rd 10/04/2015 => MEVA III is being installed at Bogota. Configuration files are required. 30/04: no news received 22/05/2015: configuration will be generalized between chain A and B andconsidered solved. 15/07: configuration changed.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		closed and solved	OK Closed and Solved	OK Closed and Solved
P1SCEK05022	CLOSED	P	1	**Colombia**	**SKED**	**Bogota**	**2**	Circuito AMHS con Peru no funciona	5 February 2015	1/ Local diagnostic with our expert (on-site) in Lima 2/ Solutions to be implemented after diagnostic	Resolution pending of the item P2SBMN02051	25/02/2015 => Conflict of IP address was detected between AMHS system and Reddig-II configuration => Member states must be responsible for the NAT translation between the two systems => Expecting action from ICAO 06/03/2015 => Status & configuration update asked to CORPAC for cooperation ~~12/03/2015 => ping test is working, from SKED (Cisco) to SPIM (router de Corpac). Pending details~~ 20/04/2015 ping => AMHS is working (see email from CORPAC 20/04) 22/05/2015: considered closed	~~18th February 2015~~ 24th February 2015 22/05/2015	~~20/04/2015~~ 28/05/2015	closed	OK. Circuit under evaluation by the respective AMHS Messages Centers	OK AMHS is OK on satellite network but present problem in the Ground Network (INEO/level 3 responsability)
P2SKED02053	CLOSED	P	2	**Colombia**	**SKED**	**Bogota**	**3**	Administrative voice circuits are not separated from Operational group inside the router.	5 February 2015			30/04: configuration changed, pending test 22/05/2015: considered closed	15/05/2015 22/05/2015	5/27/2015	closed	OK	OK
P2SEGU05021	CLOSED	P	2	**Ecuador**	**SEGU**	**Guayaquil**	**1**	Circuitos de voz administrativos no operativos	5 February 2015	1/ Analysis of the current configuration 2/ Expert to come on site to finalise the analysis and correct the problem	Analysis in progress	12/03/2015: configuration sent, to be installed and tested 16/03: configuration did not solve the issue, it improved communication off hook detection 27/03 A Cisco expert will assist us for the test on April 3rd	~~10h March 2015~~ ~~20th March 2015~~ 10th April 2015		closed	OK	

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2SEGU05022	closed	P	2	**Ecuador**	**SEGU**	**Guayaquil**	**2**	Perdida de paquetes red terrestre Level 3 con Manaos,Recife Guyana Uruguay	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: no failure reported	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	LEVEL 3	Solved and Closed	Solved and Closed	INEO & LEVEL 3
P4SEGU05023	Closed	P	4	**Ecuador**	**SEGU**	**Guayaquil**	**3**	Pruebas BER AFTN pendientes	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week 15/07: no issue reported since new configuration in June, generalized configuration of the successful one.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Solved and Closed	Solved and Closed	INEO
P3SEGU05024	CLOSED	P	3	**Ecuador**	**SEGU**	**Guayaquil**	**4**	Prueba Tx switch (7.1.1) no pasó	5 February 2015	After analysis, it appears that the IBUC needs to be updated. To do so, we need to be connected directly to the equipment. INEO requests from ICAO the support from the local FP in order to perform this action.		27/02/2015 => Procedure to be sent by INEO to FP as per item # P2TTZP05024 (Piarco) 06/03/2015 => procedure sent, but power connector must be tightened before upload, but this solution already worked in others nodes 09/03/2015 => problem soved according to email from Raul Avellan of 09/03	28 February 2015	2/28/2015	closed	OK solved	ok
P3SEGU05025	CLOSED	P	3	**Ecuador**	**SEGU**	**Guayaquil**	**5**	Voz IP teleconferencia calidad pésima	5 February 2015	1/ Diagnostic of the current configuration 2/ New configuration to be proposed after analysis 3/ Configuration implmented, to be tested (12/03)		05/03/2015 => diagnostic still on progress 13/03/2015 => modem configuration changed, test pending. 27/03/2015 => tests achieved with Manaus unsuccessful 30/04/2015: Pending test with new firmware 22/05/2015: new firmware not succesful. Pending configuration change and tests. 15/07: during teleconference tests in June, quality was good	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Quality of voice ok but not the IP telephone system	Quality of voice ok but not the IP telephone system	INEO

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SEGU05026	closed	P	3	**Ecuador**	**SEGU**	**Guayaquil**	**6**	Falsas alarmas de operación de las interfases seriales y E1	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 27/03/2015: testes achieved appears to be a communication instability between NMS and routers, as SSH connection is very sensitive 21/09: solved after NMS works	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 15/09/2015		Pending	OK action on progress but not completed. Noted the new date week of 20th July	INEO Pending
P4SEGU05027	CLOSED	P	4	**Ecuador**	**SEGU**	**Guayaquil**	**7**	Pending ATS voice circuit test between Guayaquil and CENAMER	5 February 2015	1/ Analysis of the current configuration 2/ Pending to interconnection between Bogota/Maiquetia and Honduras	resolution pending of the item P1SCEK05021	06/03/2015 Connection tests achieved, phone number changed in CENAMER. Remaining Skywan instalbility in Tegucigalpa 27/03: instability solved 20/04/2015 => On monitoring	~~23th February 2015~~ ~~6th March 2015~~ ~~13th March 2015~~ 20/ March 2015		closed	OK Solved but not closed the circuit is under observation	ICAO OK Solved
P4SOCA05021	CLOSED	P	4	**French Guiana**	**SOCA**	**Cayenne**	**1**	El conector de energía del teléfono IP no funciona	5 February 2015	A solution will be proposed by INEO to the site		~~06/03/2015 => We propose to use a tyrap to tighten the cable on telephone's base station~~ ~~12/03/2015 => confirmation sent on 12/03/2015~~ 17/03/2015 => closed as per email of 17th of march	~~25th February 2015~~ ~~03th March 2015~~ 17h March 2015	3/17/2015	closed	OK	
P4SOCA05022	CLOSED	P	4	**French Guiana**	**SOCA**	**Cayenne**	**2**	Diagramas circuitales incorrectos (WVG)	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P3SOCA05023	CLOSED	P	3	**French Guiana**	**SOCA**	**Cayenne**	**3**	Dificultad leer la direcciónIP del WVG	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: graphic actualized	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	Solved and closed	INEO
P3SOCA05024	CLOSED	P	3	**French Guiana**	**SOCA**	**Cayenne**	**4**	Error en la interface LAN no trabaja	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress, to be achieved on 09/03/15	~~20th February 2015~~ ~~6th March 2015~~ ~~9th March 2015~~ 20th Marsh 2015	3/20/2015	closed	OK	
P3SOCA05025	CLOSED	P	3	**French Guiana**	**SOCA**	**Cayenne**	**5**	Modem B no va en verde cuando se enciende	5 February 2015	1/ Diagnostic with FP to be performed 2/ If faulty equipment, will open an RMA number to replace the equipment	Analysis in progress with NDSatcom	06/03/2015 ND Satcom will send us a new software and an upgrade procedure for the network 27/03: ND Satcom is still working on the new version. Solutions should be exposed next week 10/04: New version to be deployed next week. SkyNMS 3.25 allready installed at Manaus 20/04: Software uploaded,test ok	~~10h March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ 24th April 2015	4/20/2015	closed	OK	

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2SOCA05026	closed	P	2	French Guiana	SOCA	Cayenne	6	Problema posterior con el circuito AFTN con Manaos	5 February 2015	1/ Check of the Cisco configuration -> Conf. OK 2/ Discussions undergoing with local FP	problem already observed during REDDIG 1 operation	27/05: Lab test on-going, local SSR tests resulted with intermittent issue and latency but regular SSR is OK. Further progress expected next week 15/07: no issue reported since new configuration implemented in June	17/7/2015		closed and solved	Closed and Solved	INEO
O1SOCA05027	CLOSED	O	1	French Guiana	SOCA	Cayenne	7	Communication problem with Manaus according to the email from ICAO (17th Feb.)	17 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the Item M1SLLP17021	12/03/2015: test successful, only SYGC was out due to last mile issue	9th March 2015	3/12/2015	closed	OK	
P3SYGC05021	CLOSED	P	3	Guyana	SYGC	Georgetown	1	No hay indicación de status en uno de los switches en el MAP VIEW	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	20/04/2015 => both switches are up	24th April 2015		closed	OK Solved	ICAO OK Solved
P3SYGC05022	CLOSED	P	3	Guyana	SYGC	Georgetown	2	No se puede hacer setting en las interfaces de voz	5 February 2015	INEO sent an email on the 18th Feb. explaining that modifications on voice interfaces are possible, mainly to change the attenuation or the gain to make the communication better. We sent to the FP a procedure.			18 February 2015	2/18/2015	closed	OK closed	
O1MHTG12051	CLOSED	O	1	Honduras		Tegucigalpa	1	Solicitud de activación de los servicios (email 12/02/2015)	12 February 2015	Procedure to declare the new station in the network to be done	problem identified and expected resolution for 21/02	21/04/2015 => On monitoring	25th february 2015		closed	OK Solved	ICAO OK Solved
P4SGAS05021	CLOSED	P	4	Paraguay	SGAS	Asuncion	1	Alarma sonora de la UPS en modo batería, prácticamente inaudible	5 February 2015	The equipment is working as presented during the FAT. Please precise the issue.			20 March 2015		closed	OK Solved	OK
P3SGAS05022	closed	P	3	Paraguay	SGAS	Asuncion	2	No se cuenta con el antivirus que se halla especificado en el Documento REDDIG II SDD Scope of Supply Rev. F	5 February 2015	To be provided by INEO		15/07: procedure sent	17/7/2015		closed and solved	Closed and Solved	INEO The antivirus was provided and sent the link to download it the 16th of July
P3SGAS05023	CLOSED	P	3	Paraguay	SGAS	Asuncion	3	El breaker Q5 presenta un falso contacto por lo que deberá ser cambiado	5 February 2015	INEO have contacted his local subcontractor to perform the modification			26 February 2015	2/26/2015	closed	OK Solved	OK

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2SGAS05024	ON PROGRESS	P	2	**Paraguay**	**SGAS**	**Asuncion**	**4**	No se configuro la línea Administrativa IP	5 February 2015			27/02/2015 => As per SDD, this request seems to be out of scope of INEO ~~06/03/2015~~ ~~A coordination email was sent to Paraguay for configuration changes in the Cisco.~~ ~~We are pending to that information to keep working on this issue and make tests with Paraguay~~. 12/03/2015: no news from Paraguay 16/03: configuration sent, pending tests 27/03: test resulted not succesful, but SIP proxy must be the VCS, not the Cisco 10/04: expert contracted and made Cisco configuration changes, and IPBX little changes. Specific test and config changes must be achieved by Paraguayan staff. 20/04: pending new info 22/05/2015:pending new info 15/07: pending new info regarding test achieved by Asuncion staff 21/09: test results pending	~~10h March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ ~~24th April 2015~~ 31/07/2015		pending	Not solved still pending Noted new date 24thApril	INEO ICAO: The configuration of administrative line is INEO responsability INEO: the problem is the interconnection with the local system.
P3SGAS05025	closed	P	3	**Paraguay**	**SGAS**	**Asuncion**	**5**	La grafica de representación de los equipos en los nodos en el NMS no ha sido mejorada, tal como se había observado en la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: modification achieved	~~10h March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ 24th April 2015 15/07/2015		solved and closed	OK Closed and Solved	INEO NMS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites
P3SGAS05026	CLOSED	P	3	**Paraguay**	**SGAS**	**Asuncion**	**6**	Al realizar la prueba de redundancia del Capítulo 7 Pag. 70/125 de la PSAT, las IBUCs no indican las fallas y no conmutan automáticamente	5 February 2015	After analysis, it appears that the IBUC needs to be updated. To do so, we need to be connected directly to the equipment. INEO requests to ICAO the support from the local FP in order to perform this action.		25/02/2015 => Solved by INEO (Closed as per INEO)	28 February 2015	2/28/2015	closed	OK	
P3SGAS05027	closed	P	3	**Paraguay**	**SGAS**	**Asuncion**	**7**	El puerto serial 0/0/0 del router GBB presenta una falla en donde pierde paquetes en Recepción, por lo cual la tarjeta 2-Port Async/Sync Serial WAN Interface Card debe ser reemplazada	5 February 2015	Analysis undergoing -> An RMA will be opened if necessary	waiting for a clear diagnostic from SGAS that it is a hardware problem	17/03: update asked to FP 20/04: update asked 30/04: pending test (see email 22/04) 22/05: idem 15/07: closed as per succesful configuration implementation 21/09/15: All BER tests done now	~~10h March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ 24th April 2015 15/07/2015		pending	Still pending the BER test. Noted the new date 24th April	INEO
P4SGAS05028	closed	P	4	**Paraguay**	**SGAS**	**Asuncion**	**8**	Pendiente actualización de los diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2SGAS05029	closed	P	2	**Paraguay**	**SGAS**	**Asuncion**	**9**	Perdida de paquetes en la red terrestre LEVEL 3 con Bolivia , Recife (Muy alta), Colombia,French Guyana, Guyana y Uruguay	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: General state is ok, pending one issue with AMHS with Paraguay.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	LEVEL 3	solved and closed	OK closed and solved	ICAO/LEVEL 3 LEVEL 3/INEO
O3SGAS110210	CLOSED	O	1	**Paraguay**	**SGAS**	**Asuncion**	**10**	Communication problems which forced Paraguay to pass services through the Level 3 network (email OACI 11/02)	11 February 2015	1/ Remote analysis of the problem 2/ Expert from INEO to be send on site to point again the antena	problem Identified as a bad aligment of the antena. On site technitian for 23/02	25/02/2015 => Solved after intervention of INEO expert on site (Closed as per INEO)	~~17th february 2015~~ 25th February 2015	2/25/2015	closed	OK	
-																	
P1SPIM05021	CLOSED	P	1	**Peru**	**SPIM**	**Lima**	**1**	Circuito AFTN con Manaos y Santiago inoperativos	5 February 2015	Remote Diagnostic under progress	Resolution pending of the item P2SBMN02051	27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. 15/07: closed as per tests conducted on June	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	OK Closed and Solved	INEO
P2SPIM05022	CLOSED	P	2	**Peru**	**SPIM**	**Lima**	**2**	MODEM 1070 cadena A no operativo	5 February 2015	1/ Spare part installed 2/ Faulty equipment to be collected by INEO for reparation & replacement (Waiting for ICAO instructions) 3/ Spare Modem to be declared in the network		25/02/2015 Solved by INEO => Closed as per INEO	~~15th February 2015~~ 24th February 2015	2/24/2015	closed	OK	
P4SPIM05023	closed	P	4	**Peru**	**SPIM**	**Lima**	**3**	La grafica de representación de los equipos en los nodos en el NMS no ha sido mejorada, tal como se había observado en la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: graphical aspect changed	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved but not closed	Not closed. NMS aspect is not completed yet. No indication about which position (A or B) for IBUs and LNBs	INEO NMS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SPIM05024	closed	P	3	**Peru**	**SPIM**	**Lima**	**4**	Falta actualización de los diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P2SPIM05025	closed	P	2	**Peru**	**SPIM**	**Lima**	**5**	Perdida de paquetes red terrestre Level con Argentina,, Manaos, Colombia , Guyana y Venezuela	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: no failure reported so far	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	LEVEL 3	closed and solved	OK Closed and Solved	LEVEL 3 INEO and ICAO
P2SPIM05026	closed	P	2	**Peru**	**SPIM**	**Lima**	**6**	Numero ATS d no corresponde	5 February 2015	Local intervention of our expert		27/02/2015 => Targetted 02/03/2015 20/04/2015 => no existe numero ATS-D configurado en la REDDIG II en Lima. As debe ser el numero que manda la PBX que no corresponde. Necesitamos mas detalles. 15/07: issue corrected by Ecudaor	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		Solved and Closed	Solved and Closed	INEO
P4SPIM05027	CLOSED	P	4	**Peru**	**SPIM**	**Lima**	**7**	Pruebas cadena A satelital no realizadas por falla del MODEM cadena A	5 February 2015			25/02/2015 Solved by INEO => Closed as per INEO	24th February 2015		closed	OK	OK
P4SPIM05028	closed	P	4	**Peru**	**SPIM**	**Lima**	**8**	Prueba BER no realizada	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/02/2015 => INEO technician will conduct the test on site, on 30/03/15 06/03/15 => As talked during teleconference, the test requires to shutdown the whole satellite network. Need to confirm and coordinate it. 12/03/2015: procedure sent, pending on test to be coordinated by ICAO 30/04: new procedure sent with calendar (finalized on 11/05). 22/05: finalization should be onFr 22th of May	~~10h March 2015~~ ~~20th March 2015~~ ~~10th April 2015~~ 24th April 2015 11/05/2015 25/05/2015		pending	No completed pending issues	INEO After the first trials the BER SAT LOOP test was not positive it is required action to obtain the right BER value
P4SPIM05029	CLOSED	P	4	**Peru**	**SPIM**	**Lima**	**9**	Pendiente pruebas fallas de equipos (Sección 7.3)	5 February 2015	During the PSAT, it appears that this test was already performed. It could be easily checked, and upon request by ICAO, it could be done during the ORD period with the local FP and INEO remote coordination			25th February 2015		closed	OK	

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SPIM050210	closed	P	3	**Peru**	**SPIM**	**Lima**	**10**	Errores plan de discado circuitos administrativos	5 February 2015	Local intervention of our expert		27/02/2015 => Targetted 02/03/2015 06/03/2015 => New configuration was sent to CORPAC on March 06th, pending to be implemented and tested. 12/03/2015 => configuration sent, first test ok. Pending confirmation 16/03/2015 => new test asked to confirm diagnostic 27/03/2015 => closed as per email of 19/03 22/05/2015: configuration changed, pending update from CORPAC **15/07: no issue present in SPIM**	[date request should be] [date request should be] [date request should be] 17/7/2015		Closed and Solved	Closed and Solved	INEO
P3SPIM050211	closed	P	3	**Peru**	**SPIM**	**Lima**	**11**	Calidad voz IP teleconferencia no satisfactoria	5 February 2015	1/ Diagnostic of the current configuration 2/ New configuration to be proposed after analysis 3/ Configuration implmented, to be tested (12/03)		05/03/2015 => diagnostic still on progress 13/03/2015 => modem configuration changed, test pending. 27/03/2015 => tests achieved with Manaus unsuccessful 30/04/2015: Pending test with new firmware 22/05/2015: new firmware not succesful. Pending configuration change and tests. **15/07: quality ok as per June tests**	[date request should be] [date request should be] [date request should be] 17/7/2015		Quality of voice ok but not the IP telephone system	Quality of voice ok but not the IP telephone system	INEO
O2SPIM120212	closed	O	2	**Peru**	**SPIM**	**Lima**	**12**	anomalía que está presentándose en la comunicación AFTN de Santiago hacia Lima y Ezeiza (email OACI 12/02)	12 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the item P2SBMN02051	27/11/15 => Procedure for BER test targetted Marsh 02th => expected coordination from ICAO-Lima and FP to proceed 06/03/15 => waiting for a new diagnostic after Lima analysis 12/03/2015 => AFTN test conducted between SAEZ and SUMU and then will be spread 27/03: new tested to be conducted at SUMU and SAEZ. In addition to that, hardaware was bought by INEO to perform tests at INEO facility 10/04/2015 => INEO ingineer sent at Guayaquil for network-wide test. 27/05: Lab test on-going, local BER tests resulted with initialization issue and latency but regular BER is ok. Further progress expected next week. **15/07: AFTN ok**	[date request should be] [date request should be] [date request should be] 17/7/2015		Solved and Closed	Solved and Closed	INEO
P3SMPM05021	closed	P	3	**Suriname**	**SMPM**	**Paramaribo**	**1**	Presenta perdidas de paquetes en la red terrestre LEVEL 3 con Argentina, Manaus , Recife (muy alta). chile, Colombia, Ecuador, Guyana y Uruguay	5 February 2015	**Information transmitted to level 3 -> Wainting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by L3 were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) **15/07: no failure reported so far**	[date request should be] [date request should be] [date request should be] 17/7/2015	LEVEL 3	solved and closed	solved and closed	LEVEL 3 INEO and ICAO

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Item	STATUS (as per INEO)	TYPE O/M	CRITI CITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P4SMPM05022	closed	P	4	**Suriname**	**SMPM**	**Paramaribo**	**2**	Pendiente pruebas BER	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/02/2015 => INEO technician will conduct the test on site, on 30/03/15 06/03/15 => As talked during teleconference, the test requires to shutdown the whole satellite network. Need to confirm and coordinate it. 12/03/2015: procedure sent, pending on test to be coordinated by ICAO 30/04: new procedure sent with calendar (finalized on 11/05). 22/05: finalization should be onFr 22th of May	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	solved and closed	INEO
P3SMPM05023	closed	P	3	**Suriname**	**SMPM**	**Paramaribo**	**3**	Teleconferencia IP solo con diez usuarios	5 February 2015	1/ Diagnostic of the current licence 2/ New 16 users licences to be provided after analysis		05/03/2015 => Hardware limitation found solution to be provided. Will be codec change or hardware addition 21/04/2015 => DSP to be installed in Cisco SBMN & SAEZ 30/04: under procurement 21/09: test on laboratory is performed, new Cisco configuration will be provided	~~10th April 2015~~ ~~Shipping TBD~~		solved and closed	Solved and Closed	INEO
P3TTZP05021	closed	P	3	**Trinidad & Tobago**	**TTZP**	**Piarco**	**1**	NMS: refresco cambios de estados muy lento	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/2015 => in local NMS it seams correct refresh. For the distant NMS it is not possible to improve it due to satellite hop 30/04: information requested 22/05/2015: information asked to subcontractor for webbrowser optimization 15/07: proposed browser Opera and Chrome appears faster, pending feedback	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	3/6/2015	solved and closed	Solved and Closed	INEO
P4TTZP05022	closed	P	4	**Trinidad & Tobago**	**TTZP**	**Piarco**	**2**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: graphical representation deployed	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved but not closed	Not closed. NMS aspect is not completed yet. No indication about which position (A or B) for IBUs and LNBs	INEO MS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites
P3TTZP05023	closed	P	3	**Trinidad & Tobago**	**TTZP**	**Piarco**	**3**	Teleconferencia IP solamente trabaja con 11 usuarios no cumple con las especificaciones técnicas de la REDDIG	5 February 2015	1/ Diagnostic of the current licence 2/ New 16 users licences to be provided after analysis		05/03/2015 => Hardware limitation found solution to be provided. Will be codec change or hardware addition 21/04/2015 => DSP to be installed in Cisco SBMN & SAEZ 30/04: under procurement 15/07: new configuration to be implemented 21/09: test on laboratory is performed, new Cisco configuration will be provided	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ ~~31/7/2015~~ end of september		closed and solved	The IP teleconference met with the quality of voice and number of users(16)	INEO
P2TTZP05024	CLOSED	P	2	**Trinidad & Tobago**	**TTZP**	**Piarco**	**4**	No hay conmutación automática en el IBUC en caso de falla solamente conmuta cuando se apaga la energía	5 February 2015	After analysis, it appears that the IBUC needs to be updated. To do so, we need to be connected directly to the equipment. INEO requests to ICAO the support from the local FP in order to perform this action.		26/02/2015 => New IBUC firmware sucessfully installed => Switching problem solved => Solved as per INEO	28 February 2015	2/28/2015	closed	OK solved	ok

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Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P2TTZP05025	closed	P	2	**Trinidad & Tobago**	**TTZP**	**Piarco**	**5**	Perdida de paquetes en la red terrestre LEVEL 3 con Curitiba y Ecuador.	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: no issue rteported so far	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 31/7/2015	LEVEL 3	closed and solved	OK Closed and Solved	LEVEL 3 INEO and ICAO
O2TTZP18026	CLOSED	O	2	**Trinidad & Tobago**	**TTZP**	**Piarco**	**6**	Communication problem with Paramaribo and Manaus according to the email from ICAO (18th Feb.)	18 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the item P2SBMN02051	25/02/2015 => New configuration will be tested by Level3 as of today, on all nodes under recommandation made by our Cisco expert (CCIE certified) 27/02/2015 => New configuration implemented, solution monitoring under validation 05/03/2015 => Improvement of the routing observed, but still to be confirmed 21/04/2015 => New Skywan firmware installed => System on monitoring	21st April 2015		closed	OK	
P4SUMU05021	CLOSED	P	4	**Uruguay**	**SUMU**	**Montevideo**	**1**	Falta actualización los planos con los diagramas circuitales	5 February 2015	As-built under realization		Closing date includes finalization of drawings for **ALL** sites 27/03: documents achieved, to be shipped on Monday 30th March 2015 Proof of delivery to the end user at your disposal 22/05/2015: observations received from Manaus up to the the 22th of May will be corrected. 15/07: As built delivered	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved and closed	CLOSED Documents and CD received with modification in the circuit diagrams P	ICAO Solved and closed
P4SUMU05022	solved	P	4	**Uruguay**	**SUMU**	**Montevideo**	**2**	Unidad 1070 cadena B no enciende luz verde aun cuando opera bien	5 February 2015	The faulty unit must be replaced by a spare part coming from ICAO-Lima premises. A RMA number will be generated once the faulty unit is ready to be shipped.		06/03/2015 => shipment of faulty unit towards NDSatCom pending 16/07/2015 => Waiting for spare part available at ICAO-Lima premises (spare IDU 1070 available, but still under Peru customs since 23/06/2015) 09/09/15: spare part available at ICAO office, waiting for ICAO shipment			pending	No action made solution required	ICAO A Modem from REDDIG II Lima spare part place will be sent to Montevideo
P3SUMU05023	CLOSED	P	3	**Uruguay**	**SUMU**	**Montevideo**	**3**	Falta cambiar Feed Horn	5 February 2015			05/02/2015 => New Feed Horn and antenna Line Up to be done 24/03/2015 => New feed horn installed and antenna Line up done	24 March 2015	3/24/2015	closed	OK Closed	
P3SUMU05024	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**4**	NMS: refresco cambios de estados muy lento	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/2015 => in local NMS it seams correct refresh. For the distant NMS it is not possible to improve it due to satellite hop 30/04: information requested 22/05/2015: information asked to subcontractor for webbrowser optimization 15/07: proposed browser Opera and Chrome appears faster, pending feedback	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	3/6/2015	solved and closed	Solved and Closed	INEO

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Item	STATUS (as per INEO)	TYPE O/M	CRITI CITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P4SUMU05025	closed	P	4	**Uruguay**	**SUMU**	**Montevideo**	**5**	Calidad de la imagen no mejorada aspecto pendiente desde la FAT	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: changed	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved but not closed	Not closed. NMS aspect is not completed yet. No indication about which position (A or B) for IBUs and LNBs Noted new date 24th April	INEO MS aspect is for all sites and includes IBUC & LNB position state as per email of 12/03) Pending all other sites
P3SUMU05026	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**6**	Falta instalar antivirus en el NMS	5 February 2015	To be provided by INEO		27/03/2015: Antivirus almost identified (two remaining systems) 30/04: procurement in progress 22/05/2015: license received. Pending procedure to be sent. 15/07: procedure and FTP link sent	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		closed and solved	Closed and Solved	INEO
P3SUMU05027	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**7**	El NMS presenta información incorrecta	5 February 2015	1/ Diagnostic of the current configuration of the NMS 2/ New version of the NMS	NMS works in progress	05/03/15 => Problem identified => Implementation of the solution in progress 12/03/2015 => new NMS aspect aprouved by OACI (L.Alejos email of 12/03), to be deployed in all site 22/05/2015: graphical representation of IBUC position to be deployed. 15/07: graphical aspect changed. Pending new info	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		closed and solved	Closed and Solved	INEO
P4SUMU05028	closed	P	4	**Uruguay**	**SUMU**	**Montevideo**	**8**	Pendiente pruebas BER	5 February 2015	During the PSAT, it appears that this test was not the priority. Now, it's difficult to perform it because it means that States will have to cut the services. If requested by ICAO, it could be done during the ORD period with the local FP and INEO coordination		27/02/2015 => INEO technician will conduct the test on site, on 30/03/15 06/03/15 => As talked during teleconference, the test requires to shutdown the whole satellite network. Need to confirm and coordinate it. 12/03/2015: procedure sent, pending on test to be coordinated by ICAO 30/04: new procedure sent with calendar (finalized on 11/05). 22/05: finalization should be onFr 22th of May 15/07: tests shows a possible requirement of pointing checking, and possible interference	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 31/7/2015		pending	Pending BER Test.	INEO After the first trials the BER SAT LOOP test was not positive it is required action to obtain the right BER value
P4SUMU05029	solved	P	4	**Uruguay**	**SUMU**	**Montevideo**	**9**	La versión entregada de software para la VPN remota no es acorde al manual enviado para su instalación, no pudiendo instalarse según lo sugerido por INEO.	5 February 2015	An amendment to the User Manual will be sent to all the Reddig II Members by email.		17/03: new procedure sent, same as for SAEZ and SBMN 30/04: update requested, pending answer 22/05/2015: pending information, asked during conf call of 19/05 15/07: pending new info.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015 15 sept		pending	Not solved. Configuration must to be done by INEO the week of 20th July	INEO VPN equipment has been configured. We request a simple IP internet address to permit the connection. With the current configuration the connection is not possible.

File update: 3/22/2016 11:04

REDDIG-II - Pending issues

Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
P3SUMU050210	closed	P	3	**Uruguay**	**SUMU**	**Montevideo**	**10**	Perdidas de paquetes en la red terrestre LEVEL 3 con Bolivia, French Guyana, Surinam, Trinidad &Tobago y Venezuela.	5 February 2015	**Information transmitted to level 3 -> Waiting for the solution proposed and the ECD (Expecting Closing Date)**		25/02/2015 => New request retransmitted to Level 3 06/03/2015 => individual tests to be performed 27/03/2015 => tests conducted by LE were succesful, except French Guiana. Procedure sent on 27th of March for individual tests. 22/05/2015: pending test result (22/05/2015) 15/07: no issue reproted so far	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015	LEVEL 3	closed and solved	Closed and Solved	LEVEL 3 INEO and ICAO
P1SUMU020511	closed	P	1	**Uruguay**	**SUMU**	**Montevideo**	**11**	Async circuit for radar data from SAEZ does not work since initial installation	5 February 2015			30/04: configuration changed, pending test 22/05: improvement commented during con call of 19/05, pending more info. 15/07: Configueration is the same as with AFTN.pending info	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		solved but in observation	Solved but in observation	INEO /ICAO Radar data of Argentina is now processed in the automation ceenter of Montevideo
P2SVIM05021	CLOSED	P	2	**Venezuela**	**SVIM**	**Maiquetia**	**1**	No se observa el switcheo automatico en el RSS	5 February 2015	We have contacted our site manager, and apparently it was the automatic switching of the RSS from B to A. It's normal that it's doesn't work because it's only possible manually. Please confirm that it's issue can be SOLVED		25/02/2015 Solved by INEO => Closed as per INEO	18 February 2015	2/18/2015	closed	OK closed	
O1SVIM18022	CLOSED	O	1	**Venezuela**	**SVIM**	**Maiquetia**	**2**	Communication problem with Georgetown, Paramaribo, and Manaus according to email of the 18th Feb.	18 February 2015	OSPF Pb under analysis -> Looking for a technical solution to be implemented	Resolution pending of the item P2SBMN02051	25/02/2015 => New configuration will be tested by Level3 as of today, on all nodes under recommandation made by our Cisco expert (CCIE certified) 27/02/2015 => New configuration implemented, solution monitoring~~under validation~~ ~~05/03/2015 => Improvement of the routing observed, but still to be confirmed~~ 17/03/2015 => test asked to FP 27/03/2015 => no issue reported so far 21/04/2015 => New Skywan firmware installed => System on monitoring	27 March 2015		closed	OK System on monitoring	ok
O1SVIM25023	CLOSED	O	1	**Venezuela**	**SVIM**	**Maiquetia**	**3**	All the AFTN communication out of service	24 February 2015	Problem occured due to other equipment		25/02/2015 => Waiting for result after OSPF configuration modification done today on LEVEL3 network 27/02/2015 => solved 21/04/2015 => New Skywan firmware installed => System on monitoring	27th February 2015 21st April 2015		closed	OK Closing date	ok
#GBB_tests	CLOSED	O		**Multiple sites**	**Multiple sites**	**Multiple sites**	**1**	Issues experimented in GBB dedicated communication	4/2/2015	Individual configuration checks and tests.		30/04: configuration changed, need list of issues 22/05: idem 15/07: v14 has this issue checked, pending tests and possible correction.	~~13th March 2015~~ ~~27th March 2015~~ ~~20th April 2015~~ 17/7/2015		CLOSED	OK closed final test was made December 2015	ok
	ON PROGRESS					**Muliples sites**	**1**	Freezing of MODEM	February 2015	Is under ND SATCOM		21/09: no more issue observed since deployment of new NDSatcom software and last configuration change in Recife. Date of observation: 15/09 Could we consider the problem closed by the end of september?	31th July end of september		P ending	INEO presented an action plan to solve the frezing that will be completed by the end of 2016	INEO (NDSatcom)

File update: 3/22/2016 11:04							REDDIG-II - Pending issues									
Item	STATUS (as per INEO)	TYPE O/M	CRITICITY	Country	Node	City	Item #	Outstanding issues	Opening date	Action(s) to be performed	COMMENTS	Current update	Expecting closing date	Real closing date	STATUS (as per ICAO)	ICAO STATES Commentaries	INEO / ICAO Responsible to solve the pending isssue
Legend of colours																	
Legend colour	PENDING	The line remains uncolored since the status of the issue is still pending												Status (as per ICAO)		Customer initial color	
Legend colour	ON PROGRESS	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												pending	8	Customer initial color	
Legend colour	SOLVED	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												solved but not closed	5	Customer initial color	
Legend colour	Solution identified	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												closed	33	Customer initial color	
Legend colour	CLOSED	The colour of this line is automatically updated according the status, except the last colomn which always remains as initially colored by the customer.												TOTAL	46	Customer initial color	

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

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

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

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

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

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

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

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

ASESORIA LEGAL LEVEL 3 PERÚ S.A. V°B°

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

"2.4 The Contract shall be implemented in three phases:

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

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

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

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

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

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

"

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

"

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ICAO
Technical Cooperation Bureau

Technical Co-operation Bureau

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

LEVEL 3 PERÚ S.A.

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

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

ASESORÍA LEGAL LEVEL 3 PERÚ S.A. V°B°

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

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

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

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

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

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

Options:

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

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

See Amendment II for corresponding 22 pages.

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

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

	Unit	Qty	Unit Price USD	Total USD
Equipment: VSAT antenna				
Supply, transport and installation of a new antenna	set	1	43,433.00	43,433.00
Supply and Installation of a 3,8m Antenna	u	1		
New anchorage	u	1		
Transport DAP (Incoterm 2010) of the new antenna to the site	u	1		
VSAT antenna	set	1		
Civil work, including:	set	1	45,000.00	45,000.00
Construction of the slab with H30 concret and additives	u	1		
Ground system of the slab < 5 Ohms	u	1		
Trench and manholes from antenna to the technical room (considered distance < 70 m)	set	1		
TOTAL Equipment VSAT antenna	set	1		$88,433
	set	1		-
Equipment: Network Management System				
HP ProLiant DL160 Gen8 Base - Server, including:	u	1	14,939.00	14,939.00
Windows Server 2008 R2 Std + 5 CAL OEM HP	u	1		
Card PCI-Express 1X 8 ports series RS232 Std and Low Profile	u	1		
HP Hard Disk 300Go 3.5 SAS 15000 tours/min	u	2		
SAMSUNG screen LCD 27'' Samsung SyncMaster S27A550H	u	1		
HP LaserJet Pro 400 M401dn /33ppm	u	1		
Eaton Ellipse ECO 1200 FR USB	u	1		
WhatsUp Gold Distributed Remote 25 Devices	u	1		
Antivirus	u	1		
IP to serial converter	u	1		
TOTAL Equipment: Network Management System	set	1		$14,939
Other VSAT equipments				
IBUC 40W	u	2	11,952.00	23,904.00
Tx 1+1 switching system	u	1	6,858.00	6,858.00
Rx 1+1 switching system	u	1	7,501.00	7,501.00
LNB	u	2	569.50	1,139.00
Handheld Terminal	u	1	773.00	773.00
Set of breakers	u	1		
Coaxial connector	u	5	25.00	125.00
Coaxial cable	m	150	6.46	968.75
Power cable	m	400		
Cat 5 Cable	m	150	4.88	732.50
extra cost for stand alone REDDIG node		15%		6,300.19
TOTAL Other VSAT equipments	set	1		$48,301
Equipment: Ancillaries / Others				
Horloge RT CP 09	u	1	5,449.00	5,449.00
Rack	u	1	2,504.00	2,504.00
IP telephone set to implement the teleconference in the REDDIG II network (including installation in the technical romm and configuration)	u	1	380.00	380.00
Installation accessories	u	1	1,147.00	1,147.00
TOTAL measuring & Test equipment	set	1		$9,480
Services: Installation				
Installation of equipment on site	set	1	27,470.75	27,470.75
TOTAL Services: Installation	set	1		$27,471
Measuring equipment and tools				
LAN/NETWORK Protocol Analyzer SignalTEK II	u	1	2,527.19	2,527.19
Multimeter (one for each site)	u	1	490.44	490.44
TOTAL measuring & Test equipment	set	1		$3,018

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

ASESORÍA LEGAL LEVEL 3 PERÚ S.A. V°B°

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

	Unit	Qty	Unit Price USD	Total USD
Paraguay (Asunción)				
Supply, transport and installation of a new antenna	set	1	[illegible]	[illegible]
Supply and installation of a 5.8m Antenna	[illegible]			
New anchorage	[illegible]	[illegible]		
Transport CAF [illegible]	[illegible]	[illegible]		
Civil work, including:	set	1	[illegible]	[illegible]
Construction of the slab [illegible] and anchorage	[illegible]	[illegible]		
Ground system of the slab < 5 Ohms	[illegible]	[illegible]		
Trench and manholes from antenna to the technical room (considered distance = 50m)	set	1		
Transfer of the equipment to the new location	set	1	[illegible]	[illegible]
Notes Ground studies of the new location of the VSAT antenna are not considered and not included above Slab fundation is standard [illegible] with [illegible] Kg iron concentration The distance between the new location and the technical room should not exceed 50 meters No road or airfield crossing are included The installation of the antenna will be held before or during the migration from the existing network to the new one. However, in case this work takes more time than foreseen for the migration time of the whole network, an interruption of the services of the site will be necessary. This case will be studied by INEO ESS and ICAO				
TOTAL Paraguay (Asunción)	set	1		$84 798

ASESORÍA LEGAL LEVEL 3 PERÚ S.A. VºBº

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

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

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

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

Options

Option 1)

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

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

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

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

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

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Options 2)

Civil works for Chile:

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

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

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

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

Option 2a)
Chile: Transfer of existing antenna:

	Unit	Qty	Unit Price (US$)	Total US$
Chile (Santiago)				
Displacement of the current antenna, including:	set	1	$18 0[illegible]	$1[illegible]
Uninstall of the existing antenna	u	1		
Re-installation of the antenna	u	1		
New wire bridge	u	1		
Civil work, including	set	1	$[illegible]	$[illegible]
Construction of the slab with H30 concrete and anchors	u	1		
Ground system of the slab < 5 Ohms	u	1		
Trench and manholes from antenna up to indoor equipment (50 m)	set	1		
Crane renting, including:	set	1	$[illegible]	$[illegible]
Rent of the crane, security elements	u	1		
Transfer of the equipment to the new location	u	1		
Notes				
Ground studies in the new location of the VSAT antenna are not considered and not included above				
Slab foundation is standard 7 feet with 150 Kg concrete construction				
The distance between the new location and the technical room should not exceed 50 meters				
No road or airfield crossing are included				
The uninstall, reinstallation of the antenna will be held during the migration from the existing network to the new one. However, in case of this work takes more time than the previsted one for the migration time for the whole network, an interruption of the services of the site will be necessary. This case will be studied by INECO ESS and ICAO				
TOTAL Chile (Santiago)	set	1		$60 429

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

	Unit	Qty	Unit Price USD	Total USD
Chile (Santiago)				
Supply, transport and installation of a new antenna	set	1	[illegible]	[illegible]
Supply and installation of a 3.8 m Antenna	[illegible]	1		
New anchorage	[illegible]	1		
Transport [illegible] of the new antenna to the site	[illegible]	1		
Civil work, including	set	1	[illegible]	[illegible]
Construction of the slab [illegible] and [illegible]	[illegible]	1		
[illegible] System of the slab [illegible]	[illegible]	1		
Trench and [illegible] from antenna to the technical room (considered distance ~ 50m)	set	1		
Transfer of the equipment to the new location	set	1	[illegible]	[illegible]
Notes				
Ground studies of the new location of the VSAT antenna are not considered and not included above				
Slab foundation is standard 7.5m² with 150 Kg iron construction				
The distance between the new location and the technical room should not exceed 50 meters				
No road or airfield crossing are included				
The installation of the antenna will be held before or during the migration from the existing network to the new one. However, in case this work takes more time than foreseen for the migration time of the whole network, an interruption of the services of the site will be necessary. This case will be studied by INECO E&S and ICAO				
TOTAL Chile (Santiago)	set	1		$86 736

"

Amendment III to Contract 22501200

ASESORIA LEGAL
LEVEL 3
PERÚ S.A.
VºBº

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

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

Comments (if any) :

*= mark applicable

_____
REDDIG II PROJECT GROUP Representative

_____
Date

_____
Contractor Representative

_____"
Date

ASESORIA LEGAL LEVEL 3 PERÚ S.A. V°B°

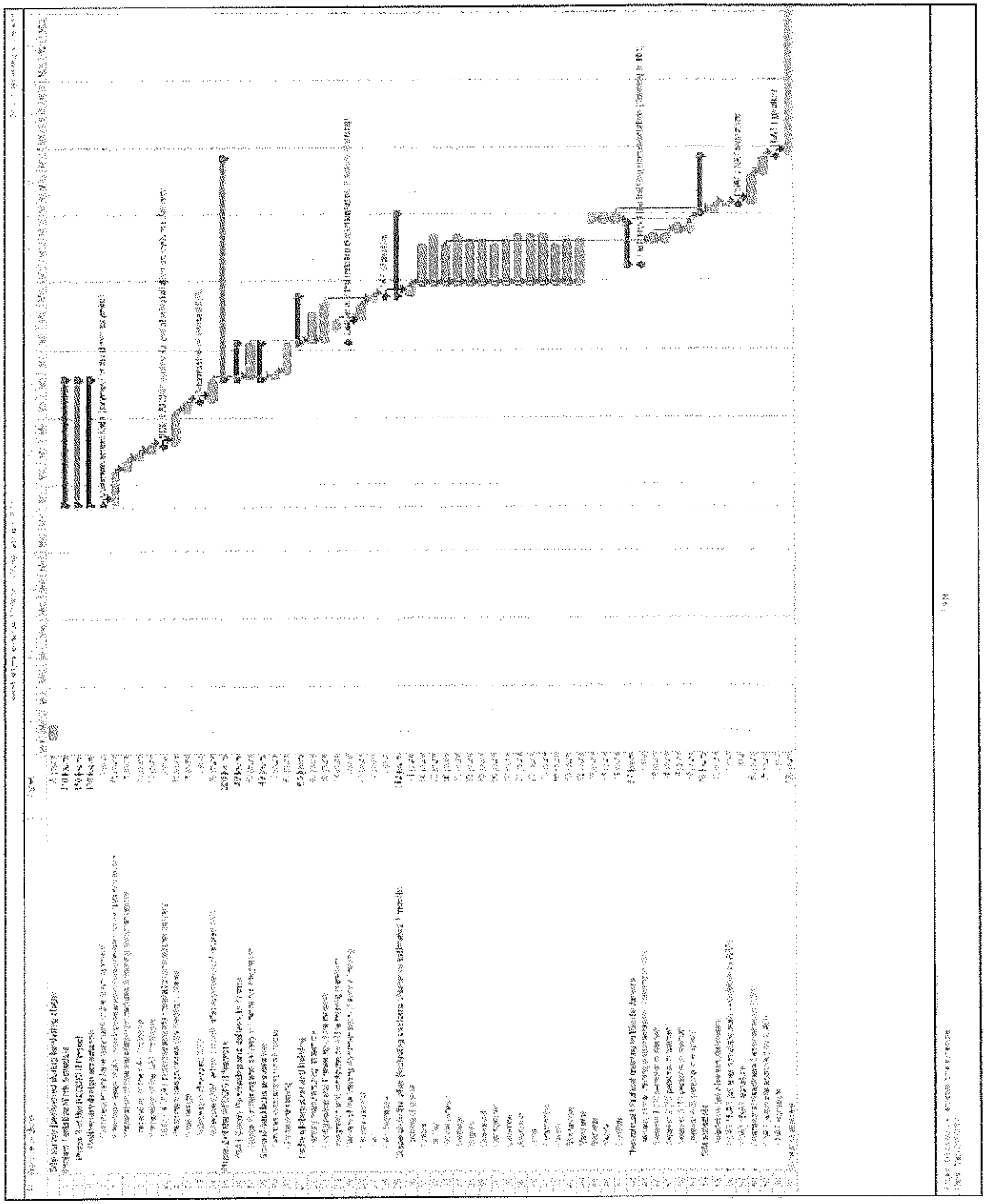
"Revised Attachment IX
Contract Implementation Schedule

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

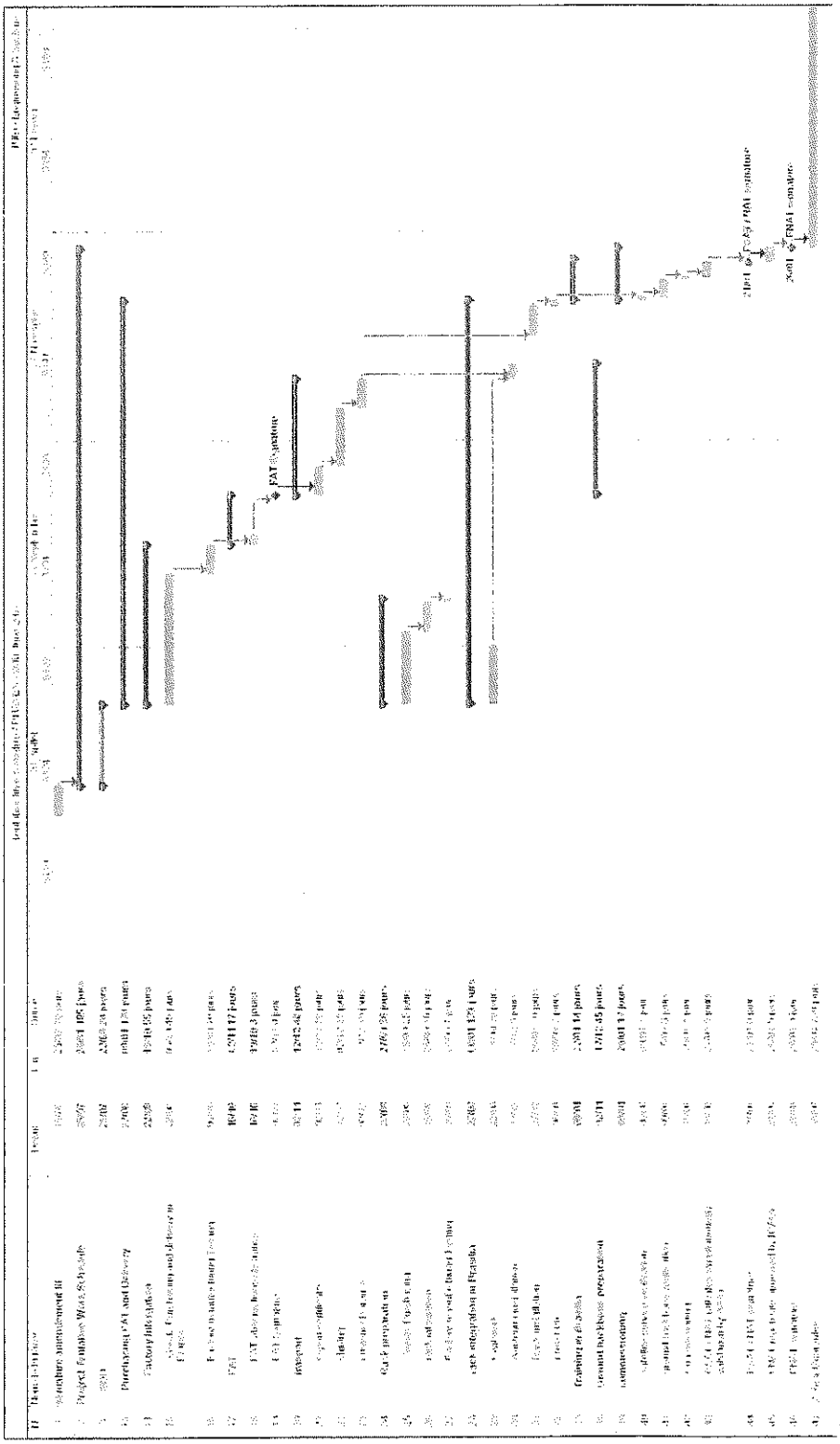
The Contractor's proposed Implementation schedules A and B are attached for information purposes only. As per Article 9.2 and 7.2.4, each of the updated Implementation Schedules is to be submitted with the System Design Documentation and shall include, amongst others, the above milestones.

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

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



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



COFELY INEO GDF SUEZ

Brasilia Services

TELEPHONY

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

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

IP address Proposal

Brasilia Number: 34 (to confirm)

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

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

Data

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

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

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

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

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

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

"5.2 **Payment Schedule and Invoicing**

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

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

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

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

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

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

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

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

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

A & A LEVEL 3 PERÚ S.A. V°B° J.O.C.U.

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

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

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

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

The Contractor shall submit:

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

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

Level 3 shall submit:

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

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

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

The Contractor shall submit:

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

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

iii. Acceptable Performance Bond as per Article 6.5.

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

Level 3 shall submit:

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

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

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

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

The Contractor shall submit:

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

ii. Acceptable Bank Guarantee, as per Article 6.3.

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

The Contractor shall submit:

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

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

iii. Acceptable Performance Bond as per Article 6.5;

The Contractor or Level 3 shall submit:

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

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

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

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

Signed on 14 JANUARY 2016, on behalf of:
Date

ICAO
Technical Cooperation Bureau

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

LEVEL 3 PERÚ S.A.

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

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

LEVEL 3 PERÚ S.A. V°B° O.C.U.

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

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

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

Comments (if any) :

* Mark applicable

_____
REDDIG II PROJECT GROUP Representative

_____
Date

_____
Contractor Representative

_____
Date

A & A LEVEL 3 PERÚ S.A. V°B° O.C.U.

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

FINAL NETWORK ACCEPTANCE TEST CERTIFICATE

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

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

On behalf of INEO Engineering and Systems / Level 3

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

Thierry Su
01/07/2015

Authorized Representative (BLOCK LETTERS)

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

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

On behalf of the REDDIG II Project Group

Onofrio Smarrelli
Authorized Representative (BLOCK LETTERS)

15 / 7 / 2015
Signature and Date

ASESORÍA LEGAL LEVEL 3 PERÚ V°B°

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

1. SECTION 1. INTRODUCTION AND PURPOSE OF THIS DOCUMENT

1.1 INTRODUCTION

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

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

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

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

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

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

Section 3.0: Describes the technical terms of reference.

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

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

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

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

1.2 SECTION 1 – PURPOSE

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

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

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

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

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

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

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

2. SECTION 2 – THE TECHNICAL COOPERATIVE AGREEMENT PROCESS

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

2.2 RELATIONSHIPS AND RESPONSIBILITIES OF THE PARTIES

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

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

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

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

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

3. SECTION 3 – TECHNICAL TERMS OF REFERENCE

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

4. SECTION 4 – FINANCIAL RESPONSIBILITIES OF THE NETWORK PARTIES

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

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

NOTES:

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

APPENDIX A

A LIST OF REFERENCE DOCUMENTS USED IN SUPPORT OF THIS AGREEMENT

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

APPENDIX B

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

1. SECTION 1 – PURPOSE OF THIS AGREEMENT

1.1 PURPOSE

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

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

2.1 RELATIONSHIP AND RESPONSIBILITIES OF THE PARTIES

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

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

3. SECTION 3 – TECHNICAL TERMS OF REFERENCE

3.1 TECHNICAL TERMS OF REFERENCE

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

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

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

3.1.4 The interconnection implies the following implementations:

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

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

3.2 MANAGEMENT TERMS OF REFERENCE

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

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

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

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

3.2.5 Maintenance coordination procedures between the NCCs

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

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

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

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

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

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

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

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

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

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

3.2.6 **Security requirements**

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

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

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

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

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

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

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

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

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

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

4. SECTION 4 – FINANCIAL RESPONSIBILITIES OF THE PARTIES

4.1 EQUIPMENT PURCHASING

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

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

4.2 SPARE PARTS LOT PURCHASING

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

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

4.3 MAINTENANCE

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

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

4.4 SPACE SEGMENT

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

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

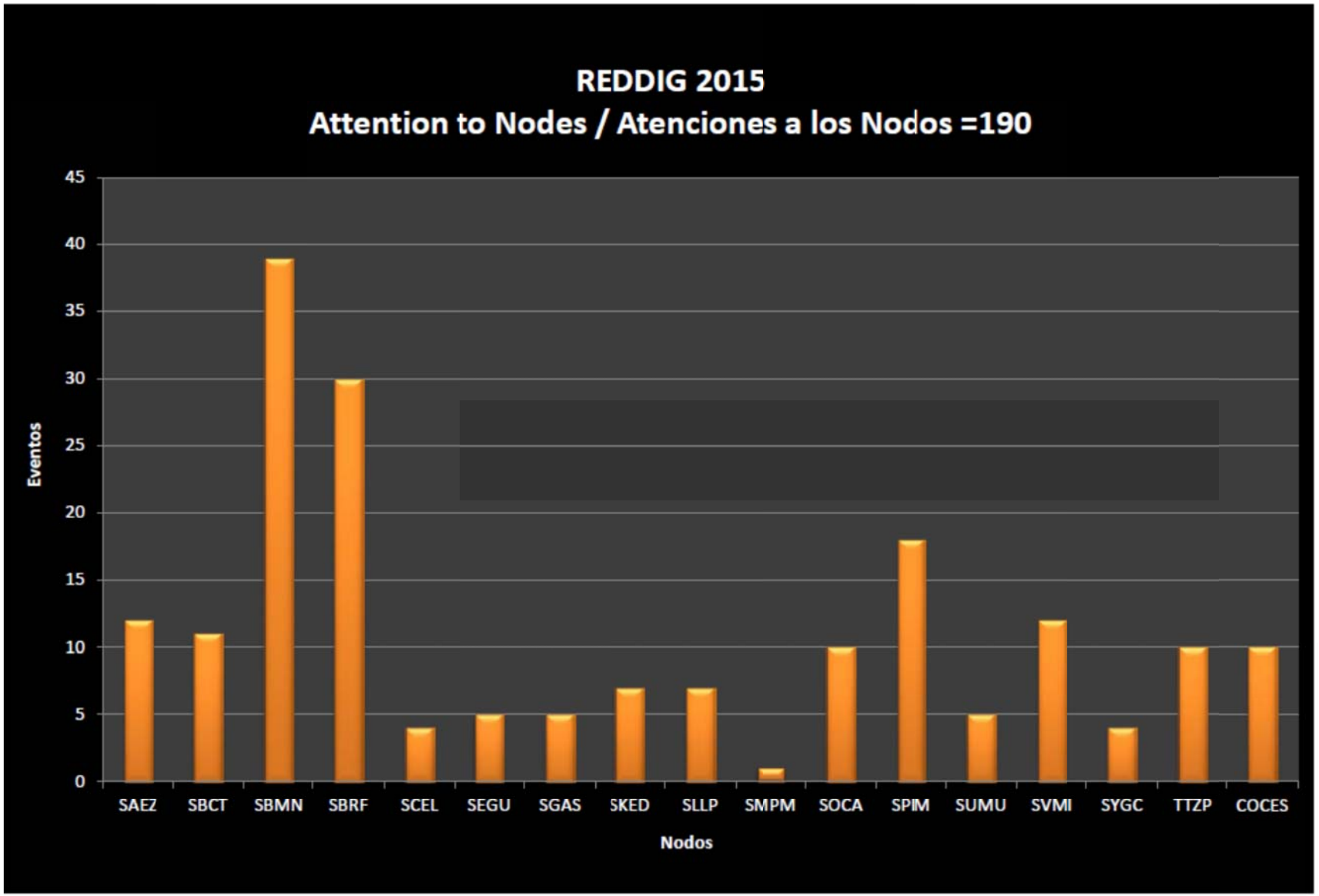
4.4.3 The circuits necessary for communications between a REDDIG II node having MODEMs participating in the interconnection with MEVA III shall be administrated by the MEVA III Service Provider. The amount charged for circuits used by the REDDIG II Member of the aforementioned node mentioned shall be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

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

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

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

Note: All equipment were replaced under warrant
Nota: Todos estos equipos fueron reemplazados bajo garantía


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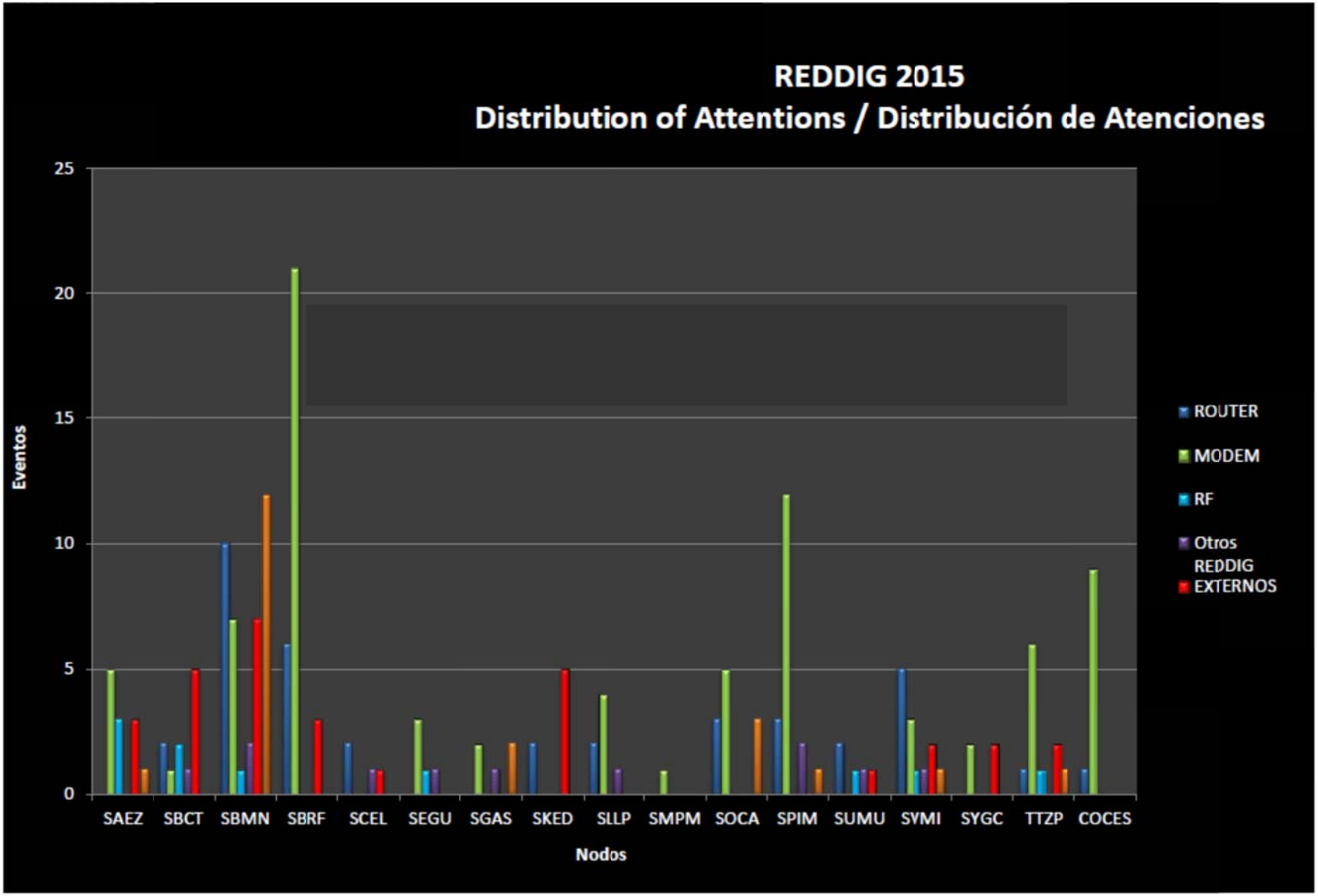
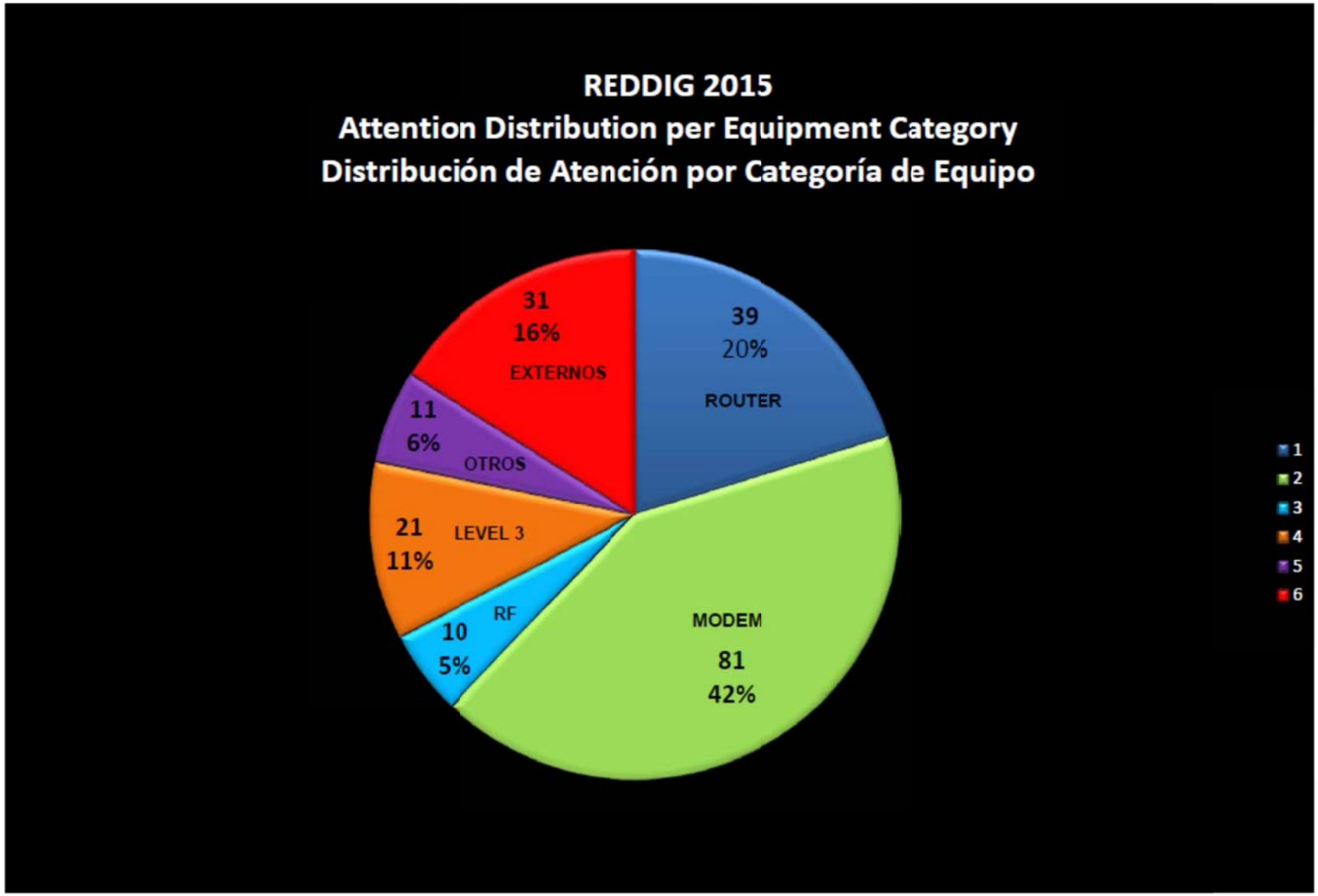
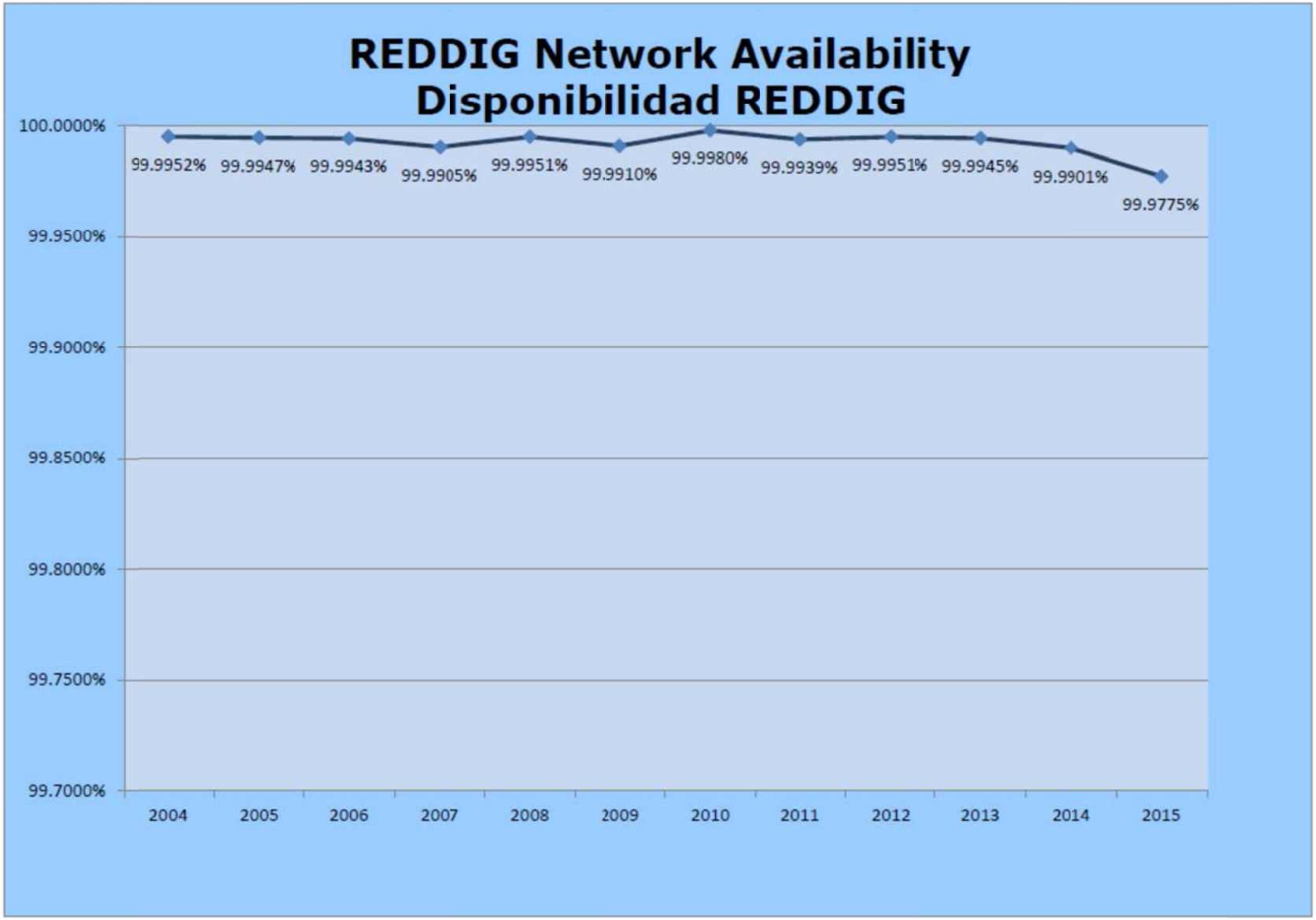
40
35
30
25
20
15
10
5
0
SAEZ
SBCT
SBMN
SBRF
SCEL
SEGU
SGAS
SKED
SLLP
SMPM
SOCA
SPIM
SUMU
SVMI
SYGC
TTZP
COCES
Nodos


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


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


REDDIG Network Availability
Disponibilidad REDDIG
100.0000%
99.9500%
99.9000%
99.8500%
99.8000%
99.7500%
99.7000%
99.9952%
99.9947%
99.9943%
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99.9951%
99.9910%
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APPENDIX L

"2015 - AÑO DEL BICENTENARIO DEL CONGRESO DE LOS PUEBLOS LIBRES"

AFTIC AUTORIDAD FEDERAL DE TECNOLOGÍAS DE LA INFORMACIÓN Y LAS COMUNICACIONES

AFTIC FOLIO Nº 48

EXPAFTIC 1624/2015

BUENOS AIRES, 05/11/2015

DIRECCION GENERAL DE ASUNTOS JURIDICOS Y REGULATORIOS

En el presente expediente la FUERZA AEREA ARGENTINA, solicita autorización para instalar y poner en funcionamiento una estación terrena maestra con tres emisiones – Banda C – del Servicio Fijo por Satélite (SFS).

Cabe señalar que la misma ha presentado la documentación necesaria para un pedido de este tipo, habiéndose expedido esta dependencia a fojas 4.

Por otra parte, el Área Obligaciones de Pago y Administración de Cobranzas ha informado que la empresa titular de este expediente no mantiene deuda con este organismo.

Por lo expuesto, se remiten los actuados con el propósito de dictaminar si el Proyecto de Resolución adjunto se ajusta a derecho.

Finalizado, retórnese a esta dependencia.

SON 48 FOJAS

JORGE RUBEN COLLETTI
Jefe Sección Coordinación Estaciones Terrenas
Área Servicios Espaciales (G.I.)
COMISION NACIONAL DE COMUNICACIONES

DINAR
3.6.

CNC COMISIÓN NACIONAL DE COMUNICACIONES

CERTIFICADO DE INSCRIPCIÓN DE MATERIALES

Resolución SC 729/80 – Resolución SC 784/87

Titular: FUERZA AEREA ARGENTINA – DIRECCION GENERAL DE CONTROL DE TRANSITO AEREO

CUIT/CUIL: 33-62830272-9

Expediente: EXPCNC 2755/2015

Tipo de Equipo: ANTENA

Número de Inscripción: A-14401

Marca: THE NORTH WEST CHINA RESEARCH INSTITUTE

Modelo: C37T

Disposición GI: 2204 GI 2015

Vigencia Desde: 05/06/2015 Hasta:

Notas:
1) Cada unidad deberá identificarse según la normativa vigente.
2) El presente certificado no es transferible.

COMISIÓN NACIONAL DE COMUNICACIONES

CERTIFICADO DE INSCRIPCIÓN DE MATERIALES

Resolución SC 729/80 – Resolución SC 784/87

Titular: FUERZA AEREA ARGENTINA – DIRECCION GENERAL DE CONTROL DE TRANSITO AEREO

CUIT/CUIL: 33-62830272-9

Expediente: EXPCNC 2754/2015

Tipo de Equipo: AMPLIFICADOR DE BAJO RUIDO

Número de Inscripción: A-14400

Marca: NORSAT

Modelo: 3220

Disposición GI: 1864 GI 2015

Vigencia Desde: 15/05/2015 Hasta:

Notas:
1) Cada unidad deberá identificarse según la normativa vigente.
2) El presente certificado no es transferible.

CNC COMISIÓN NACIONAL DE COMUNICACIONES

CERTIFICADO DE INSCRIPCIÓN DE MATERIALES

Resolución SC 729/80 – Resolución SC 784/87

Titular: FUERZA AEREA ARGENTINA – DIRECCION GENERAL DE CONTROL DE TRANSITO AEREO

CUIT/CUIL: 33-62830272-9 Expediente: EXPCNC 2756/2015

Tipo de Equipo: CONVERSOR DE FRECUENCIAS DE SUBIDA Número de Inscripción: A-14402

Marca: TERRASAT

Modelo: IBUC

Disposición GI: 1865 GI 2015 Vigencia Desde: 15/05/2015 Hasta:

Notas:
1) Cada unidad deberá identificarse según la normativa vigente.
2) El presente certificado no es transferible.

OTORGA PERMISO DE SERVICIO LIMITADO DE TELECOMUNICACIONES.

RESOLUCIÓN EXENTA Nº 4428

SANTIAGO, 04 DIC 2014
Con esta fecha se ha resuelto lo que sigue:

VISTOS:

a) El Decreto Ley Nº 1.762 de 1977, que crea la Subsecretaría de Telecomunicaciones, en adelante la Subsecretaría.

b) La Ley Nº 18.168 de 1982, Ley General de Telecomunicaciones.

c) La Resolución Exenta Nº 391 de 1985, de la Subsecretaría, que aprueba el Marco Técnico relativo a los Servicios Limitados de Telecomunicaciones, y sus modificaciones posteriores.

d) Resolución Exenta Nº 352 de 1985, de la Subsecretaría, que Aprueba el Instructivo relativo a los Servicios Limitados.

e) La Resolución Nº 1.600 de 2008, de la Contraloría General de la República, que Fija Normas sobre Exención del Trámite de Toma de Razón.

f) La Resolución Exenta Nº 470 de 2013, de la Subsecretaría, que faculta a los Jefes de División y de Departamento para firmar "Por orden del Subsecretario de Telecomunicaciones" y delega facultades que indica.

CONSIDERANDO:

Lo solicitado por la peticionaria, mediante ingreso SUBTEL Nº 117.248 del 08.10.2014 (SL-0456/2014), complementado por ingreso SUBTEL Nº 133.824 del 17.10.2014.

RESUELVO:

1.- Otórgase un Permiso de Servicio Limitado para instalar y explotar un Sistema VSAT, a la DIRECCIÓN GENERAL DE AERONAUTICA CIVIL, R.U.T. Nº 61.104.000-8, con domicilio en Av. Miguel Claro Nº 1314, Comuna de Providencia, Región Metropolitana, en adelante la permisionaria, en los términos que se señala.

2.- El período de este permiso será de diez (10) años a contar de la total tramitación de esta Resolución.

3.- El plazo para iniciar la construcción de las obras, será de un (1) mes y para su término de dos (2) meses; asimismo, el plazo para iniciar el servicio será de cuatro (4) meses. Todos estos plazos se contarán desde la fecha de la total tramitación de esta Resolución

4.- Las características técnicas y ubicación de las instalaciones del sistema que se autoriza, son las que se indican a continuación:

SISTEMA SHF.

Banda	Tierra-espacio		Espacio-tierra	
C	Transmisión (Tx)	6.014,496 (MHz)	Recepción (Rx)	3.789,496 (MHz)

Características técnicas

Estación VSAT		Tipo de emisión	Polarización	Tipo de antena	Ganancia		P.I.R.E. dBW	Ancho de banda (MHz)	N° de portadoras
ACCS	Tx	4M83G1DDT	Cruzada	Parabólica	45,3	dBi	55,3	4,83	1
	Rx				42,1	dBi	---------		1

Ubicación

Estación	Ubicación	Comuna	Región	Coordenadas	
				Latitud	Longitud
Estación Terrena ACCS (VSAT)	San Pablo N° 8411.	Pudahuel	13	33° 26' 41" Sur	70° 44' 47" Oeste
Satélite Intelsat 14	Geoestacionario INTELSAT	---------	-------	00° 00' 00,0"	45° 00' 00" Oeste

Las frecuencias señaladas deberán ser compartidas con otros permisionarios, según los requerimientos de utilización del espectro radioeléctrico que determine la Subsecretaría.

5.- La permisionaria no podrá iniciar servicios sin que las obras e instalaciones hayan sido previamente autorizadas por la Subsecretaría; para estos efectos deberá solicitar, por carta certificada, que se verifique que dichas obras e instalaciones se encuentran correctamente ejecutadas y corresponden al proyecto aprobado.

6.- Es obligación la permisionaria, el conocimiento y cumplimiento de las disposiciones de la Ley General de Telecomunicaciones, de sus Reglamentos y sus modificaciones, en lo que le sean aplicables, atendida la calidad que adquiere en virtud de esta Resolución.

ANÓTESE, COMUNÍQUESE Y NOTIFÍQUESE.
POR ORDEN DEL SUBSECRETARIO DE TELECOMUNICACIONES.

lo que transcribo para su conocimiento
Saluda atentamente a Ud.

ENOC ARAYA CASTILLO
JEFE DIVISIÓN CONCESIONES

7049

RECIBIDO
15 DIC 2014
D.G.A.C.

LIST OF REDDIG SPARE PARTS / LISTA DE REPUESTOS REDDIG I					
	Description	Provider	Model	Quantity	Series #
	REDDIG II SPARE PARTS SEND FROM BRAZIL				
	EQUIPMENT AND GENERAL SPARE PARTS				
	REDDIG I SPARE PARTS				
	EQUIPMENT AND GENERAL SPARE PARTS				
129	Power supply for CX950	Memotec	VLT130-3000S1	1	2634
130	Power supply for CX950	Memotec	VLT130-3000S1	1	2604
131	Power supply for CX950	Memotec	VLT130-3000S1	1	1063
132	Power supply for CX950	Memotec	VLT130-3000S1	1	2434
133	Power supply for CX950	Memotec	VLT130-3000S1	1	1005
134	Power supply for CX950	Memotec	VLT130-3000S1	1	1061
135	Power supply for CX950	Memotec	VLT130-3000S1	1	1067
136	Power supply for CX950	Memotec	VLT130-3000S1	1	1088
137	Dual Analog Voice Card	Memotec	AZ004010	1	052171060
138	Dual Analog Voice Card	Memotec	AZ004010	1	052172487
139	Dual Analog Voice Card	Memotec	AZ004010	1	052172484
140	Dual Analog Voice Card	Memotec	AZ004010	1	052172486
141	Dual Analog Voice Card	Memotec	AZ004010	1	1000339848
142	Dual Analog Voice Card	Memotec	AZ004010	1	90030009411
143	Dual Analog Voice Card	Memotec	AZ004010	1	9003000738
144	Fast Ethernet 10/100 Card	Memotec	AZ001011	1	081830913
145	Fast Ethernet 10/100 Card	Memotec	AZ001011	1	052173027
146	Fast Ethernet 10/100 Card	Memotec	AZ001011	1	052173028
147	Fast Ethernet 10/100 Card	Memotec	AZ001011	1	05273174
148	Fast Ethernet 10/100 Card	Memotec	AZ001011	1	052173175
149	Fast Ethernet 10/100 Card	Memotec	AZ001011	1	061082686
150	Fast Ethernet 10/100 Card	Memotec	AZ001011	1	061082680
151	10 Base-T Ethernet Card	Memotec	AC004150	1	9002000306
152	10 Base-T Ethernet Card	Memotec	AC004150	1	9002000285
153	ISDN Card	Memotec	AC004060	1	1000328415
154	Digital Voice Processor	Memotec	AZ004114	1	1000315047

LIST OF REDDIG SPARE PARTS / LISTA DE REPUESTOS REDDIG I					
	Description	Provider	Model	Quantity	Series #
155	Digital Voice Processor	Memotec	AZ004114	1	1000315043
156	Digital Voice Processor	Memotec	AZ004114	1	061092235
157	Digital Voice Processor	Memotec	AZ004114	1	061091982
158	Digital Voice Processor	Memotec	AZ004114	1	052169078
159	Digital Voice Processor	Memotec	AZ004114	1	052169066
160	E1 Expansion	Memotec	AZ004120	1	052169024
161	V.35 H	Memotec	AZ002312	1	081807596
162	Multi I/O V.24	Memotec	AZ002325	1	062236450
163	Multi I/O V.24	Memotec	AZ002325	1	9002000160
164	Multi I/O V.24	Memotec	AZ002325	1	9002001222
165	Multi I/O V.24	Memotec	AZ002325	1	9002001230
166	Multi I/O V.24	Memotec	AZ002325	1	062236456
167	Multi I/O V.24	Memotec	AZ002325	1	9002000250
168	Module Ram 32 MB			1	040525
169	Module Ram 32 MB			1	045385
170	Module Ram 32 MB			1	07AD00134
171	Module Ram 32 MB			1	07AD00114
172	Module Ram 32 MB			1	07AD00113
173	Module Ram 32 MB			1	07AD00135
174	Slim Card E&M	Memotec	AZ004025	1	1000370325
175	Slim Card E&M	Memotec	AZ004025	1	1000370752
176	Slim Card E&M	Memotec	AZ004025	1	1000370677
177	Slim Card E&M	Memotec	AZ004025	1	1000328561
178	Slim Card E&M	Memotec	AZ004025	1	1000328572
179	Slim Card E&M	Memotec	AZ004025	1	052167044
180	Slim Card E&M	Memotec	AZ004025	1	052167058
181	Slim Card E&M	Memotec	AZ004025	1	052167029
182	Slim Card E&M	Memotec	AZ004025	1	052167041
183	Universal I/O	Memotec	AZ002320	1	082389450
184	Universal I/O	Memotec	AZ002320	1	082389447
185	Universal I/O	Memotec	AZ002320	1	092427151

LIST OF REDDIG SPARE PARTS / LISTA DE REPUESTOS REDDIG I					
	Description	Provider	Model	Quantity	Series #
186	Universal I/O	Memotec	AZ002320	1	092427153
187	Universal I/O	Memotec	AZ002320	1	92427152
188	Universal I/O	Memotec	AZ002320	1	92427154
189	Ring Generator	Memotec	AZ009050	1	072294201
190	Ring Generator	Memotec	AZ009050	1	082388103
191	Ring Generator	Memotec	AZ009050	1	92425216
192	Ring Generator	Memotec	AZ009050	1	92425217
193	Ring Generator	Memotec	AZ009050	1	92425210
194	Ring Generator	Memotec	AZ009050	1	052174923
195	Chassis CX950	Memotec	AC001360	1	CA2508
196	Multiplexor CX950e Chassis+Motherboard	Memotec	AC002010	1	092425306
197	Memotec Console Cable	Memotec		1	-
198	Chassis CX950	Memotec	AC001360	1	CA02740
199	Multiplexor CX950e Chassis+Motherboard	Memotec	AC002010	1	072298778
200	Multiplexor CX950e Chassis+Motherboard	Memotec	AC002010	1	082389428
201	Modem Linkway 2100	Viasat	2100	1	B6885
202	MODEM Card	Viasat		1	31910
203	Ethernet card	Viasat		1	00A09400599A
204	FR TIA	Viasat		1	CL000225701
205	Fax CANON H12130			1	DRT0671
206	Analog CONAIRPHONE telephone			1	-
207	SSPA 40 W	Paradise Datacom	HPAC2040ACBX001	1	2360
208	SSPA 40 W	Paradise Datacom	HPAC2040ACBX001	1	2359
209	Power supply for Modem Linkway		CL0003192-01	1	RU140400198
210	Power supply for Modem Linkway		CL0003192-01	1	RU140400196
211	Power supply for Modem Linkway		CL0003192-01	1	RU140400197
212	Power supply for Modem Linkway		CL0003192-01	1	RU140400193
213	Power supply for Modem Linkway		CL0003192-01	1	RU140400194
214	Power supply for Modem Linkway		CL0003192-01	1	RU140400195
215	Power supply for Modem Linkway		AM-120U-S4-916	1	RU082503487

LIST OF REDDIG SPARE PARTS / LISTA DE REPUESTOS REDDIG I					
	Description	Provider	Model	Quantity	Series #
216	Power supply for Modem Linkway		AM-120U-S4-916	1	RU082503484
217	Power supply for Modem Linkway		AM-120U-S4-916	1	RU134100215
218	Power supply for Modem Linkway		AM-120U-S4-916	1	RU134100212
219	Power supply for Modem Linkway		AM-120U-S4-916	1	RU134100213
220	Cable Roll ASSy 3 x 2.5 50 m			1	-
221	Cable Roll Multipar 50 m			1	-
222	Cable Roll Multipar 50 m			1	-
223	LNB Banda C	NJS	NJS8477EN	1	00870
224	Cable Patch Cord Ethernet 3m			9	-
225	Cable DB9-DB25 3m			2	-
226	Coaxial Cable Roll 50R 50m			1	-
227	SSPA 40 W	Paradise Datacom	HPAC2040ACBX001	1	2346
228	GPS Datum	Datum	ET6000-RB1	1	5823
229	Cisco Console Cable	Cisco		1	-
230	Management Cable SSPA Paradise	Paradise Datacom		1	-
231	Type N 50R connectors unassembled			4	-
232	Antistatic Wristband			1	-
233	Packs of empty plates for Memotec equipment			1	-
234	RF Combiner-Spliter	Global Proffesional		1	-
235	RS232-RS485 Converter	Lindy		1	78680221KGZ0071
236	SUN SOLARIS Installation package	SUN Microsystems		2	-
237	Multiport serial card	COMTROL		1	5850-075665
238	DB25 Multiport Cable for Multi I/O Memotec	Memotec		2	-
239	Cable Patch Cord Ethernet RJ45 5m			2	-
240	Cable for Memotec console			1	-
241	Adapter DB9-DB25			2	-
242	Adapter DB25-M34			1	-
243	Power cable			1	-
244	Coaxial RF Cable N-SMA Male			3	-

State	Date	REDDIG I equipment located in the node	REDDIG I spare parts	Comments
Argentina	23 April 2015 ANAC 323 (Official Letter)	Keep equipment for reusing	Keep equipment for reusing	Nor selling neither other options
Bolivia	7 July 2015	Keep equipment for trials by personnel		
Brazil	19 May 2015 120/CERNAI/2015 (Official Letter)	Keep RF parts and FRAD equipment cards. Agrees to donate them to States of region that be interested	Keep RF parts and FRAD equipment cards. Agrees to donate them to States of region that be interested	Reported to RCC/19 Meeting
Chile	5 May 2015 04/4/278/27 (Official Letter)	Properly adjusted for REDDIG II, can be used as spare parts stock, if possible	Properly adjusted for REDDIG II, can be used as spare parts stock, if possible	
Ecuador	13 April 2015 DGAC-YA-2015-0954-0 (Official Letter)	It met it useful life and will be discharged	Selling of stock of spare parts and money collected be deposited to RLA/03/901 founds	
Paraguay	E-mail reply from focal point	Feasibility of sending equipment from Paraguay to ICAO SAM Office for sale, auction or exchange spare parts of REDDIG II, otherwise will be discharged		As institution, cannot proceed with equipment selling
Peru	29 May 2015 E-mail reply from focal point		To assign the following cards from MEMOTEC equipment 04 Universal I/O -04 Multi I/O 01 V35H -04 Ethernet	A local network with MEMOTEC series CX equipment is installed which is discontinued by the manufacturer

State	Date	REDDIG I equipment located in the node	REDDIG I spare parts	Comments
Suriname	28 de mayo de 2015 E-mail reply from focal point	Will be stored since there is no other possible use		
Trinidad &Tobago	29 May 2915 CAA/122/15/EMANS (Official Letter)	Supports selling of node equipment	Supports selling of spare parts	In case of selling, suggests that all cost involved be assumed by the purchaser (from package until collect).
Uruguay	17 July 2015 Letter from the focal point	Change for REDDIG II equipment and cards	Change for REDDIG II equipment and cards	Difficulty for selling State's goods
Venezuela		Will donate all equipment to the IUAC Instituto Universitario de aviación Civil del INAC		Reported in the RCC/19 meeting

Trial Preliminary Report
DGAC Chile/REDDIG access to SITA

1. Trial objective

The interconnection solution shall enable the flow of data link messages between ground system (DGAC Chile/FANS server) and equipped aircraft during the period of use, by using REDDIG as the IP ground network to connect Chilean server and SITA ACARS processor.

2. Connectivity requirements

The network connectivity solution to support this exercise privileged the following requirements:

- The operational FANS (ADS-C and CPDLC) services provided by DGAC shall not be affected during the trial period;
- SITA, REDDIG and DECEA networks safety and performance are kept without any impact;
- SITA processor located in Rio which supports all data link services provided to DECEA and airlines in Brazil shall not be impacted.

3. Network development plan

This network development plan was separated in 3 parts: the connection of DGAC to REDDIG network in Chile (Chile side), the connection of REDDIG to GIG Processor network in Brazil (Brazil side) and the feasibility of the operation through REDDIG network.

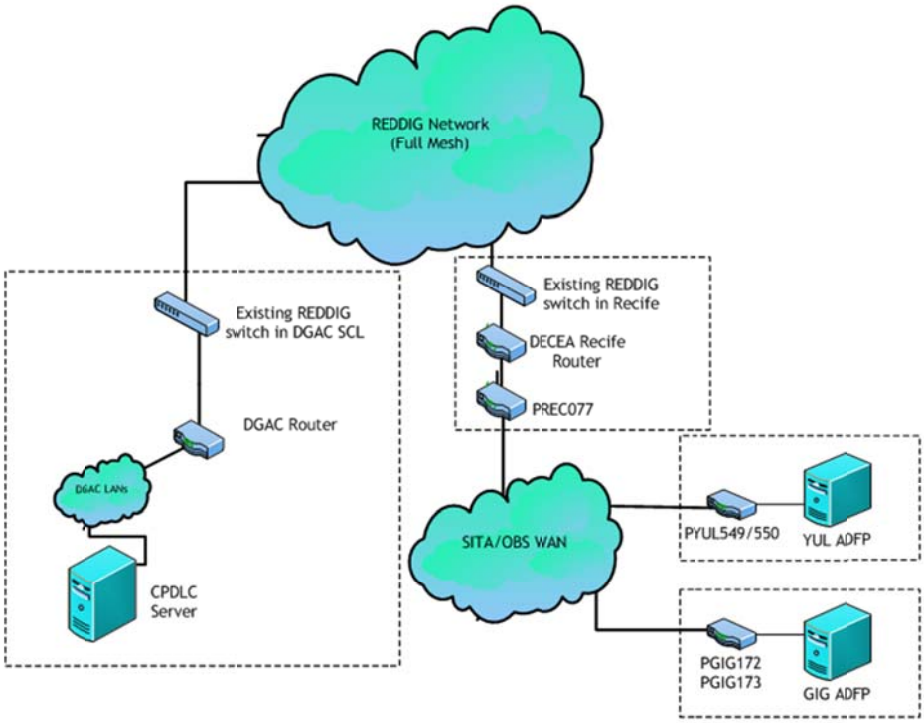

Figure 1: Connection proposal between REDDIG, DGAC and GIG/YUL Processor

4. Connection between DGAC and REDDIG

DGAC and REDDIG's equipment are in the same Equipment Room (Figures 2, 3 and 4) and only for the trial phase, DGAC is responsible for the physical connection between REDDIG switch and DGAC server.

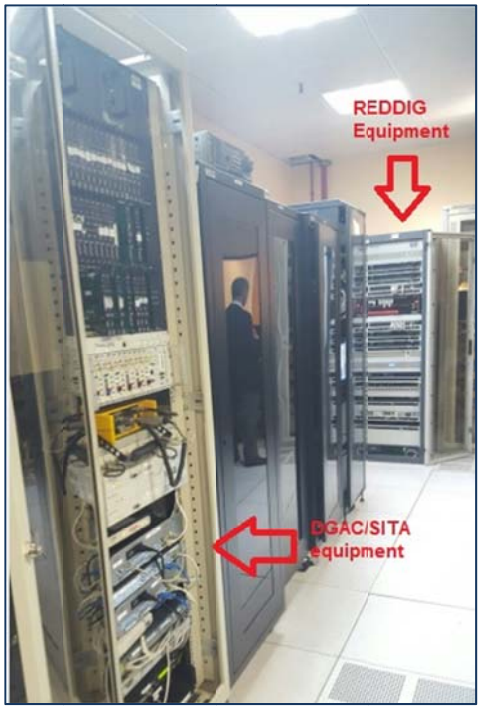

Figure 2: DGAC and REDDIG in ACCO Equipment Room in Santiago.

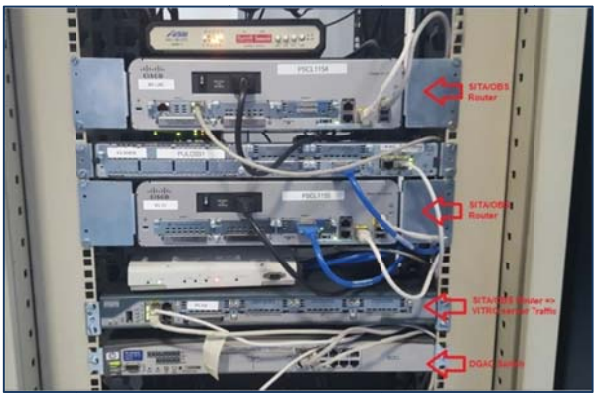

Figure 3: SITA and DGAC Equipment.

Figure 4: Node Santiago REDDIG Equipment.

DGAC made available a new router equipment to connect to VITRO server through DGAC switch to REDDIG switch during the trial period. This configuration allowed the proper configuration and no impact in other services.

5. Connection between REDDIG and SITA

The physical connection between REDDIG network and SITA network was accomplished by the installation of a new DECEA router between REDDIG router and PREC077/SITA router in Recife-Brazil.

6. Network Configuration

A VLAN Test 102 was already configured by REDDIG in Chile and Recife, and no modification was necessary.

DGAC and SITA had to make IP translations to pass the traffic through REDDIG according to Figure 5.

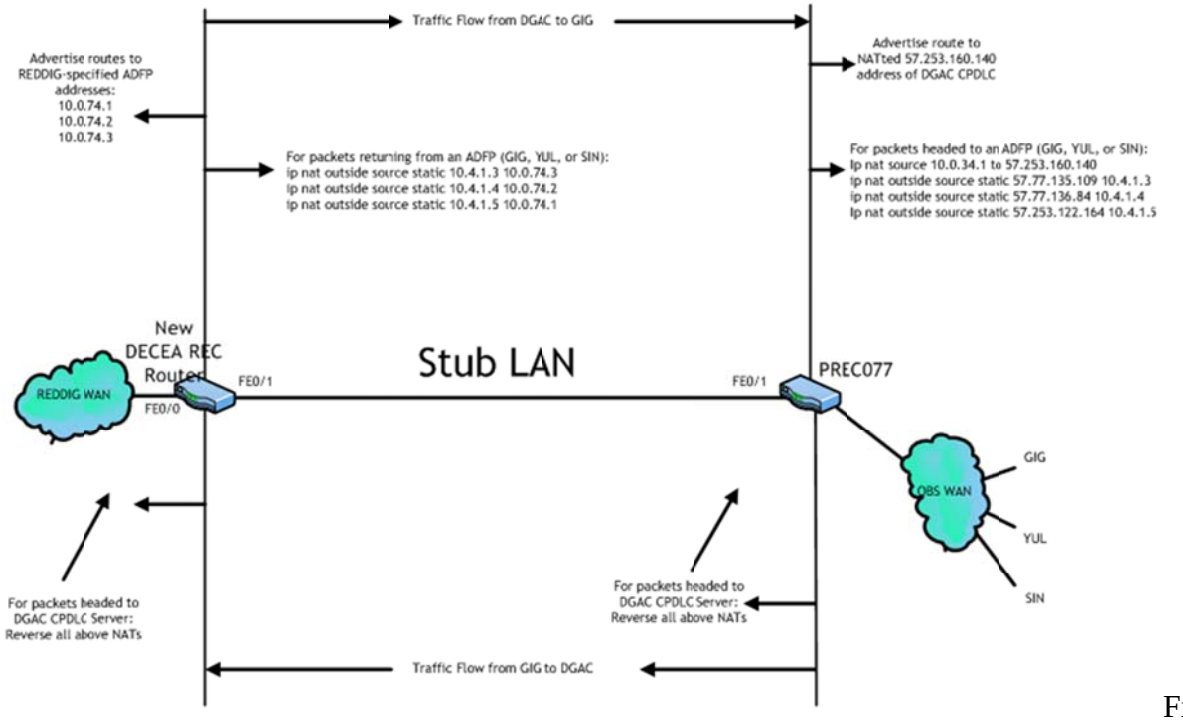

Figure 5: NAT and routings.

DGAC had to configure the IP 10.0.34.200/24 in the router port (Figure 6).

DGAC router needed to accept traffic from primary and secondary links all the time and establish the connection to GIG processor through REDDIG as primary and YUL/SIN processor through OBS as secondary.

This configuration allowed contingence between processors (GIG and YUL) and transmission (REDDIG and OBS), but DGAC had to check the following configuration in VITRO Server:

- Add the REDDIG connections to GIG and YUL on top of the existing connections with SIN & YUL ADFP.

- Use ROUTE commands at the OS level to route the packets on separate gateways depending on the destination address.

In summary, the trial consists on having traffic from VITRO Server to SITA Rio processor through REDDIG (SCLCAYA + REDDIG + GIG) and to YUL processor through OBS transmission (SCLCAYA + OBS + YUL), as exhibited on Figures 6 and 7.

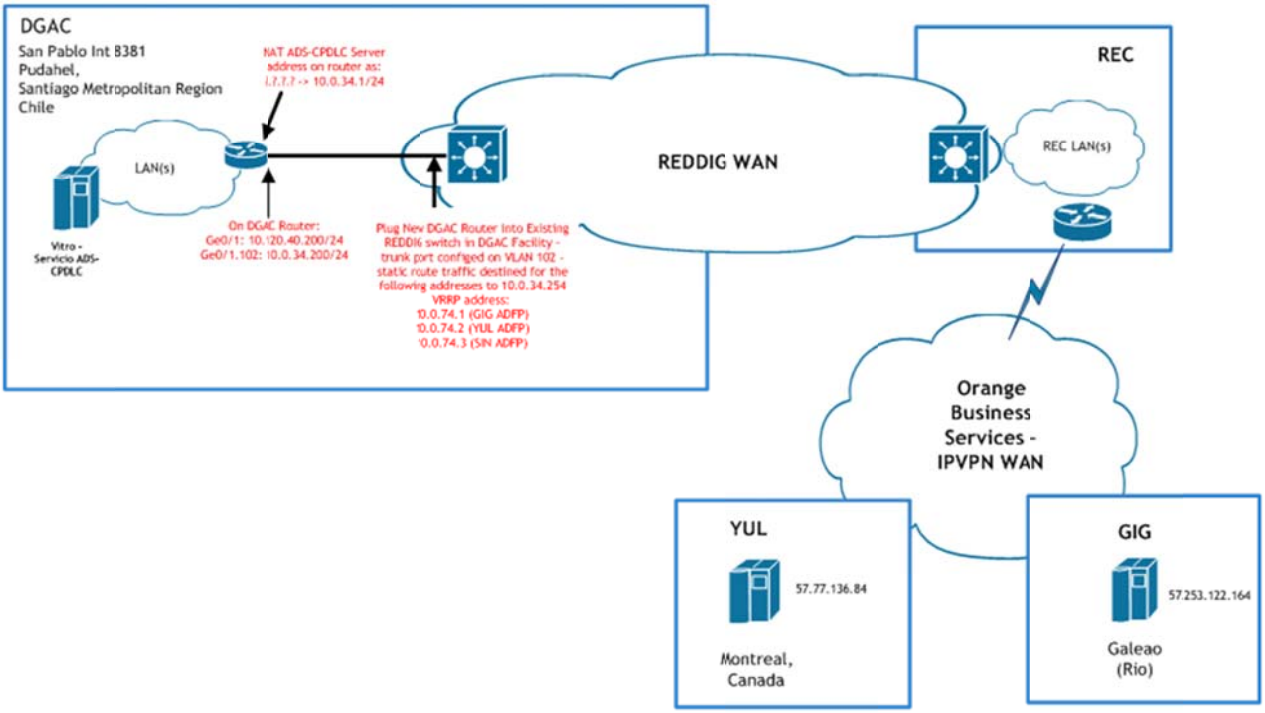

Figure 6: Configuration proposed in ACCO-DGAC.

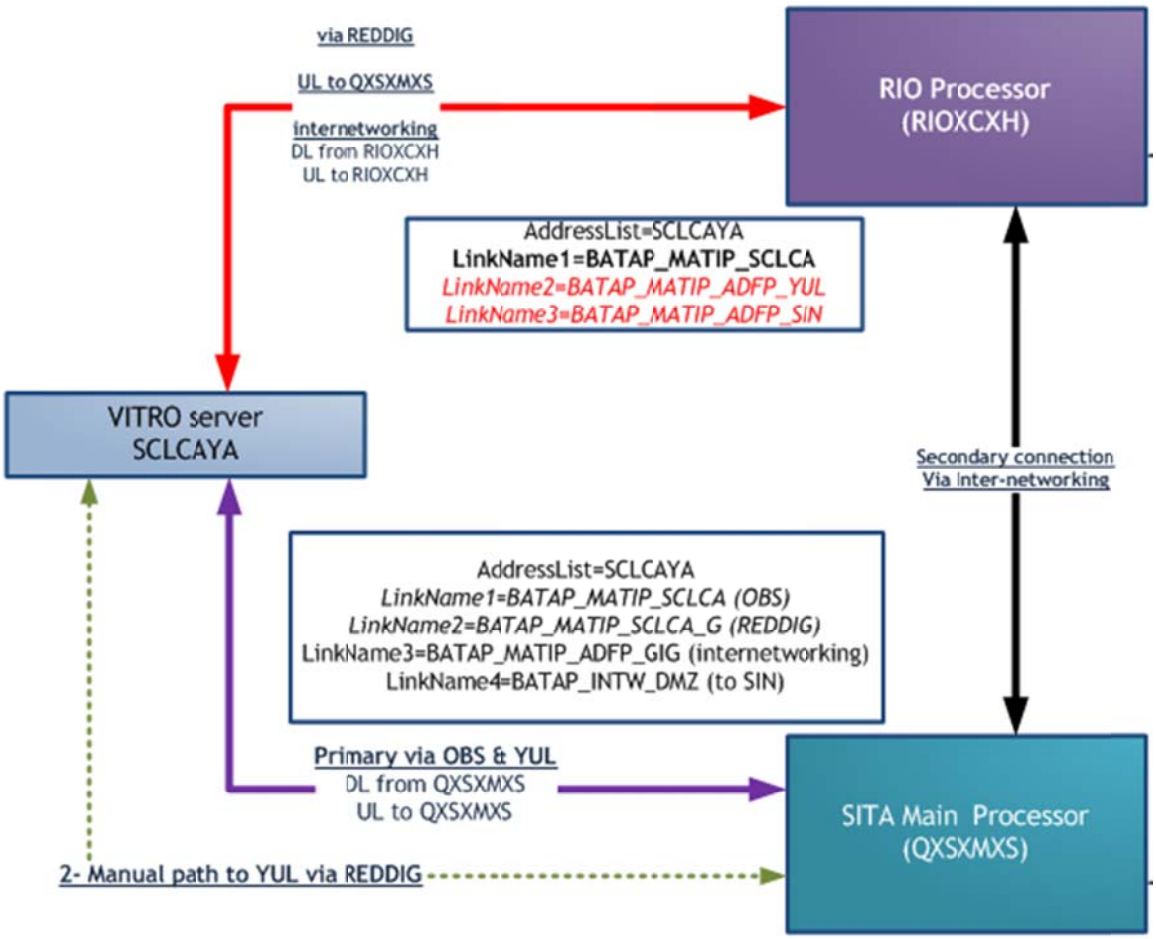

Figure 7: Configuration between VITRO Server, GIG and YUL Processors.

7. DGAC FANS Server

Currently DGAC has two FANS servers: VITRO and TOPSKY. VITRO is used for oceanic traffic and is current connected to SITA YUL/SIN through OBS link. TOPSKY is being used for continental traffic in ACCS, but this system still need software configuration updates in order to be used for data link services.

DGAC had to configure SCLCAYA (VITRO) to accept downlink from RIOXCXH during the test period to establish the communication with GIG ADFP.

8. Trial Setup and schedule

The trial initiated on October 8th 2015 after having all the physical connections in place. The router and server configurations were performed together during the tests according the schedule below:

DAY 1: Thursday, 8th October

12:00 – 15:00 GMT **Installation and configuration of the equipment in Chile**

1.a. Cables and new router installation between REDDIG and DGAC in Chile

1.b. Configuration of the network in DGAC, Recife and SITA.

1.c. Telnet test to check the connections

DAY 2: Tuesday, 20th October

11:00 – 13:00 GMT **Installation and configuration of the equipment in Recife**

2.a. Cables and new router installation between REDDIG and PREC in Recife

2.b. Configuration of the network in DGAC, Recife and SITA.

2.c. Telnet test to check the connections

14.00 – 16.00 GMT **Migration of the traffic**

2.d. Configuration of the CPDLC server to use YUL Processor through REDDIG

2.e. Configuration of the CPDLC server to use GIG Processor through REDDIG

2.f. Observe the traffic through REDDIG to GIG

DAY 3: Wednesday, 21th October

11:00 – 13:00 GMT **Definition of trial duration and back up connection of the network**

3.1 DGAC informed the duration for the trial

3.2 Add the configuration on the CPDLC traffic to YUL processor through OBS

3.3 Observe the traffic

DAY 4: Thursday, 23th October

17:00 – 18:00 GMT **Complete the backup tests between REDDIG and OBS transmissions**

4.1 Configuration at SITA processor to have backup

4.2 Test the backup solution

9. Results and Measures during the trial

9.1 Data link message traffic volume

During the trial, SITA used its network monitoring tools in order to verify the volume of data link traffic going through REDDIG and OBS links.

The summarized table below shows the BATAP message traffic volume (both inbound/outbound directions and data/IMA messages) on links MATIP_SCLCA in YUL ADFP and MATIP_SCLCA in GIG ADFP.

The results are presented for the Nov, Dec, Jan and Feb months:

BATAP Message Traffic Volume		
Month	**YUL Processor**	**GIG Processor**
November-15	*	46024
December-15	*	79352
January-15	9718*	56831

February-15	57690	18738**

*Period from Nov 15, 2015 to Jan 24, 2016
** Data until Nov 23th

9.2 Logs and Network information

During the trial period, the following significant events were reported:

Jan 14th and 15th, 2016: a message codification issue was found by DGAC and it was fixed by SITA

Jan 15th, 2016: SITA could observe some quick disconnections as Figure 8, but they don't affect the message exchange when less than 1 second. REDDIG informed no issues in their Network on Nov 18th

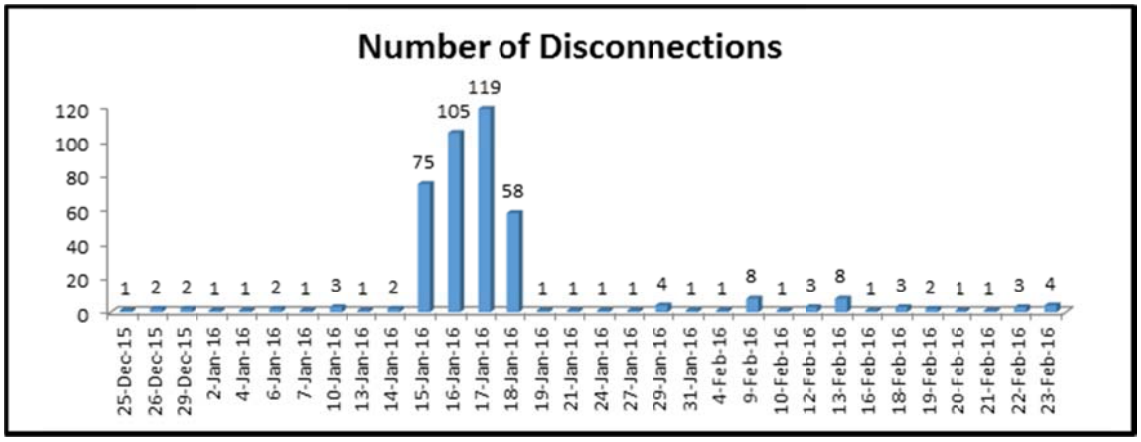

Figure 8: Number of Disconnections

Feb 9th, 2016: upon SITA request, DGAC has fixed the BATAP type of message. This change was necessary to avoid duplicated messages to both SITA processors YUL and GIG.

10. Next steps for the trial

SITA and DGAC agreed on following next steps in order to consolidate the trial results:

- To continue with the tests until end of March in order to further evaluate the disconnections and the change recently made in the type of BATAP messages;
- DGAC will forward to SITA their logs, events and traffic since Nov 2015 (trial start date);
- SITA will advised DGAC the time and configuration needed to have the OBS setup back.

11. Proposed Network Design for operational use of ANSP REDDIG access to SITA

The DGAC/REDDIG/SITA trial is being performed using a network design that considered the aspects described in the items 2 to 6 of this present report.

Based on lessons learned so far and taking into consideration the main requirement of no impact to ANSP, REDDIG and DECEA networks, SITA has developed a proposed network configuration design for operational use by any ANSP willing to connect to SITA using their REDDIG node access, and therefore ensuring to be using a dedicated ATC network under cost effective manner.

Main network requirements for the operational use:

- ANSP ground server should be connected via REDDIG (primary) to GIG (primary) and YUL (secondary) to make ATC message exchange;
- DECEA's nodes with REDDIG in Recife and Brasília (2 switches with cable and VSAT access each) could be used to connect REDDIG to SITA's processors;
- Equipment and site contingence to provide the communication to SITA's processors as figures 9, 10 and 11.

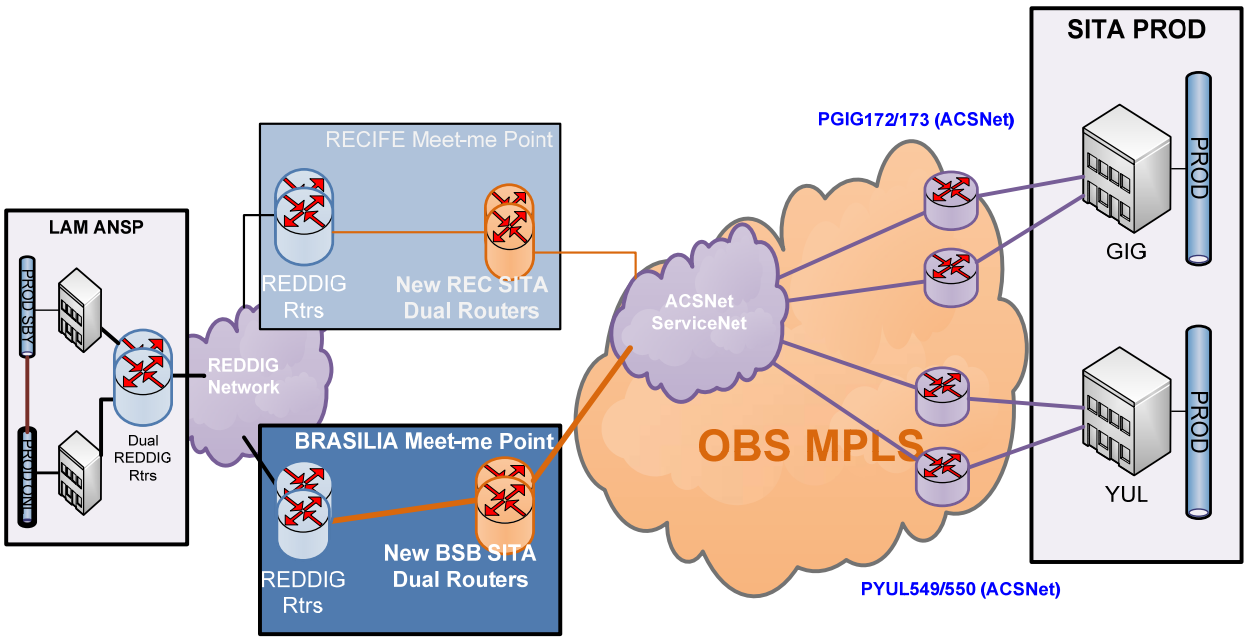

Figure 9: Network diagram for operational use

Proposed Recife Gateway between REDDIG Network and ACSNet Community on OBS Network

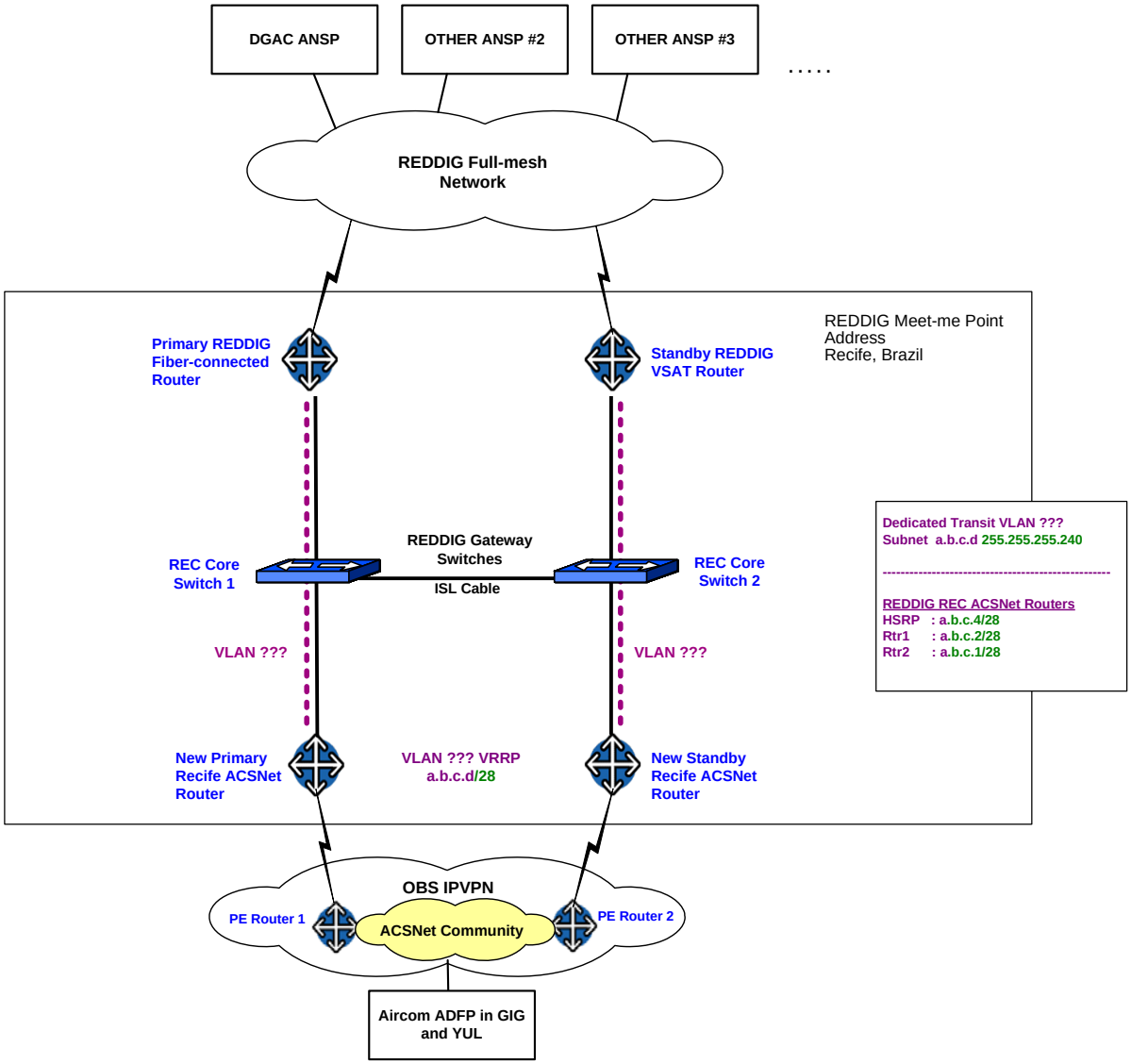

Figure 10: Proposed network solution – Recife site.

Proposed Brasilia Gateway between REDDIG Network and ACSNet Community on OBS Network

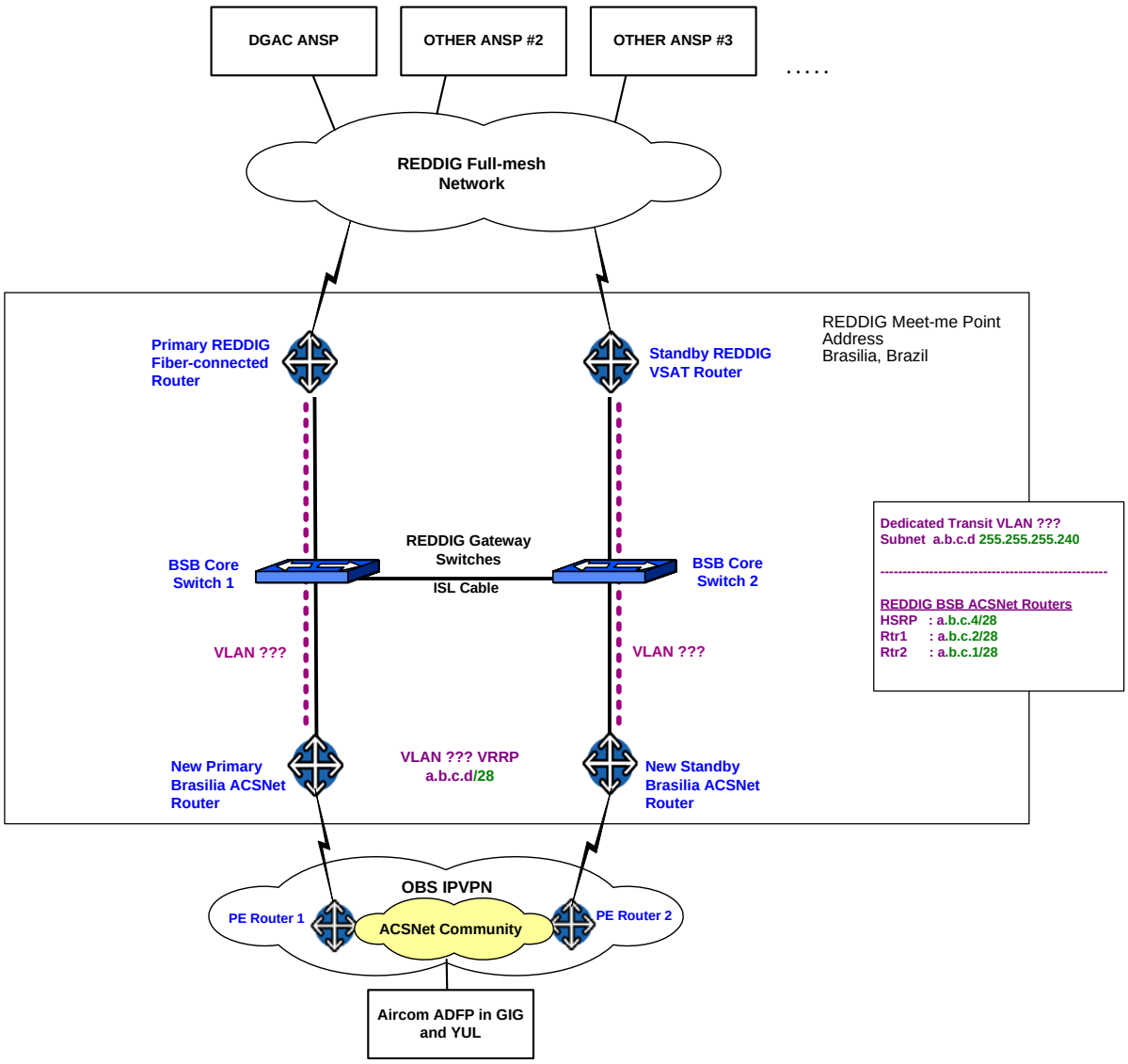

Figure 11: Proposed network solution – Brasília site.

Agenda Item 4: **Work plan for year 2016**

4.1 The Meeting considered the following activities scheduled for 2016:

a) REDDIG II training programme; and
b) REDDIG II operation and analysis to the implementation of new services.

REDDIG II training programme

4.2 The Meeting deemed of priority that the following courses take place in 2016:

a) Basic course on CISCO routers and IP switch, Part II
b) REDDIG II operation and management course

Basic course on CISCO routers and IP switch, Part II

4.3 The Meeting considered that to complete the basic course on CISCO routers and IP switch, on 4 – 8 April 2016 will be carried out the second course "*Interconnecting Cisco Devices Part 2 (ICND2)"*. The cost of the course ICDN2 for a maximum of 16 participants is of USD 7,200.00 (seven thousand two hundred US dollars) approximately. In addition to this cost it should be considered simultaneous interpretation services, the cost of a mission (tickets and travel expenses of the administrator of the REDDIG) from Manaus to Lima and the cost of fellowships by node.

4.4 Note was taken that, upon completing this ICDN2 course, the participants will be able to:

a) Operate a medium-sized LAN with multiple switches, supporting VLANs, trunking and spanning three
b) Troubleshoot IP connectivity
c) Configure and troubleshoot EIGRP in an IPv4 environment, and configure EIGRP for IPv6
d) Configure and troubleshoot OSPF in an IPv4 environment, and configure OSPF for IPv6
e) Define characteristics, functions and components of a WAN
f) Describe SNMP, syslog and NetFlow, and manage Cisco device configurations, Cisco IOS images and licenses.

Appendix A summarizes the content of the ICND2 course.

REDDIG II operation and management course

4.5 The Meeting noted that a course on operation and maintenance of the REDDIG II has been planned for the technical staff of the REDDIG II Member States who have not attended the courses of operation and maintenance of REDDIG II carried out in 2015.

4.6 The Meeting considered that this course will be delivered in Spanish from 5 to 9 September 2016 in a member State from the SAM Region and in English from 26 to 30 September 2016 in Georgetown, Guyana. The content of the course is presented as **Appendix B**. Costs of both courses should include expenses pertaining to a mission (ticket and travel expenses for the REDDIG Administrator) from Manaus to the site of the course and a fellowship per node.

Other REDDIG II course and meetings

4.7 The Meeting deemed convenient that the Secretariat investigate on the offering of a course on the operation, maintenance and programming of the SKYWAN modem satellites, as well as on the costs for a group of 20 persons or for a small group of two or three persons that would later train a greater number of people in charge of REDDIG II maintenance. The Secretariat would inform on the feasibility of carrying out this course at the end of May 2016.

4.8 In addition, the Meeting took under consideration to hold the Fifth REDDIG Technical Operational Meeting (RTO/5) in Manaus, Brazil, during the week of 18 July 2016.

REDDIG II operations and analysis of the implementation of new services

REDDIG II operations

Activities to resolve REDDIG II pending matters

4.9 The Meeting took note that the activities to solve the freezing problem were programmed to be completed in mid-2016. In case the problem is solved, the final acceptance test of the REDDIG II (FSAT) will take place.

4.10 The Meeting was informed that, to complete the final acceptance tests of the REDDIG II (FSAT) the supplier of the REDDIG II (INEO) according to the REDDIG II contract (2250120) shall submit to the management of the project a test protocol and the implementation date for the final acceptance tests. The preliminary test FSAT Protocol was presented by the Consortium INEO LEVEL 3 as part of the design documentation of the REDDIG II (SDD) and is presented as **Appendix C** to this part of the Report. The Meeting considered that the document should be updated by INEO in view that the FSAT will be made only for the satellite network since the FSAT for the ground network was already made.

LEVEL 3Ground network performance

4.11 The Meeting noted that the fifty-four months period of direct service between ICAO on behalf of REDDIG member States, and LEVEL 3 Peru, started on 1 January 2016. Contract renewals will be annual and ICAO is analyzing the manner how it will cancel the services of LEVEL 3 if same were to be monthly, quarterly or every six months.

4.12 The Meeting deemed it convenient that REDDIG member States review the Service Level Agreement (SLA) included as Appendix XI to in the REDDIG II contract, and that they submit their comments to the ICAO SAM Regional Office by 29 April 2016. Copy of the SLA is under **Appendix D** to this Agenda Item. In this sense, the Meeting formulated the following conclusion:

Conclusion RCC/19-4 Review to the LEVEL 3 SLA

That, REDDIG member States examine the contents of the Service Level Agreement (SLA) established between the ground network services provider (LEVEL 3) and ICAO, shown in Appendix D to this Agenda Item and submit their comments to the ICAO SAM Regional Office no later than 29 April 2016.

4.13 The Meeting took note that Level 3 will present a report on the service availability in the ground network. The December report of Level 3 is presented as **Appendix E** showing the availability of December 2015.

4.14 The Meeting was informed that the access to the Level 3 website is through: http://latam.ucommand.com/nm/InfoViewApp/logon.jsp / user name: *icao* / password: *level 3.*

Relocation of the Bogota node

4.15 The Meeting took note of Colombia's requirement to relocate the current Bogota node to a new location where the equipment of the new Centro de Gestión Aeronáutico de Colombia (CGAC) will be installed, inside the internal areas of the International Airport of Bogota.

4.16 In this sense, the Meeting was informed of the request that the REDDIG II project management made to INEO on behalf of Colombia in order that they present a quotation for the node's transfer. Within the requirements, consideration was given that INEO analyse the use of an antenna (Andrew, Model C37T, 3.7 m in diameter) belonging to the Colombian CAA, with the aim of expediting the transfer works and reducing to a minimum the interruptions in the node's services.

4.17 In response, INEO presented an economic proposal for the relocation of Bogota node with two options, one including the installation of a new antenna and the other considering the installation of the current REDDIG antenna of Bogota node. The use of the antenna Andrew was disregarded by INEO due to the risks involved, but informed that if Colombia assumes the responsibility of installing such antenna, INEO prior verification of its operation would complete the transfer task.

4.18 The Meeting considered that the costs presented by INEO were extremely high, and in this regard, considered that Colombia, the REDDIG Administration and INEO conduct a teleconference to examine each of the items presented and verify if all were really necessary, with the aim of obtaining a better economical proposal.

REDDIG II new services

4.19 The Meeting took note that the implementation of new AMHS circuits is foreseen for 2016. **Appendix F** presents a chart with the circuits o be implemented and the estimated date. The Meeting was informed that the AMHS circuit between Brazil and Peru began operating in early 2016. Colombia informed that due to the relocation of the new control centre, the AMHS implementation could be delayed.

Other activities

4.20 Argentina informed the Meeting that, due to the building of a new control centre at Ezeiza, the installation of a new REDDIG II node would be required and that the current node in Ezeiza would be relocated to the airport in Cordoba. In this sense, the Secretariat was requested that INEO provide with an economical proposal. The installation of the new node and the transfer of the current one to Cordoba would be carried out in 2017.

Interconnecting Cisco Network Devices Part 2 (ICND2)

Quién debería asistir

ICND2 is designed for those who have a firm background in data networking, have some hands-on experience with Cisco routers and switches, and are looking to increase their knowledge of installation, maintaining, and troubleshooting medium-sized switched and routed networks or for those who are looking to achieve the first level of Cisco certification, the CCNA.

We strongly recommend that other students start with ICND1.

Prerrequisitos

Before taking Interconnecting Cisco Network Devices Part 2 (ICND2), students should take:

- Interconnecting Cisco Network Devices Part 1 (ICND1)

Objetivos del curso

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

- Operate a medium-sized LAN with multiple switches, supporting VLANs, trunking, and spanning tree
- Troubleshoot IP connectivity
- Configure and troubleshoot EIGRP in an IPv4 environment, and configure EIGRP for IPv6
- Configure and troubleshoot OSPF in an IPv4 environment, and configure OSPF for IPv6
- Define characteristics, functions, and components of a WAN
- Describe SNMP, syslog, and NetFlow, and manage Cisco device configurations, Cisco IOS images, and licenses

Esquema Detallado del Curso

Module 1: Implementing Scalable Medium-Sized Networks

- Lesson 1: Troubleshooting VLAN Connectivity
- Lab 1-1: Troubleshooting VLANs and Trunks
- Lesson 2: Building Redundant Switched Topologies
- Lab 1-2: Optimizing STP
- Lesson 3: Improving Redundant Switched Topologies with EtherChannel
- Lab 1-3: Configuring EtherChannel
- Lesson 4: Understanding Layer 3 Redundancy
- Module 2: Troubleshooting Basic Connectivity
- Lesson 1: Troubleshooting IPv4 Network Connectivity
- Lab 2-1: Troubleshooting IP Connectivity
- Lesson 2: Troubleshooting IPv6 Network Connectivity

Module 3: Implementing an EIGRP-Based Solution

- Lesson 1: Implementing EIGRP
- Lab 3-1: Implementing EIGRP
- Lesson 2: Troubleshooting EIGRP
- Lab 3-2: Troubleshooting EIGRP
- Lesson 3: Implementing EIGRP for IPv6
- Lab 3-3: Implementing EIGRP for IPv6
- Lesson 4: Module Summary
- Lesson 5: Module Self-Check

Module 4: Implementing a Scalable, Multi-area Network, OSPF Based Solution

- Lesson 1: OSPF Overview
- Lesson 2: Multiarea OSPF IPv4 Implementation
- Lab 4-1: Configuring Multiarea OSPF
- Lesson 3: Troubleshooting Multiarea OSPF
- Lab 4-2: Troubleshooting Multiarea OSPF
- Lesson 4: Examining OSPFv3
- Lab 4-3: Configuring OSPF for IPv6
- Lesson 5: Module Summary
- Lesson 6: Module Self-Check

Module 5: Wide-Area Networks

- Lesson 1: Understanding WAN Technologies
- Lesson 2: Configuring Serial Encapsulation
- Lab 5-1: Configuring and Troubleshooting a Serial Connection
- Lesson 3: Establishing a WAN Connection Using Frame Relay
- Lab 5-2: Establishing a Frame Relay WAN
- Lesson 4: Introducing VPN Solutions
- Lesson 5: Configuring GRE Tunnels
- Lab 5-3: Establishing a GRE Tunnel
- Lesson 6: Module Summary
- Lesson 7: Module Self-Check

Interconnecting Cisco Network Devices Part 2 (ICND2)

Module 6: Network Device Management

- Lesson 1: Configuring Network Devices to Support Network Management Protocols
- Lab 6-1: SNMP and Syslog Basic Configuration
- Lab 6-2: Analyzing NetFlow Data
- Lesson 2: Managing Cisco Devices
- Lesson 3: Licensing
- Lab 6-3: Managing Cisco Devices and Licensing

Module S: ICND2 Superlab

- Lab S-2: ICND2 Superlab

REDDIG II Operation and management Course

Contents

Final Site Acceptance Test

Reference :	**ICAO REQUEST FOR TENDER : ST-22501200**
File :	**FSAT NT 2022-2141166R rev B.doc**
Project :	**NEW TRANSPORTATION NETWORK OF THE REGIONAL AERONAUTICAL TELECOMMUNICATION NETWORK (REDDIG II)**
Portion:	**Final Site Acceptance Test**

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Date	**15/10/2013**		
Drafted by	**C.CHEVALLIER**		
Checked by			
Approved by	**JO. KLOTZ**		

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1 INTRODUCTION

This document presents the procedure for the Final Site Acceptance Test of the REDDIG II network. The test will be centralized from one of the central sites (Manaus or Ezeiza). If some tests are to be achieved on different sites, they will be achieved by local staff, under remote assistance from Manaus or Ezeiza.

The following tests must only be achieved if they resulted faulty during the PSAT / NAT.

Tests will be processed as follows:

- Check of outdoor equipment capabilities
- Check of communications links between the sites
- Check of indoor equipment capabilities
- Check of the monitoring system

2 PSAT TESTS

The following tests must only be achieved if they resulted faulty during the PSAT / NAT.

2.1 OUTDOOR UNITS TESTS

2.1.1 Tx Switch

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

Check that the LEDs are green.
Check that there are no alarms on the site with the IBUC webpage. Disconnect one RF cable from the online IBUC and check that the standby transmit chain becomes active.

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

Test	Results (Ok/Nok)
IBUC A to B	
IBUC B to A	
Comments:	

Figure 1 - TX switch test

2.1.2 Rx Switch

This test will validate the redundancy of the low noise amplifiers (LNB).

Check that the LEDs are green.
Check that there are no alarms on the LNB. Disconnect the cable from the online LNB and check that the standby chain becomes active.

Do the test for the other LNB.

Test	Results (Ok/Nok)
LNB A to B	
LNB B to A	
Comments:	

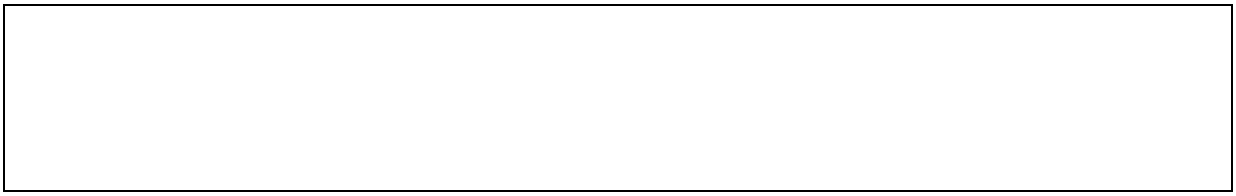


Figure 2 - RX switch test

2.2 COMMUNICATION TESTS

THE TESTS TO BE ACHIEVED IN THIS SECTION ARE THE ONE THAT DID NOT PASS THE PSAT EXAM.

THERE IS NO NEED TO MAKE ONCE AGAIN THE TESTS THAT WHERE ALREADY SUCCESSFUL DURING PSAT.

2.2.1 RADAR and ASterix

There are two types of RADAR:

- Serial
- IP based.

2.2.1.1 Serial RADAR

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

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

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

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

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

Figure 3- Serial RADAR tests

2.2.2 ATS/DS circuits

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

The test will consist of using the associated end-user phone, hang-it up and make a conversation to the other end of the line.

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

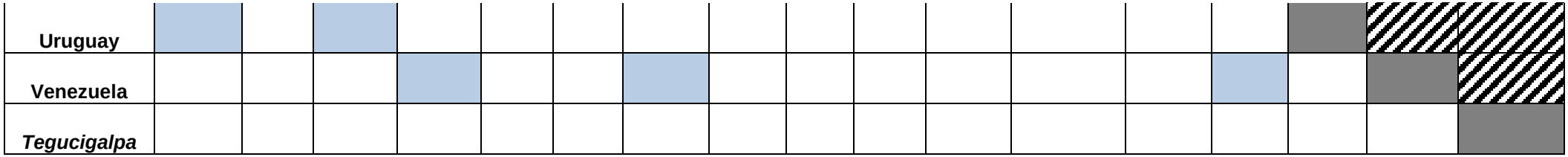


Figure 4 – ATS/DS cross matrix – chain A

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

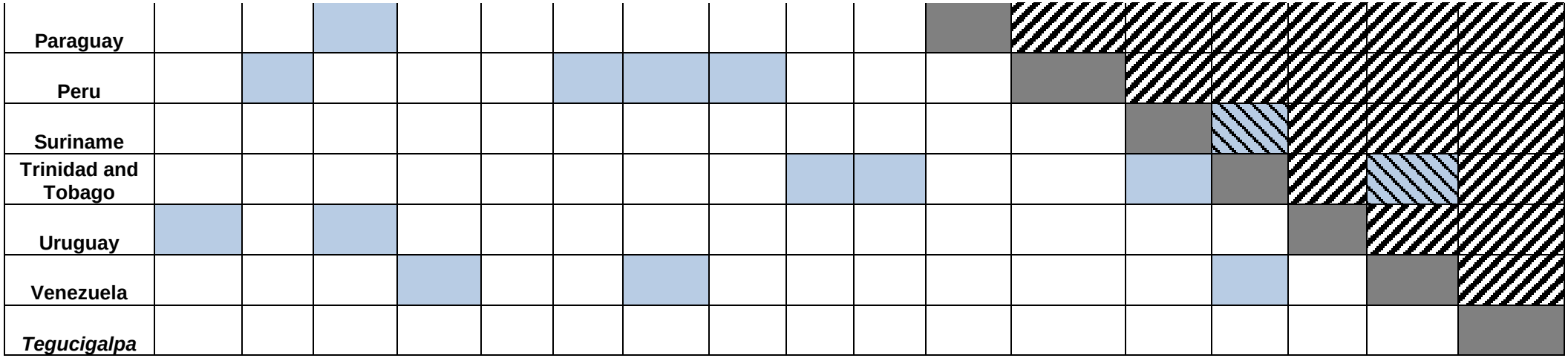


Figure 5 – ATS/DS cross matrix – chain B

2.2.3 ATS switeched circuits

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

The test will consist of using the associated end-user phone, hang-it up, dial any remote dial number and make a conversation to the other end of the line.

The MEVA II interconnection will be tested during this phase.

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

Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 6 - ATS switched cross matrix – chain A

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

Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 7 - ATS switched cross matrix – **chain B**

ATS switched	Local number	Dialled number
Argentina	20140 (5 ports)	20..
Bolivia	25100 (2 ports)	25..
	25153	2553
Brazil (Curitiba)	30140 (4 ports)	30..
Brazil (Manaus)	36140 (2 ports)	36..
	36112	3612
Brazil (Recife)	38140 (5 ports)	38..
Chile	40140 (4 ports)	40..
Colombia	45100 (7 ports)	
Ecuador	50151	5051
	50152	5052
	50153	5053
	50160	5060
French Guiana	92104	9252
	92141	9254
Guyana	90100	90..
	90102	9051
	90141	9053
Paraguay	55142	5551
Peru	60100 (5 ports)	60..
Suriname	94102	9451
	94100	94..
Trinidad and Tobago	-	-
Uruguay	65142	6550
	65102	6551
Venezuela	80141	8060
	80143	8051
	80144	8053
	8010001	*8001*
	8010002	*8002*
	8010003	*8003*
Tegucigalpa		

MEVA	Destination	Local number	Dialled number	Digits forwarded
Venezuela	Aruba	29..	29..	All
	Curaçao	22..	22..	All
	San Juan	18..	22..	All
Colombia	Curaçao	22..	22..	All
	Panama	39..	39..	All
	Kingston	30..	30..	All

MEVA	Destination	OK/KO	Comment
Venezuela	Aruba		
	Curaçao		
	San Juan		
Colombia	Curaçao		
	Panama		
	Kingston		

Figure 8 - MEVAII test - chain A

MEVA	Destination	OK/KO	Comment
Venezuela	Aruba		
	Curaçao		
	San Juan		
Colombia	Curaçao		
	Panama		
	Kingston		

Figure 9 - MEVAII test – chain B

2.2.4 Administrative voice

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

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

Admin	Quantity of ports	Local number	Dialled number
Argentina	2	20201	2001
		20241	20..
Bolivia	3	25201	2501
		25240 (2 ports)	25..
Brazil (Curitiba)	3	30200 (2 ports)	30..
		30201	3001
Brazil (Manaus)	4	36211	3611
		36201	3601
		36202	3602
		3620001	*3603*
Brazil (Recife)	3	38200 (2 ports)	38..
		38241	3801
Chile	2	40200 (2 ports)	40..
Colombia	2	45200 (2 ports)	45..
Ecuador	3	50200 (2 ports)	50..
		50203	5003
French Guiana	2	92201	9201
		92202	9202
Guyana	1	90201	90201
Paraguay	4	55200 (3 ports)	55..
		55201	5501
Peru	3	60200 (3 ports)	60..
Suriname	1	94201	9401
		94240	94..
Trinidad and Tobago	2	91201	9101
		91240	91..
Uruguay	2	65201	6501
		65241	6541
Venezuela	1	80201	8001
Tegucigalpa	1	2101	2101

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

Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 10 - Administrative cross matrix – chain A

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

Uruguay																	
Venezuela																	
Tegucigalpa																	

Figure 11 - Administrative cross matrix – **chain B**

2.2.5 Teleconference

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

Teleconference proposed numbers are:

- 20300 in Ezeiza
- 36300 in Manaus
-

Establish a conference with at least 3 members.

Teleconference	OK/KO	Comment
Sites participating:		
Comments		

Figure 12 - Teleconference - chain A

Teleconference	OK/KO	Comment
Sites participating:		
Comments		

Figure 13 - Teleconference - chain B

2.2.6 AFTN circuits

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

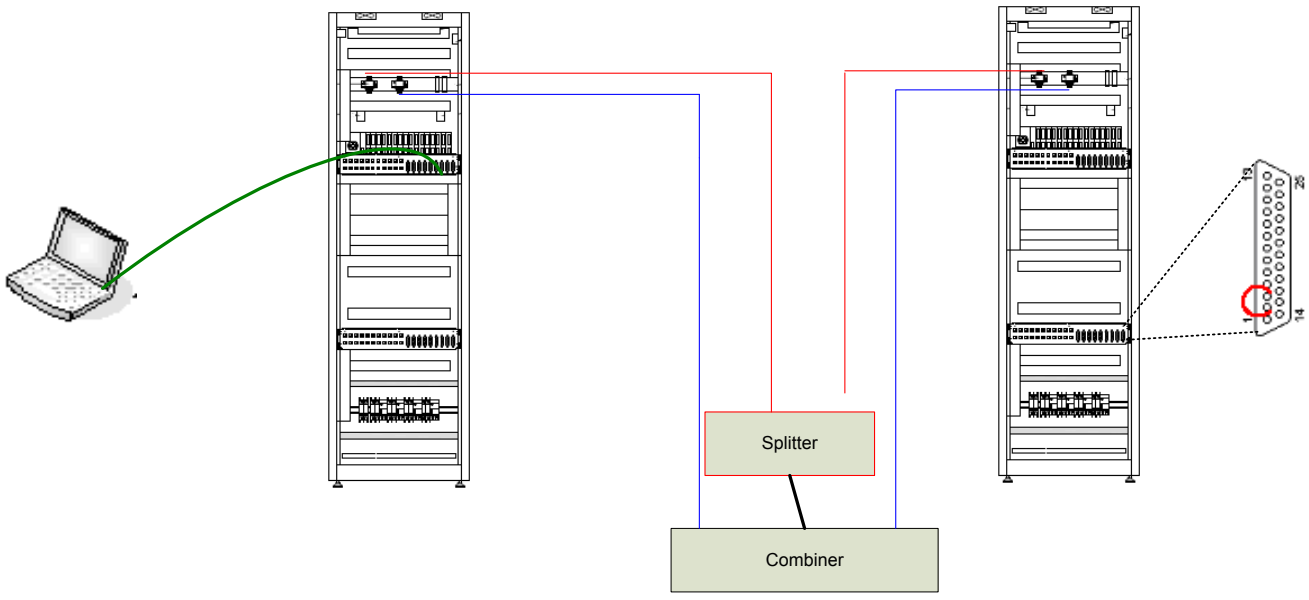


Figure 14 - AFTN test mounting

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

Figure 15 - AFTN interfaces

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

Figure 16 - AFTN tests results – chain A

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

Figure 17 - AFTN tests results – **chain B**

2.2.7 AMHS and AIDC

AIDC is not in service now, and thus cannot be tested.

AMHS service is TCP/IP based. To test it:

- ping any remote equipment in the network according to the following cross matrix.
- Verify that the end user is exchanging information correctly.

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

Figure 18 - AMHS cross matrix

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

Figure 19 - AMHS test cross matrix – chain A

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

Figure 20 - AMHS test cross matrix – **chain B**

2.3 REDUNDANCY TESTS

2.3.1 Master station failure test

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

Figure 21 - Master station failure test table

2.3.2 Equipment failure

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

2.3.2.1 Cisco failure

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

Verify that the gateway is now on the chain B and that the communications are re-established following this procedure

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

Figure 22 - Cisco redundancy test table

Switch on the Cisco A.
Once its reboot is finished, go into normal mode

Verify that the services are functional .

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

Figure 23 - Cisco redundancy test table – going to normal

2.3.2.2 SkyWAN failure

Switch off the active SkywWAN. After life-time timeout of the monitored test, the system commutes into backup mode (chain B becomes active and have the gateway).

Verify that the communications are re-established following this procedure

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

Figure 24 - Skywan redundancy test table

Switch on the equipment and go back to normal. Verify that the services are re-established with those tests:

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

Figure 25 - Skywan redundancy test table – going to normal

2.3.2.3 IP switch failures

Switch off the IP switch of chain A. IP connections to this switch become naturally inactive. Verify that legacy and voice applications are not compromised, and that the system goes to B.

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

Figure 26 - IP switch A failure test

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

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

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

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

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

2.3.2.4 RSS switch failures

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

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

Figure 27 - RSS failure test table

2.4 GROUND BACKBONE TEST

2.4.1 backup test

Switch of both Skywan modems or disconnect their TX and RX cables. The system goes to B as this failure is seen at first sight as a chain A failure.

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

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

Check that the gateway is now the GBB router.
For each service, verify with wireshark that the DSCP fields are correct.

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

Figure 28 - Backup test

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

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

2.4.2 Dedicated links

The dedicated links are AFTN and switched voice.

2.4.2.1 AFTN

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

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

Figure 29 - AFTN - dedicated to GBB cross matrix

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

Figure 30 - AFTN - dedicated to GBB test table

2.4.2.2 Voice

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

ATS switched	Local number	Dialled number
Argentina	2000101	2099
Bolivia	2500101	2599
Brazil (Curitiba)	3000101	3099
Brazil (Manaus)	3600101	3699
Brazil (Recife)	3800101	3899
Chile	4000101	4099
Colombia	4500101	4599
Ecuador	5000101	5099
French Guiana	9200101	9299
Guyana	9000101	9099
Paraguay	5500101	5599
Peru	6000101	6099
Suriname	9400101	9499
Trinidad and Tobago	9100101	9199
Uruguay	6500101	6599
Venezuela	8000101	8099

Figure 31 - Dedicated emergency numbers

A telephone must be manually connected to this interface.

2.5 NETWORK MANAGEMENT STATIONS (NMS) TESTS

2.5.1 NMS Equipment

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

Tests description:

Check the serial number of the following equipment.

Local NMS

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

Failover Server

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

Central NMS

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

Figure 32 - NMS serial number table

2.5.2 IP Address

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

Tests description:

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

Local NMS

Equipment	Test	Results	
		OK	NOK
NMS Server	IP Address: Mask: Gateway:		
Printer	IP Address: Mask: Gateway:		
Comments:			

Failover Server

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

Central Server

Equipment	Test	Results	
		OK	NOK
Central Server	IP Address: Mask: Gateway:		
Database Server 1	IP Address: Mask: Gateway:		
Database Server 2	IP Address: Mask: Gateway:		
Storage NAS	IP Address: Mask: Gateway:		
Comments:			

Figure 33 - NMS IP address

2.5.3 SUBMAP content configuration

The purpose of this test is to check the submap configuration.

Tests description:

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

Local NMS

Device name	Description	IP Address	Results		Alarm test	
			OK	NOK	OK	NOK
#Manaus						
Cisco A1	CISCO					
Cisco A2	CISCO					
Cisco A3	CISCO					
Cisco B1	CISCO					
Cisco B2	CISCO					
Cisco B3	CISCO					
Switch A	SWITCH					
Switch B	SWITCH					
Skywan A	SKYWAN					
Skywan B	SKYWAN					
Ground Backbone	CISCO					
Ibuc A	IBUC					
Ibuc B	IBUC					
VPN	VPN					
LNB	LNB					
Switch AB	SWITCH RSS					
Comments:						

Figure 34 – NMS submap

2.5.4 Active monitoring

Tests description:

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

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

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

Local NMS

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

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

Figure 35 – Local NMS active monitoring

2.5.5 Performance monitor

Tests description:

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

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

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

Local NMS

Interface tested	Results	
	OK	**NOK**
Skywan A		
• TDMA Frame Utilization Chanel 1 (only master)		
• TDMA Frame Utilization Chanel 2 (only master)		
• TDMA Frame Utilization Chanel 3 (only master)		
• TDMA Es/No own		
Skywan B		
• TDMA Es/No own		
IBUC A		
• Input Level		
• Output Level		
• Position of the Ibuc on the waveguide switch		

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

Figure 36 – Local NMS performance monitor

2.5.6 Switching from Chain A to Chain B

Tests description:

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

- Chain A Skywan
  - Ethernet state: disconnection Ethernet cable
  - Wan State: disconnecting wan cable,
  - TDMA Frame Synchronization: disconnecting cable
- Chain A CISCO
  - Ethernet state down: disconnection Ethernet cable
  - Serial port operational status: disconnecting serial cable
  - Digital port operational status: disconnection digital cable
- Chain A IP Switch
  - Ethernet state down: disconnection Ethernet cable

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

Local NMS

Interface tested	Results	
	OK	**NOK**
Skywan A		
• Ethernet state down		
• Wan state down		
• Synchronization state down for 2 minutes		
CISCO A		
• Ethernet state down		
• Serial port state down for 2 minutes		
• Digital state down for 2 minutes		
Chain A IP Switch		
• Ethernet state down		
Comments:		

Figure 37 - Local NMS switching control

2.5.7 User access control

Tests description:
Test the right of users.

2.5.7.1 Ezeiza

Local NMS

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

Test	Results	
	OK	**NOK**
Comments:		

Failover Server

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

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

2.5.7.2 Manaus

Local NMS

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

Test	Results	
	OK	**NOK**
Comments:		

Central Server

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

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

Site Local NMS

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

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

2.5.8 Central server

Tests description:

Test information displayed in Central server (Manaus).

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

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

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

Figure 38 - Central server tests

2.5.9 Failover server

Tests description:

Test information displayed in Failover server (Ezeiza).

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

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

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

Figure 39 - Failover server tests

2.5.10 Test of connection through serial port

Tests description:

Test the connection to equipment native console through serial port.

Local NMS

Test	Results	
	OK	**NOK**
#Local		
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
Comments:		

Central Server

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

Test	Results	
	OK	NOK
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
Comments:		

Failover Server

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

Test	Results	
	OK	NOK
• Cisco A1		
• Cisco A2		
• Cisco A3		
• Cisco B1		
• Cisco B2		
• Cisco B3		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Switch AB		
Comments:		

2.5.11 Database

2.5.11.1 Database redundancy

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

Test	Results	
	OK	NOK
Database redundancy Server 2		
Comments:		

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

Test	Results	
	OK	NOK
Database redundancy Server 1		
Comments:		

Figure 40 – Database redundancy tests

2.5.11.2 Database backup

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

Test	Results	
	OK	NOK
Database backup		
Comments:		

Figure 41 – Database redundancy tests

3 PSAT - LIST OF PARTICIPANTS

ENTERPRISE	NAME	RESPONSABILITY	SIGNATURE
INEO			

4 NETWORK ACCEPTANCE TESTS

Those tests are aimed to validate the network from a global point of view.

4.1 PSAT

Are all the PSAT successful in terms of services, with minor pending issues ?

Site	PSAT signed Y/N	Number of minor pending issues
Argentina		
Bolivia		
Brazil (Curitiba)		
Brazil (Manaus)		
Brazil (Recife)		
Chile		
Colombia		
Ecuador		
French Guiana		
Guyana		
Paraguay		
Peru		
Suriname		
Trinidad and Tobago		
Uruguay		
Venezuela		

Figure 42 - NAT - PSAT summary

4.2 LEVEL 3 - WEB MANAGEMENT SERVICE

Verify the access to LEVEL 3's web management page.

WEB management page	Results	
	OK	NOK
Check web management access		
Check information available		
Open a ticket		

Figure 43 - NAT - WEB management tests

4.3 GLOBAL NMS

4.3.1 Central server

Tests description:

Test information displayed in Central server (Manaus).

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

Test	Results	
	OK	NOK
#Ezeiza		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		

Test	Results	
	OK	NOK
#La Paz		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Manaus		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Recife		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Curitiba		
• Cisco A		
• Cisco B		

Test	Results	
	OK	NOK
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Santiago		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Bogota		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Guayaquil		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		

Test	Results	
	OK	NOK
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Georgetown		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Cayenne		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Asuncion		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		

Test	Results	
	OK	NOK
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Lima		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Paramaribo		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Piarco		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		

Test	Results	
	OK	**NOK**
• Switch AB		
#Montevideo		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Maqueitia		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
Comments:		

Figure 44 – NAT – Central NMS tests

4.3.2 Failover server

Tests description:

Test information displayed in Failover server (Ezeiza).

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

Test	Results	
	OK	NOK
#Ezeiza		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#La Paz		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Manaus		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Recife		
• Cisco A		

Test	Results	
	OK	NOK
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Curitiba		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Santiago		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Bogota		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		

Test	Results	
	OK	NOK
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Guayaquil		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Georgetown		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Cayenne		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		

Test	Results	
	OK	NOK
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Asuncion		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Lima		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Paramaribo		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		

Test	Results	
	OK	NOK
• LNB		
• Switch AB		
#Piarco		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Montevideo		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		
#Maqueitia		
• Cisco A		
• Cisco B		
• Switch A		
• Switch B		
• Skywan A		
• Skywan B		
• Ground Backbone		
• Ibuc A		
• Ibuc B		
• VPN		
• LNB		
• Switch AB		

Test	Results	
	OK	NOK
Comments:		

Figure 45 – NAT – Failover NMS tests

5 LIST OF PARTICIPANTS

ENTERPRISE	NAME	RESPONSABILITY	SIGNATURE
INEO			
ICAO			

IPVPN SPECIFIC TERMS AND CONDITIONS AND SERVICE LEVEL AGREEMENT

Level 3 IPVPN. These are the Service Terms and Service Level Agreements for Level 3's IPVPN Service ("The Service") which apply to IPVPN Service provided by Level 3 ("Service Terms"), that make part of the contract 22501200 executed between ICAO – INEO and Level 3 ("Contract"). Initial capitalized terms not defined in these terms and conditions have the meanings given to them in the Contract. All references to the Customer herein will be understood to be made in reference to the REDDIG II Member States.

1. Description of Services

1.1. Service Description: Level 3 Converged IP Services provide end-to-end voice, data and multimedia/collaboration applications that are managed and delivered on Level 3's MPLS-based IP Network at designated speeds, subject to availability at individual Level 3 access points, enabling the Customer to transport voice, data and multimedia/collaboration applications among two or more customer designated locations ("Sites").

1.2. Customer shall execute Order Form(s) for the Service which will designate the following elements: (i) Converged Connection type (IPVPN, (ii) Service Application, (iii) Service speed, (iv) Point(s) of Presence ("POPs") at which Customer will access the Level 3 IP Network, (v) local access circuit requirements (if any), (vi) pricing, (vii) length of Initial Term for the Service(s), (viii) Class of Service ("CoS") levels (Basic, Enhanced or Premium) applying at each IP VPN port (if applicable), and (ix) optional services selected by Customer, if any (including Internet Access).

2. Converged Connection Type:

2.1. IP VPN Service: Level 3 IP VPN Service provides data transportation among two or more customer sites, through Level 3 IP VPN Network at designated speeds, and at the Class of Service ("CoS") chosen by Customer. The following three CoS levels are available at each IP VPN Converged Connection Type.

- Basic (standard or bronze)
- Enhanced (Preferred or silver)
- Premium (real time or gold)

2.2. Billing Options: The IP VPN Service includes the following billing components:

Monthly Recurring Charge ("MRC Charge"): a monthly recurrent charge applied for a specified bandwidth level and CoS configuration for each Site.
In addition to the above billing components, per event charges apply for logical and/or physical service change requests, including (but not limited to) changes in routing protocols, encapsulation, bandwidth, rate limits or CoS level. Change Order Charges are set out in the Order Form for the Service or agreed with Customer at the time the charge order request is received from Customer.

3. Service Level Agreement (SLA)

Service Delivery Guarantee Date applied to IPVPN (the below Article 3.1 does not apply and is for information purposes only. Level 3 will coordinate directly with INEO to respect the implementation schedule of Contract 22501200).

If for reasons attributable to Level 3, Service was unavailable for Customer use at the "Ready for Service Date" (RFSD) agreed between Level 3 and the Customer; the Customer shall be entitled to claim a credit on the Non Recurring Charge for installation on the affected site.

3.1. Delivery Service Delay Credits

Number of delayed days further to the RFSD	RFSD Credits [Percentage of the NRC for installation on the affected site]
1 to 10	10%
11 to 20	30%
21 to 30	50%
31 to 45	70%
Above 46	100%

Exclusions: The Customer shall not be entitled to any credit based on nonfulfillment of Delivery Date under the following circumstances:

- If the Customer has hired local accesses directly from third parties, or
- If the pre-scheduled RFSD was changed further to the request order; or was delayed for reasons to which Level 3 is alien.

Expected Delivery Time is of Sixty (60) days for all Customer Sites at On-Net locations (as defined in Section 6), effective as from acceptance by Level 3 of a Customer valid Service Order.

Expected Delivery Time is of Ninety (90) days for all Customer Sites at Off-Net locations or connected to a Virtual PoP ("VPOP") (as defined in Section 6), effective as from acceptance by Level 3 of a Customer valid Service Order.

3.2. Service Availability for IPVPN

3.2.1. Expected Service Availability

Service availability as well as credits specified below shall apply only to those On-Net Customer Sites (as defined in Section 6) with CPE's (Customer Premise Equipment) managed by Level 3.
Level 3 backbone POP to POP availability: Level 3 target backbone POP to POP availability is **99.99%.**
Level 3 POP to VPOP availability: Level 3 target availability for PoP to VPOP is of **99.8%.**
Last Mile links availability: Customers Last Mile Links Availability comes to **99.7% for On Net sites and to 99.5% for VPOPs.** This availability will be measured by the CPE (Customer Premise Equipment).

Availability for a given Site is calculated as:

$P = (A - B) / A * 100$

Where
P: Service Availability (%)
A: Amount of Minutes in a given month.
B: Amount of minutes when service is unavailable (as defined below)

3.2.2. Service Unavailability Credits

If the actual service fails to meet the expected availability as defined in Section 3.2.1, in a given month, for a given site due to problems reasonably attributable to Level 3, the Customer will be entitled to request a credit of the applicable MRC for the affected Site port as provided in Section 5 hereunder.

Level 3 accept the discounts and penalties as described in the technical specifications Section C, Article 5.13., however the discounts and penalties described therein shall be limited to 100% of the monthly price per site, except for the sites in Guyana, French Guiana, Surinam and Trinidad & Tobago, which are limited to 30% of the monthly price per site.

3.2.3. Service Unavailability

- Any Customer Site will be deemed unavailable when data are not received or sent from and to Level 3 backbone subject to the conditions specified in Section 5 hereunder.
- If Customer Site fails to accomplish a performance as described in Section 3.2.2, though data are sent and received from or to Level 3 backbone, then this Customer site will be considered to be available.
- During the unavailability period of any Service, performance credits shall not apply.

3.3. Service Performance only applicable to IPVPN

3.3.1. Round Trip Delay

- Round Trip Delay (RTD) is measured in milliseconds (ms) among Level 3 PoPs and VPOPs (as defined in Section 6). Average RTD for a packet will be measured every five (5) minutes in order to consistently obtain an average monthly performance level.

- Average Round Trip Delay for any given packet, measured among Level 3 PoPs and VPOPs are shown below. These magnitudes are measured in "ms" and may differ in 10%.

Report of December 2015 availability /
Informe de disponibilidad del mes de diciembre de 2015

Level 3

Network Management

Service Support

Trouble Tickets

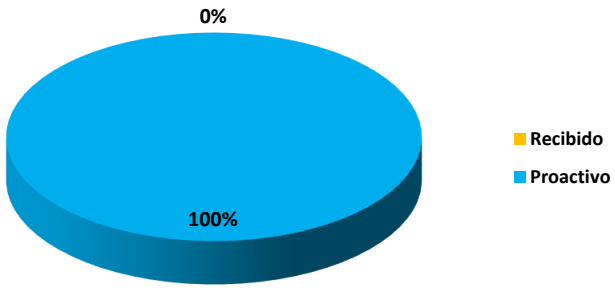
INTERNATIONAL CIVIL AVIATION

DICIEMBRE 2015

http://latam.ucommand.com

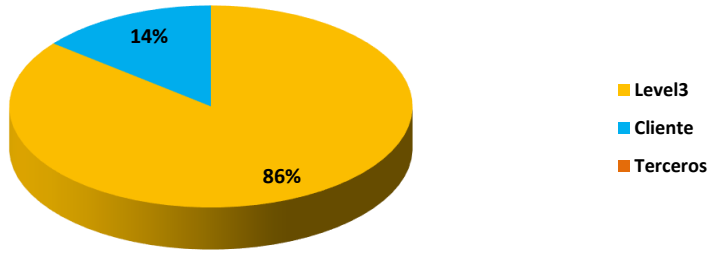
Trouble tickets del período:DICIEMBRE 2015

Distribución de trouble tickets según su orígen



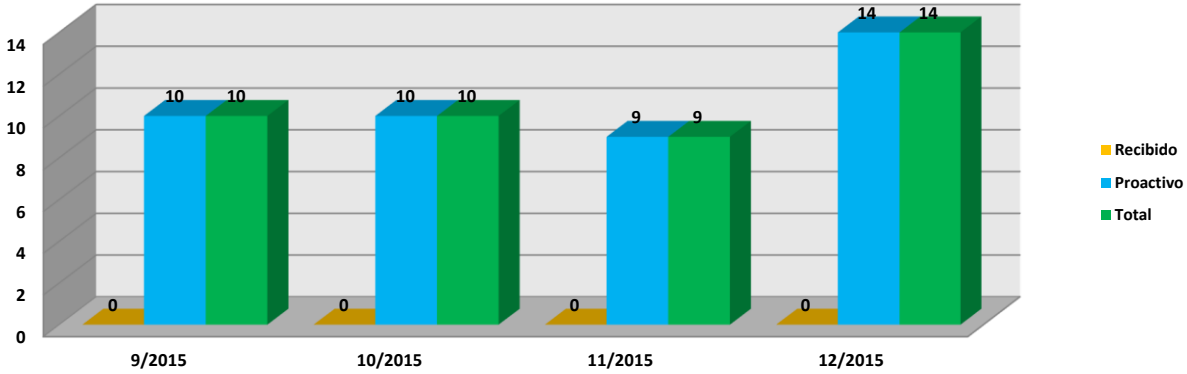
Total	Recibido	Proactivo
14	0	14

Distribución de trouble tickets según el responsable



Level3	Cliente	Terceros
12	2	0

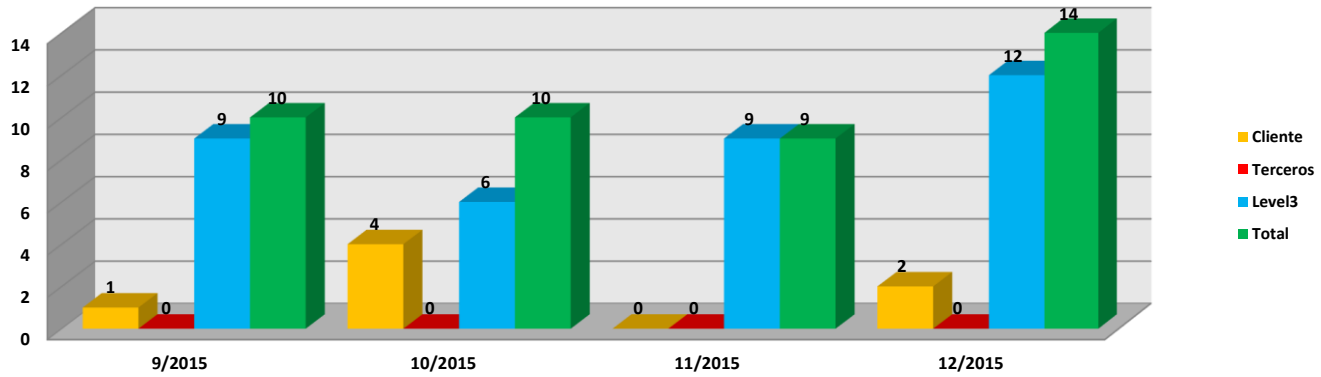
Evolución histórica de Trouble Tickets registrados según el generador.



Detalle:

Período	Recibido	Proactivo	Total
9/2015	0	10	10
10/2015	0	10	10
11/2015	0	9	9
12/2015	0	14	14

Evolución histórica de Trouble Tickets registrados según la fuente.



Detalle:

Período	Cliente	Terceros	Level3	Total
9/2015	1	0	9	10
10/2015	4	0	6	10
11/2015	0	0	9	9
12/2015	2	0	12	14

Disponibilidad de red

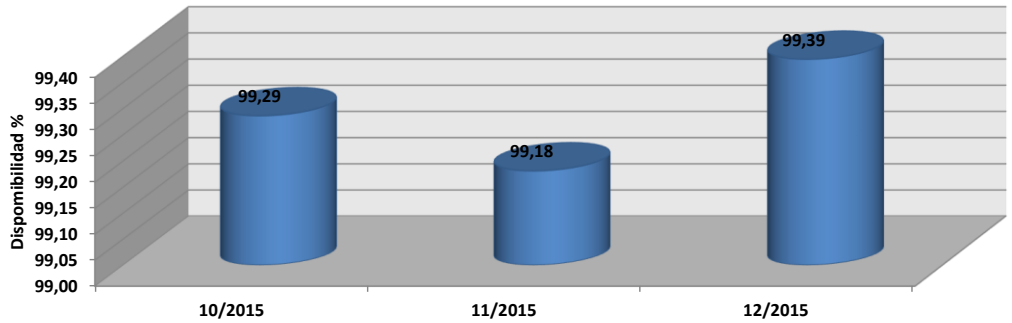
La disponibilidad de red es calculada usando la siguiente fórmula:

$$Total\_Network\_Availability = \left[\left(1 - \left(\frac{Total\_Minutes\_of\_Down\_time}{n \cdot Total\_Monthly\_Minutes}\right)\right)\right] * 100\%$$

Donde n = Número total de sitios donde Level 3 presta servicios.

Tiempo total de teporte [Min]	Tiempo de caida total [Min]	Disponibilidad de red total
44640	2975	99,39%

Evolución histórica de la disponibilidad de red



Disponibilidad de los sitios de la red - Responsabilidad Level 3

La disponibilidad de sitio es calculada usando la siguiente fórmula:

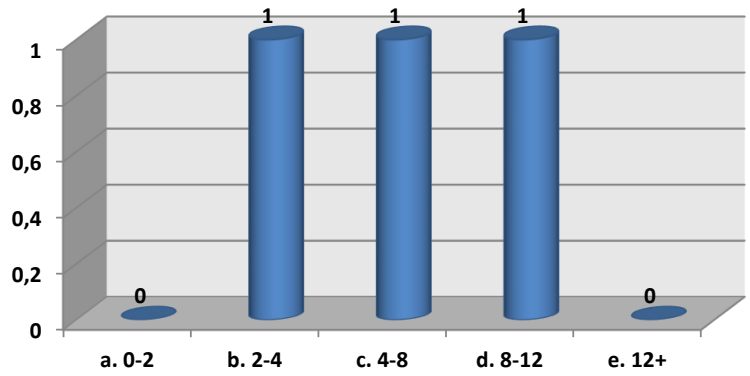
$$Availability = \left[1 - \left(\frac{Total\_Minutes\_of\_Network\_Down\_Time}{Total\_Monthly\_Minutes}\right)\right] * 100\%$$

Los sitios que no se incluyen en esta tabla tienen disponibilidad del 100%.

Sitio	Tickets	Tiempo de caida Total [Min]	Disponibilidad	MTTR
OACI-MANAUS	3	2205	95,06%	735
OACI-GUYANA FRANCESA	4	515	98,85%	129
OACI-VENEZUELA	1	255	99,43%	255
Total general	8	2975		

Disponibilidad de los sitios de la red - Responsabilidad Level 3

Distribución del MTTR - Responsabilidad Level 3



Trouble Tickets que afectan disponibilidad - Responsabilidad Level 3

Sitio	TT	Abierto	Tecnología	Tecnología que falla	Equipo que falla	Tiempo de caida [Min]
OACI-MANAUS	10081228	12/7/2015 2:25:15 AM	No Trouble Found	Unable To Reproduce Issue	Not Applicable	417
	10096292	12/9/2015 4:41:29 PM	No Trouble Found	Unable To Reproduce Issue	Not Applicable	945
	10153048	12/22/2015 6:03:47 PM	Cabling	Replaced	Optical Jumper	843
OACI-GUYANA FRANCESA	10045967	12/1/2015 12:02:33 AM	Hardware_6	See Closure Summary for Details	Not Applicable	277
	10120896	12/14/2015 10:40:06 PM	Power_6	Repaired	Not Applicable	14
	10124998	12/15/2015 7:02:04 PM	Hardware_6	See Closure Summary for Details	Not Applicable	53
	10158738	12/23/2015 8:50:53 PM	Trouble Cleared Before Network Isolation	Cleared Before Any Action Taken	Not Applicable	171
OACI-VENEZUELA	10161685	12/24/2015 5:44:44 PM	Trouble Cleared Before Element Isolation_6	Cleared Before Any Action Taken	Not Applicable	255

Disponibilidad Historica de los sitios de la red - Responsabilidad Level 3

Evolución histórica de la disponibilidad por sitio – Responsabilidad Level 3

Sitio	12/2015	11/2015	10/2015	9/2015
OACI-MANAUS	95,06%	96,53%	96,51%	99,31%
OACI-VENEZUELA	99,43%	98,41%	100.00 %	87,96%
OACI-GUYANA FRANCESA	98,85%	100.00 %	100.00 %	100,00%
OACI-CURITIBA	100.00 %	98,06%	100.00 %	100.00 %
OACI-GUAYAQUIL	100.00 %	98,65%	100.00 %	100.00 %
OACI-URUGUAY	100.00 %	99,34%	100.00 %	100.00 %
OACI-RECIFE	100.00 %	100.00 %	100.00 %	99,72%
OACI-CALLAO	100.00 %	100.00 %	96,63%	100.00 %
OACI-EZEIZA	100.00 %	100.00 %	100.00 %	100.00 %
OACI-TRINIDAD & TOBAGO	100.00 %	100.00 %	100.00 %	100.00 %
OACI-COLOMBIA	100.00 %	100.00 %	100.00 %	100.00 %
OACI-CHILE	100.00 %	100.00 %	100.00 %	100.00 %
OACI-GUYANA	100.00 %	100.00 %	100.00 %	100.00 %
OACI-SURINAME	100.00 %	100.00 %	100.00 %	99,81%
OACI-BOLIVIA	100.00 %	100.00 %	100.00 %	100.00 %
OACI-PARAGUAY	100.00 %	100.00 %	99,60%	97,06%
OACI-ARGENTINA	100.00 %	100.00 %	100.00 %	100.00 %

Disponibilidad de los sitios de la red - Responsabilidad cliente

La disponibilidad de sitio es calculada usando la siguiente fórmula:

$$Availability = \left[1 - \left(\frac{Total\_Minutes\_of\_Network\_Down\_Time}{Total\_Monthly\_Minutes}\right)\right] * 100\%$$

No se registraron tickets de responsabilidad de cliente para este periodo.

Disponibilidad de los sitios de la red - Responsabilidad cliente

No existen TT en el período que afecten disponibilidad.

Historico Disponibilidad de los sitios de la red - Responsabilidad cliente

Sitio	12/2015	11/2015	10/2015	9/2015
OACI-CURITIBA	100.00 %	100.00 %	100.00 %	100,00%
OACI-RECIFE	100.00 %	100.00 %	100.00 %	100,00%
OACI-CALLAO	100.00 %	100.00 %	100.00 %	100,00%
OACI-EZEIZA	100.00 %	100.00 %	100.00 %	100,00%
OACI-TRINIDAD & TOBAGO	100.00 %	100.00 %	100.00 %	100,00%
OACI-GUAYAQUIL	100.00 %	100.00 %	100.00 %	100,00%
OACI-COLOMBIA	100.00 %	100.00 %	100.00 %	100,00%
OACI-CHILE	100.00 %	100.00 %	100.00 %	100,00%
OACI-URUGUAY	100.00 %	100.00 %	100.00 %	100,00%
OACI-MANAUS	100.00 %	100.00 %	99,87%	100,00%
OACI-GUYANA	100.00 %	100.00 %	100.00 %	100,00%
OACI-GUYANA FRANCESA	100.00 %	100.00 %	99,87%	100,00%
OACI-VENEZUELA	100.00 %	100.00 %	100.00 %	100,00%
OACI-SURINAME	100.00 %	100.00 %	100.00 %	100,00%
OACI-BOLIVIA	100.00 %	100.00 %	100.00 %	100,00%
OACI-PARAGUAY	100.00 %	100.00 %	100.00 %	100,00%
OACI-ARGENTINA	100.00 %	100.00 %	100.00 %	100,00%

Listado de Trouble Tickets

En esta tabla se indican la totalidad de Trouble Tickets registrados como cerrados en el sistema CRM de Level 3 en el período considerado,correspondiente a todo tipo de fuente (Source), de responsabilidad (Responsability) diversa, y especificando el tipo de afectación (Affectation)

TT	Sitio	Abierto	Cerrado	Responsabilidad	Tiempo de caida [Min]	Afectación	Tecnología que falla	Equipo que falla
10046431	OACI-GUYANA FRANCESA	12/1/2015 4:34:11 AM	12/1/2015 6:47:49 AM	Level(3)	0	Impaired	Manually Created	Not Applicable
	Apreciados Señores, Cordial Saludo Se notifica la cancelación del Ticket <10046431> debido a que el evento se esta trabajando con el caso < 10045967>. Agradecemos su atención y esperamos no causar inconvenientes en su gestión.Cordial Saludo; GLORIA STELLA LINARES PEREZ Network Management Monitoring Engineer - Level 3e-mail:gloria.perez.ext@level3.com www.level3.comTel. Col. (57 1) 6118226 - 6119000 Ext. 4490 | Fax (57 1) 6119048 Col. 018000114266 - Arg. 08008004266 Ecu. 01800400404 - Per. 7004266 Ven. 2122049306 - USA 1-800-467-7288							
10045967	OACI-GUYANA FRANCESA	12/1/2015 12:02:33 AM	12/7/2015 10:51:46 PM	Leased Network/Tail Provider	277	Out-of-Service	See Closure Summary for Details	Not Applicable
	Dear Customer; Level 3 Communications informs about the close of the Ticket Customer Trouble 10045967 that was opened by our PROACTIVE process. Site Impacted: INTERNATIONAL CIVIL AVIATION ORGANIZATION Matoury 97351, French Guaina 97351, Cayena, France Type of Problem: Out-of-Service Symptom: Line or Circuit Down Access Type: Main linkRoot Cause: Circuit was affected by a faulty card in one of the LECs CORE equipment. Traffic was temporarily switched to another path. Once the card was replaced and reconfigured, the circuit was switched back to its main path.Ticket time: 0 minutes Unavailability applies: NO. After monitoring the service for 24 Hours we can confirm that operation has been restored and the fix applied is stable.Regards.ferrettr Network Management Monitoring Engineer - Level 3e-mail: servicedesknmpt@level3.comToll Free and Local numbers:Argentina: 0800-800-4266 Brasil: 0800-772-4266 / +55-11-3957-2415Chile: 01800-83-5481Colombia: 018000-11-4266 / +57-1-611-8226Ecuador: 01800-40-0404 (Opt 01)Peru: 0800-70862USA: 1-800-467-7288 Venezuela: 1-800-467-7288 / +58-212-204-9306							
10081228	OACI-MANAUS	12/7/2015 2:25:15 AM	12/8/2015 6:29:57 PM	Level(3)	417	Out-of-Service	Unable To Reproduce Issue	Not Applicable
	Boa tarde, Senhores Em contato com o cliente o Sr. Josemar o mesmo informou que o link esta normalizado e autorizou o encerramento desse chamado.Att,NOC Level(3)Juliana Correa							
10120896	OACI-GUYANA FRANCESA	12/14/2015 10:40:06 PM	12/17/2015 7:40:19 PM	Leased Network/Tail Provider	14	Out-of-Service	Repaired	Not Applicable
	Dear Customer; Level 3 Communications informs about the close of the Ticket Customer Trouble 10120896 that was opened by our PROACTIVE process. Site Impacted: INTERNATIONAL CIVIL AVIATION ORGANIZATION Matoury 97351, French Guaina 97351, Cayena, FranceType of Problem: Out-of-Service Symptom: Line or Circuit Down Access Type: Main linkRoot Cause: Our local provider indicates the circuit was affected by power issues at their POP. Issue was corrected and services restored.Ticket time: 14 minutes Unavailability applies: YES. After monitoring the service for 24 Hours we can confirm that operation has been restored and the fix applied is stable.Regards.ferrettr Network Management Monitoring Engineer - Level 3e-mail: servicedesknmpt@level3.comToll Free and Local numbers:Argentina: 0800-800-4266 Brasil: 0800-772-4266 / +55-11-3957-2415Chile: 01800-83-5481Colombia: 018000-11-4266 / +57-1-611-8226Ecuador: 01800-40-0404 (Opt 01)Peru: 0800-70862USA: 1-800-467-7288 Venezuela: 1-800-467-7288 / +58-212-204-9306							

10124998	OACI-GUYANA FRANCESA	12/15/2015 7:02:04 PM	12/17/2015 7:44:45 PM	Leased Network/Tail Provider	53	Out-of-Service	See Closure Summary for Details	Not Applicable
	Dear Customer; Level 3 Communications informs about the close of the Ticket Customer Trouble 10124998 that was opened by our PROACTIVE process. Site Impacted: INTERNATIONAL CIVIL AVIATION ORGANIZATION Matoury 97351, French Guaina 97351, Cayena, FranceType of Problem: Out-of-Service Symptom: Line or Circuit Down Access Type: Main linkRoot Cause: Our local provider indicates the circuit was affected by an issue their last mile provider had on their network which cause the outage on the traffic to some services. Issue was solved and circuit restored.Ticket time: 53 minutes Unavailability applies: YES. After monitoring the service for 24 Hours we can confirm that operation has been restored and the fix applied is stable.Regards. ferrettr Network Management Monitoring Engineer - Level 3e-mail: servicedesknmpt@level3.comToll Free and Local numbers:Argentina: 0800-800-4266 Brasil: 0800-772-4266 / +55-11-3957-2415Chile: 01800-83-5481Colombia: 018000-11-4266 / +57-1-611-8226Ecuador: 01800-40-0404 (Opt 01)Peru: 0800-70862USA: 1-800-467-7288 Venezuela: 1-800-467-7288 / +58-212-204-9306							
10130696	OACI-GUYANA FRANCESA	12/16/2015 8:02:17 PM	12/21/2015 7:55:46 AM	L3 Broadcast Group	0	Impaired	Network	Other
	Apreciado cliente Buen día De la manera mas atenta se notifica cierre del evento presentado por nuestros procesos de gestión proactiva. Sede afectada: OACI - GUYANA FRANCESA Tipo de Evento: caida Tipo de Canal: datos Causa: Fue necesario escalar el caso a nuestra area de expertos y el diagnóstico reveló: LEC indicates their last mile provider reset their demarc in order to restore services Tiempo: 0 minutosIndisponibilidad: no. Luego de mantener en observación el caso se verifica, operatividad y estabilidad del enlace y se procede con el cierre del caso. Agradecemos su atención y notificación ante cualquier inconveniente detectado.Gracias por su atención.Cordialmente.Cesar Augusto Melo SaavedraNetwork Management Monitoring Engineer - Level 3e-mail: cesar.melo@level3.com www.level3.comTel. Col. (57 1) 6118226 - 6119000 Ext. 4490 | Fax (57 1) 6119048							
10096292	OACI-MANAUS	12/9/2015 4:41:29 PM	12/10/2015 8:12:49 PM	Leased Network/Tail Provider	945	Out-of-Service	Unable To Reproduce Issue	Not Applicable
	Boa tarde, Senhores Em contato com o cliente o Sr. Luis Alejos o mesmo informou que o link esta normalizado e autorizou o encerramento desse chamado.O mesmo informou que esta havendo muitas quedas na sua rede nesses ultimos meses por causa da ultima milha.Att,NOC Level(3)Juliana Correa							
10158738	OACI-GUYANA FRANCESA	12/23/2015 8:50:53 PM	12/30/2015 9:10:53 PM	Level(3)	171	Out-of-Service	Cleared Before Any Action Taken	Not Applicable
	Circuit is operational, per LEC circuit normalized without technical intervention.							

10160024	OACI-GUYANA FRANCESA	12/24/2015 4:33:36 AM	12/24/2015 6:22:50 AM	Level(3)	0	Impaired	Manually Created	Not Applicable
	Apreciados Señores, Cordial Saludo Se notifica la cancelación del Ticket 10160024 debido a que el evento se esta trabajando con el caso 10158738 . Agradecemos su atención y esperamos no causar inconvenientes en su gestión.Cordialmente.Andres Camilo Ruiz CorrealNetwork Management Monitoring Engineer / Data & Internet Products Level 3. Latin AmericaAutopista norte 122-35Bogota, Colombiat: +57 1 6118226 ARG : 08008004266 ? COL : 018000114266 ECU : 01800400404 ? PERU : 7004266e: andres.ruiz.ext@level3.com							
10163020	OACI-VENEZUELA	12/25/2015 1:59:25 PM	12/28/2015 7:45:25 PM	Leased Network/Tail Provider	0	Impaired	Manually Created	Not Applicable
	Ticket duplicado. El seguimiento de este caso se esta realizando a traves del ticket No. 10161685.							
10122857	OACI-MANAUS	12/15/2015 1:58:20 PM	12/16/2015 2:02:06 AM	Customer	0	Impaired	System Generated	Not Applicable
	Ja temos o chamado : 10122913 para a tratativa deste caso.							
10134869	OACI-URUGUAY	12/17/2015 5:18:36 PM	1/6/2016 12:26:35 PM	Customer	0	Impaired	Unable To Reproduce Issue	Not Applicable
	Se reclama servicio de datos con intermitencias. Se realizan verificaciones de conectividad, sin encontrar inconvenientes por parte del proveedor Dedicado. Se comparten las pruebas con el cliente, quien confirma la operatividad actual, y evaluara por su parte las fallas en su red interna. Se acuerda el cierre del ticket.							
10153048	OACI-MANAUS	12/22/2015 6:03:47 PM	12/23/2015 8:41:58 PM	Leased Network/Tail Provider	843	Out-of-Service	Replaced	Optical Jumper
	Feito contato com Sandro 55-92-3652 5714, foi confirmado a normalizacio do link e autorizado encerrar o ticket.							
10161685	OACI-VENEZUELA	12/24/2015 5:44:44 PM	12/28/2015 7:52:42 PM	Leased Network/Tail Provider	255	Out-of-Service	Cleared Before Any Action Taken	Not Applicable
	Estimado cliente, De la manera mas atenta se notifica cierre del evento presentado por nuestros procesos de gestión proactiva. Sede afectada: Maiquetia. Tipo de Evento: Intermitencias.Tipo de Canal: PrincipalCausa: Falla en el circuito de última. Nuestro proveedor no logro determinar el origen de las intermitencias debido a que no registraron alarmas en el circuito.Tiempo: 4 horas y 15 minutos.Indisponibilidad: SI. Luego de mantener en observación el caso se verifica, operatividad y estabilidad del enlace y se procede con el cierre del caso. Agradecemos su atención y notificación ante cualquier inconveniente detectado.Gracias por su atención.Cordialmente,Victor Veloso							

Level(3)

Definiciones	
Sitio	Es el sitio del cliente en el cual Level 3 presta un servicio.
TT	Número de evento registrado (Trouble Ticket Number = Número de Ticket del Problema).
Abierto	Día y hora registrado en el sistema CRM de Level 3 como inicio del reclamo.
Recuperado	Día y hora en la cual se reestableció el servicio según lo registrado en el sistema CRM de Level 3.
Responsabilidad	Indica la responsabilidad por la falla del servicio. • Level 3 Last Mile: Falla o riesgo cuya responsabilidad es de Level 3 y fue producida por falla en el Last Mile de Level 3. • Level 3 Backbone: Falla o riesgo cuya responsabilidad es de Level 3 y fue producida por falla de Backbone. • Cliente: La responsabilidad de la caída o degradación o riesgo es del Cliente. • Tercero: Responsabilidad de un proveedor del Cliente distinto de Level 3. Por ejemplo un proveedor de PBX, un proveedor de enlaces, o un servidor en la red de Internet caído aunque el servicio de conexión a la red que da Level 3 este funcionando. Este estado entonces indica que la responsabilidad por la falla del servicio es del Cliente. • Fuerza Mayor: Desastre natural, o conmoción civil en la que Level 3 esta liberado de la responsabilidad sobre la caída. • Sin determinar: El Cliente reporta que el servicio fue afectado en el algún momento del pasado pero en el momento del reclamo el operador diagnostica que el servicio se encuentra activo y en funcionamiento normal. Se documenta el reclamo pero no puede determinarse al responsable de la caída.
Afectación	Indica el grado de afectación con el cual fue catalogado el reclamo. • Indisponible: el servicio no puede utilizarse. • Disponible degradado: el servicio puede utilizarse pero tiene una perfomance inferior a la definida. • En riesgo: no hay afectación de servicio pero existe riesgo considerable que se interrumpa el servicio o se genere una afectación colateral no deseada (por ejemplo afectación personal o edilicia) • Sin afectación: es un reclamo o pedido a Assurance por un motivo que no afecta ni pone en riesgo el servicio básico.
Tiempo de caida (Minutos)	Es el tiempo neto en el cual el servicio estuvo indisponible.
Descripción de cierre	Es la causa que originó el reclamo (TT), y que fuera registrada en el cierre del mismo.

NETWORK MANAGEMENT

CAPACIDAD Y RENDIMIENTO

Utilización de Memoria y CPU

INTERNATIONAL CIVIL AVIATION ORGANIZATION
1-7GO-1873

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS

Connecting and Protecting the Networked World

Diciembre 2015

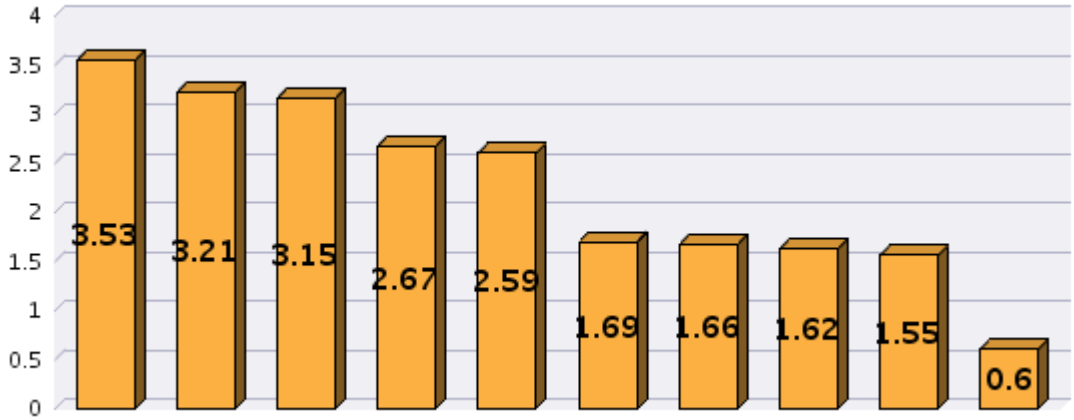
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World

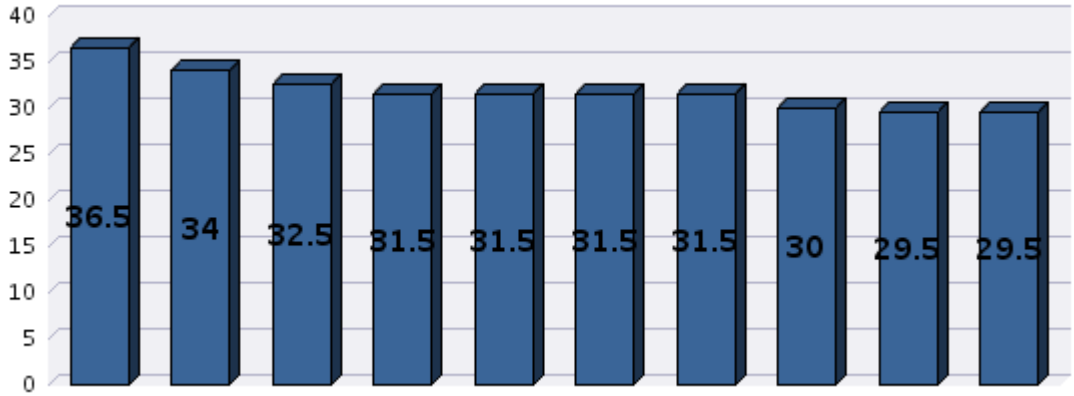
Top Promedio CPU (%)

OACI - TRINIDAD & TOBAGO // ICAO_TRINIDAD.yourdomain.com // 172.21.6.194	OACI - ECUADOR // ICAO_ECUADOR // 172.21.6.195	OACI - CHILE // ICAO_CHILE.yourdomain.com // 172.21.6.197	OACI - COLOMBIA // ICAO_COLOMBIA // 172.21.6.196	OACI - ARGENTINA // ICAO_ARGENTINA // 172.21.6.193	OACI - BRASIL RECIFE // ICAO_RECIFE // 172.20.26.62	OACI - BRASIL CURITIBA // ICAO_CURITIBA // 172.20.26.63	OACI - LIMA // ICAO_PERU // 172.20.26.50	OACI - URUGUAY // ICAO_URUGUAY // 172.21.6.198	OACI - PARAGUAY // ICAO_PARAGUAY.ineo.com.py // 172.21.6.199
3.53	**3.21**	**3.15**	**2.67**	**2.59**	**1.69**	**1.66**	**1.62**	**1.55**	**0.6**



Top Promedio MEM (%)

OACI - TRINIDAD & TOBAGO // ICAO_TRINIDAD.yourdomain.com // 172.21.6.194	OACI - PARAGUAY // ICAO_PARAGUAY.ineo.com.py // 172.21.6.199	OACI - CHILE // ICAO_CHILE.yourdomain.com // 172.21.6.197	OACI - ARGENTINA // ICAO_ARGENTINA // 172.21.6.193	OACI - GUYANA FRANCESA // ICAO_FR_GUYANA.eq.ignetworks.com // 172.21.6.201	OACI - LIMA // ICAO_PERU // 172.20.26.50	OACI - VENEZUELA // ICAO_VENEZUELA // 172.21.6.202	OACI - BRASIL RECIFE // ICAO_RECIFE // 172.20.26.62	OACI - GUYANA // ICAO_GUYANA.yourdomain.com // 172.21.6.200	OACI - SURINAME // ICAO_SURINAME.yourdomain.com // 172.21.6.203
36.5	**34**	**32.5**	**31.5**	**31.5**	**31.5**	**31.5**	**30**	**29.5**	**29.5**



Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Resumen:

		Diciembre 2015			
Sede	**IP Loopback**	**Promedio de Utilización de CPU[%]**	**Min CPU[%]**	**Max CPU[%]**	**Promedio de Utilización de Memoria [%]**
OACI - ARGENTINA					
ICAO_ARGENTINA	172.21.6.193	2.59	2	5	31.5
OACI - BOLIVIA					
ICAO_BOLIVIA.tigo.net.bo	172.21.6.204	0.24	0	2	26.5
OACI - BRASIL CURITIBA					
ICAO_CURITIBA	172.20.26.63	1.66	1	5	14.5
OACI - BRASIL MANAUS					
ICAO_MANAUSBRASIL	172.21.6.192	0.4	0	3	13
OACI - BRASIL RECIFE					
ICAO_RECIFE	172.20.26.62	1.69	1	4	30
OACI - CHILE					
ICAO_CHILE.yourdomain.com	172.21.6.197	3.15	2	6	32.5
OACI - COLOMBIA					
ICAO_COLOMBIA	172.21.6.196	2.67	2	5	29
OACI - ECUADOR					
ICAO_ECUADOR	172.21.6.195	3.21	3	5	28.76
OACI - GUYANA					
ICAO_GUYANA.yourdomain.com	172.21.6.200	0.4	0	3	29.5
OACI - GUYANA FRANCESA					
ICAO_FR_GUYANA.eq.ignetworks.com	172.21.6.201	0.55	0	3	31.5
OACI - LIMA					
ICAO_PERU	172.20.26.50	1.62	1	4	31.5
OACI - PARAGUAY					
ICAO_PARAGUAY.ineo.com.py	172.21.6.199	0.6	0	2	34
OACI - SURINAME					
ICAO_SURINAME.yourdomain.com	172.21.6.203	0.42	0	3	29.5
OACI - TRINIDAD & TOBAGO					
ICAO_TRINIDAD.yourdomain.com	172.21.6.194	3.53	3	6	36.5
OACI - URUGUAY					
ICAO_URUGUAY	172.21.6.198	1.55	1	4	27.5
OACI - VENEZUELA					
ICAO_VENEZUELA	172.21.6.202	0.56	0	3	31.5

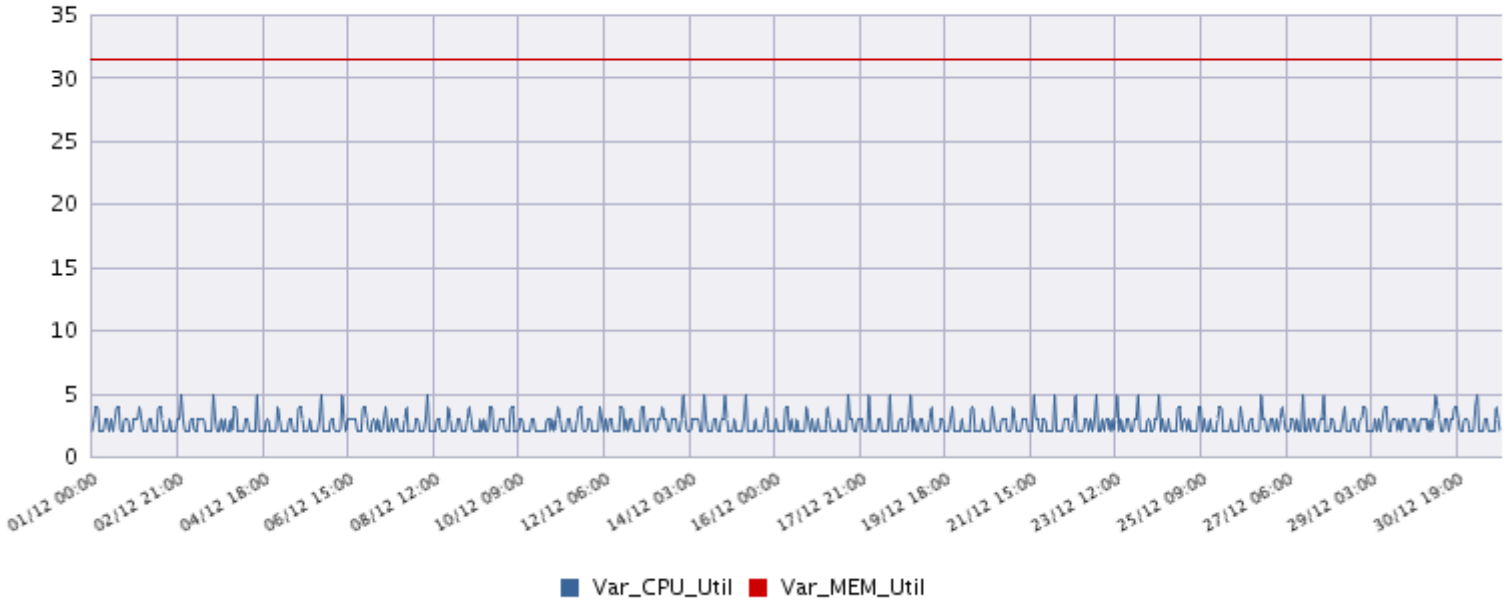
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - ARGENTINA**
Equipo	**ICAO_ARGENTINA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.193)**
Ciudad	**Ezeiza**

PROM (CPU: 2.59 | MEM: 31.5) [%]



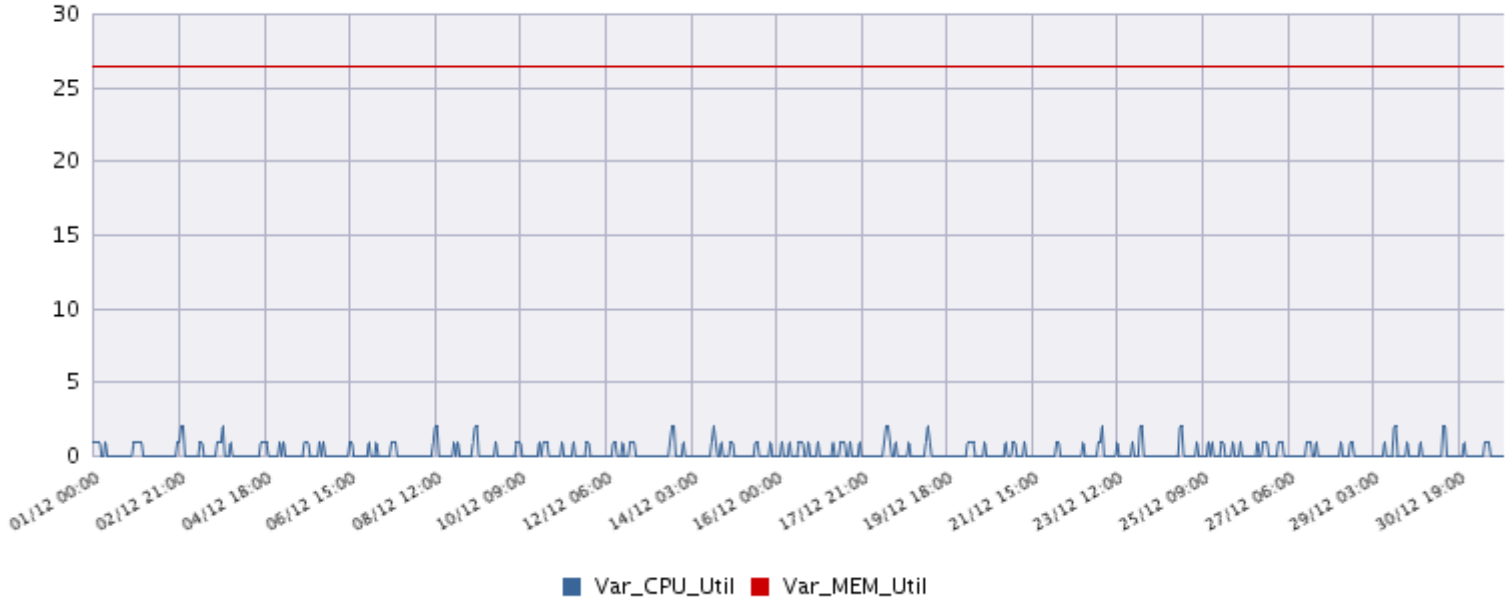
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - BOLIVIA**
Equipo	**ICAO_BOLIVIA.tigo.net.bo**
IP de Gestión	**(172.21.6.204)**
Modelo	**Cisco1921k9**
Ciudad	**La Paz**

PROM (CPU: 0.24 | MEM: 26.5) [%]



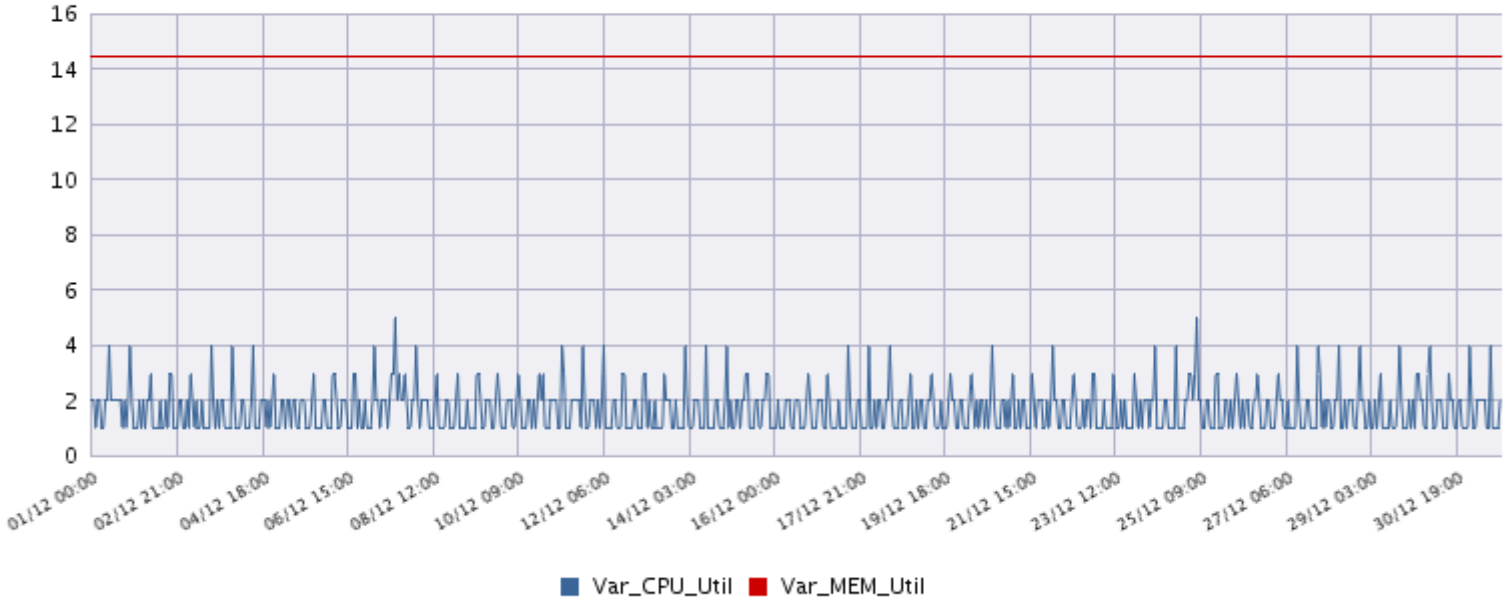
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - BRASIL CURITIBA**
Equipo	**ICAO_CURITIBA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.20.26.63)**
Ciudad	**Curitiba**

PROM (CPU: 1.66 | MEM: 14.5) [%]



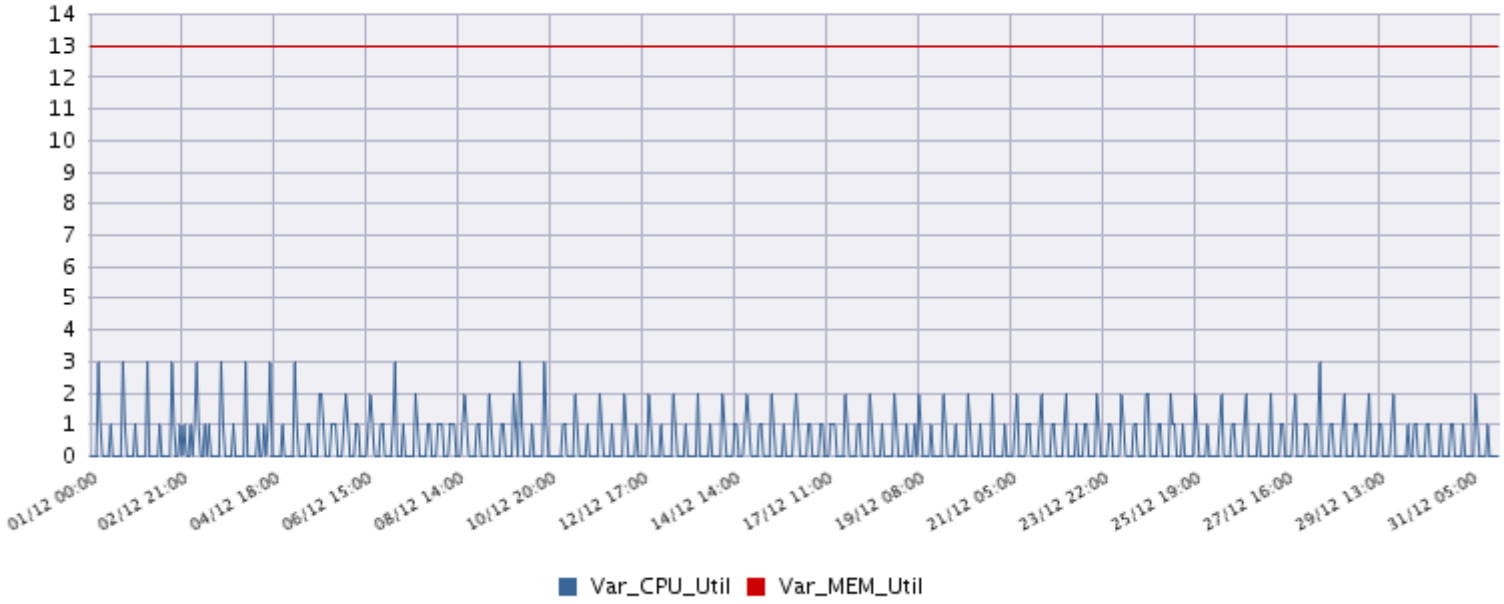
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - BRASIL MANAUS**
Equipo	**ICAO_MANAUSBRASIL**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.192)**
Ciudad	**Manaus**

PROM (CPU: 0.4 | MEM: 13) [%]



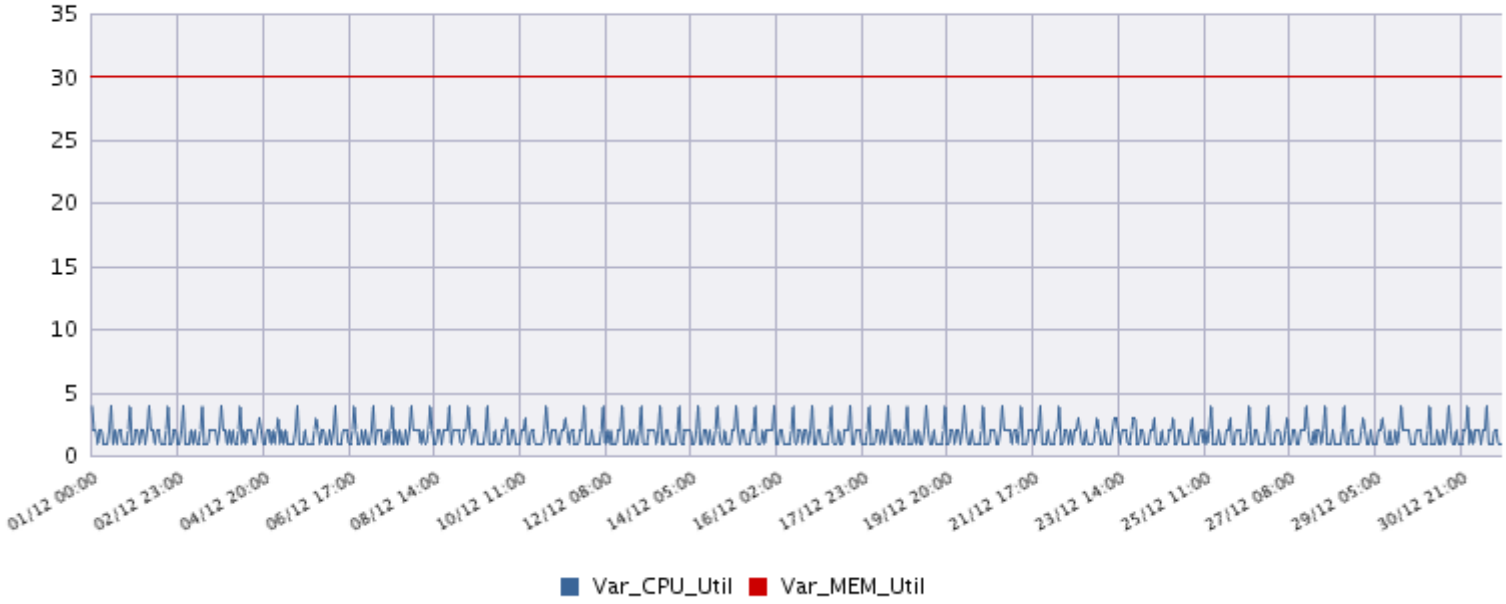
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - BRASIL RECIFE**
Equipo	ICAO_RECIFE
Modelo	Cisco1921k9
IP de Gestión	(172.20.26.62)
Ciudad	Recife

PROM (CPU: 1.69 | MEM: 30) [%]



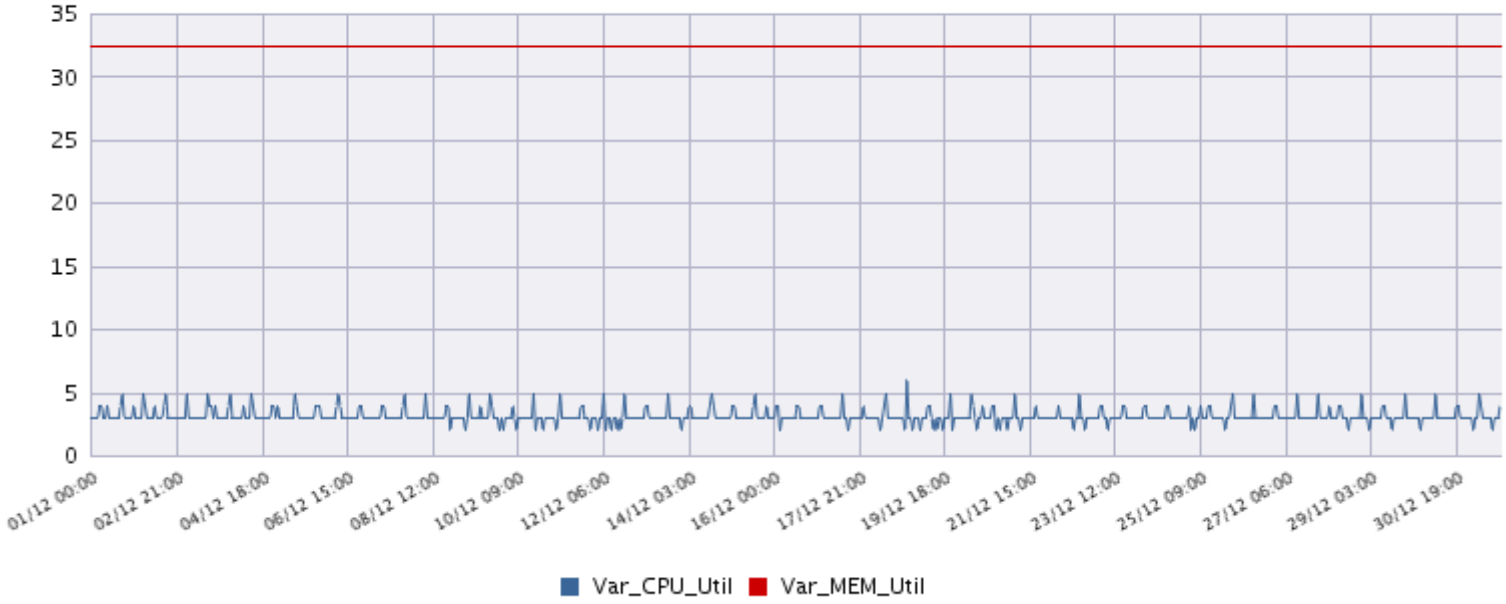
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - CHILE**
Equipo	**ICAO_CHILE.yourdomain.com**
IP de Gestión	**(172.21.6.197)**
Modelo	**Cisco1921k9**
Ciudad	**Santiago de Chile**

PROM (CPU: 3.15 | MEM: 32.5) [%]



Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
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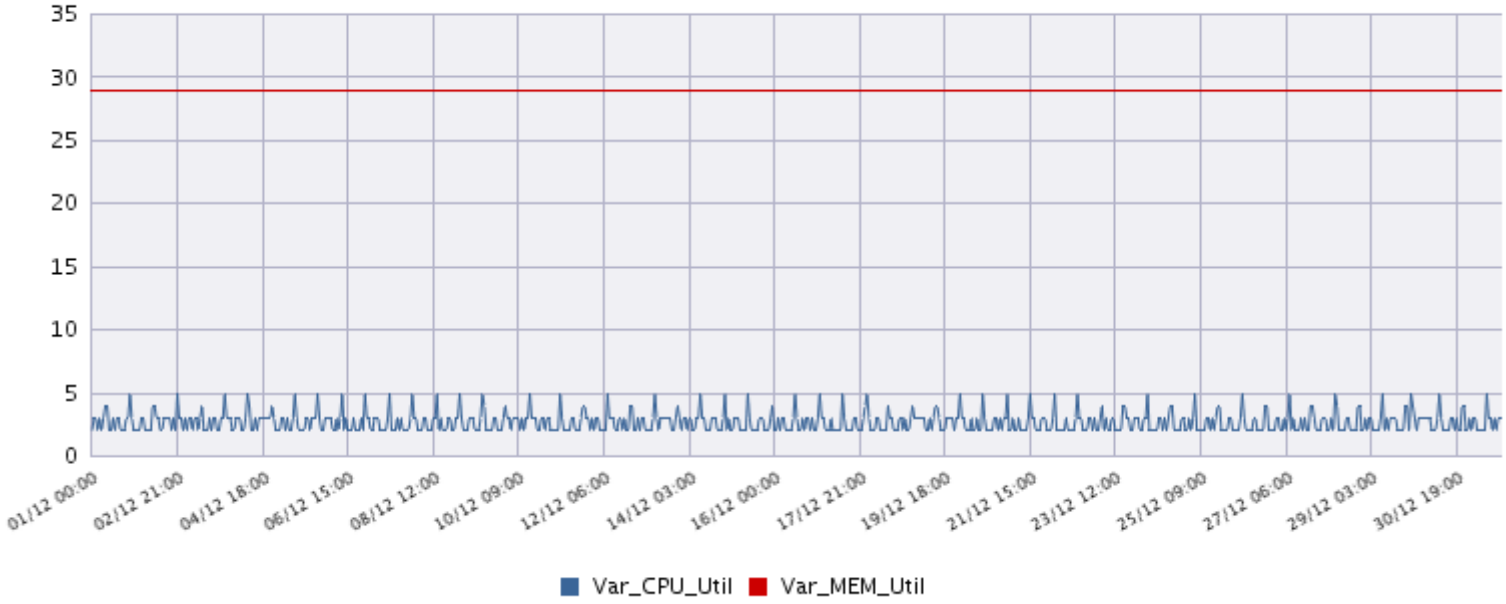
Sede	**OACI - COLOMBIA**
Equipo	**ICAO_COLOMBIA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.196)**
Ciudad	**Bogotá**

PROM (CPU: 2.67 | MEM: 29) [%]



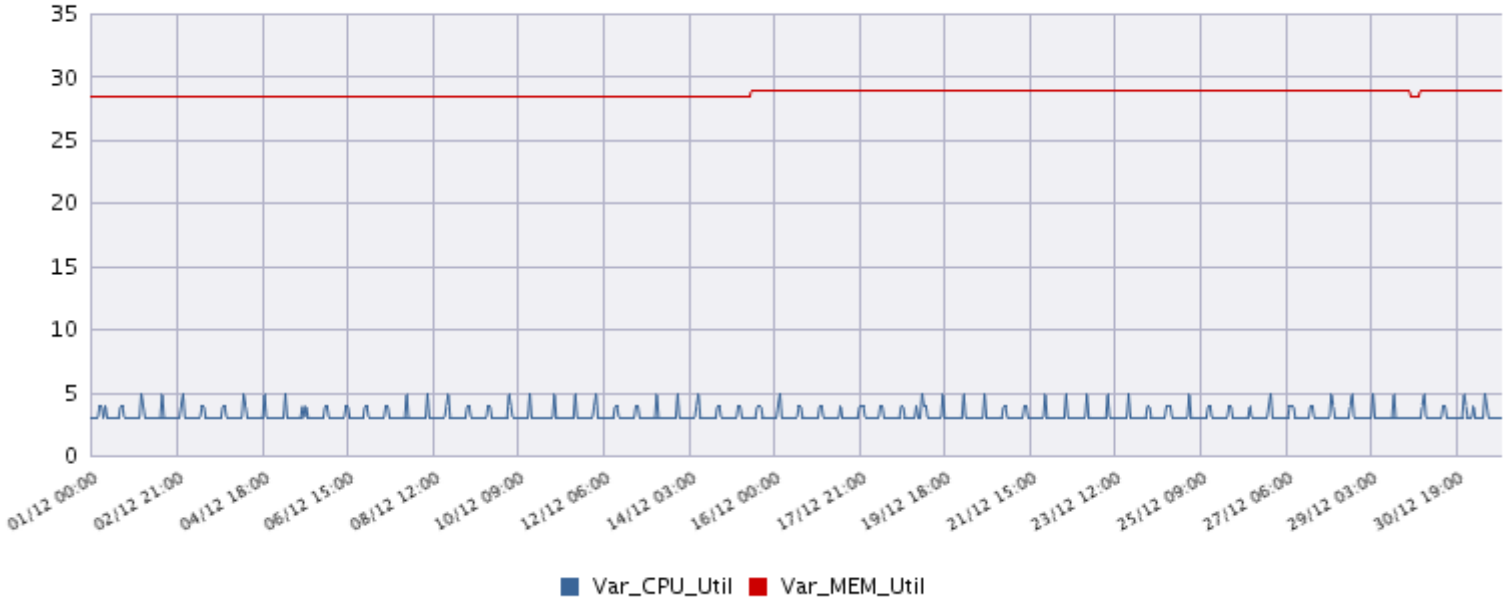
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - ECUADOR**
Equipo	**ICAO_ECUADOR**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.195)**
Ciudad	**Guayaquil**

PROM (CPU: 3.21 | MEM: 28.76) [%]



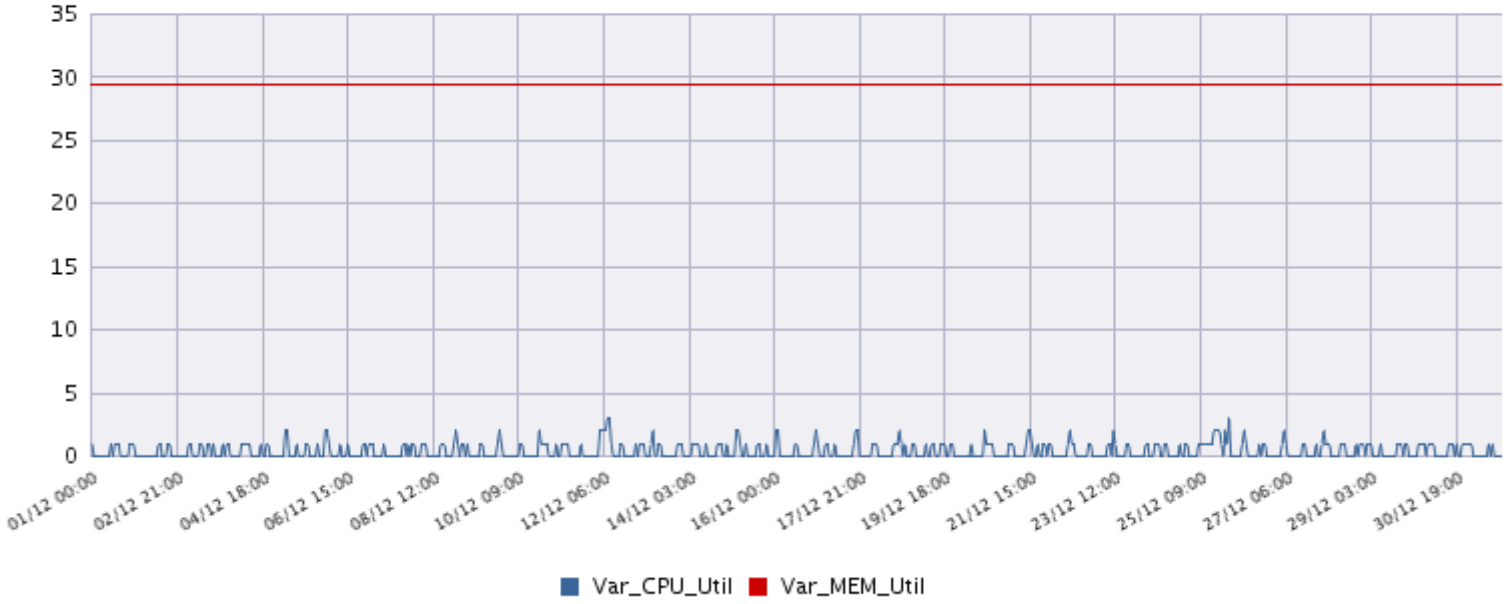
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - GUYANA**
Equipo	ICAO_GUYANA.yourdomain.com
IP de Gestión	(172.21.6.200)
Modelo	Cisco1921k9
Ciudad	Georgetown

PROM (CPU: 0.4 | MEM: 29.5) [%]



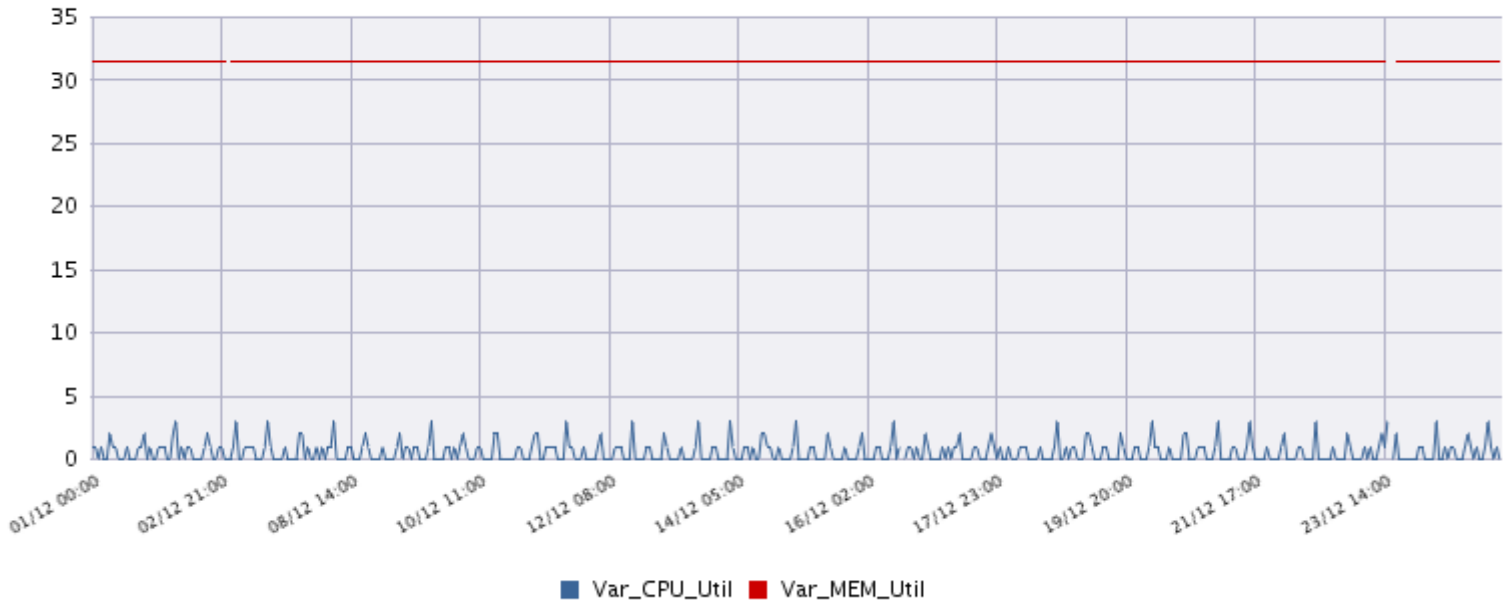
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - GUYANA FRANCESA**
Equipo	ICAO_FR_GUYANA.eq.ignetworks.com
IP de Gestión	(172.21.6.201)
Modelo	Cisco1921k9
Ciudad	Cayena

PROM (CPU: 0.55 | MEM: 31.5) [%]



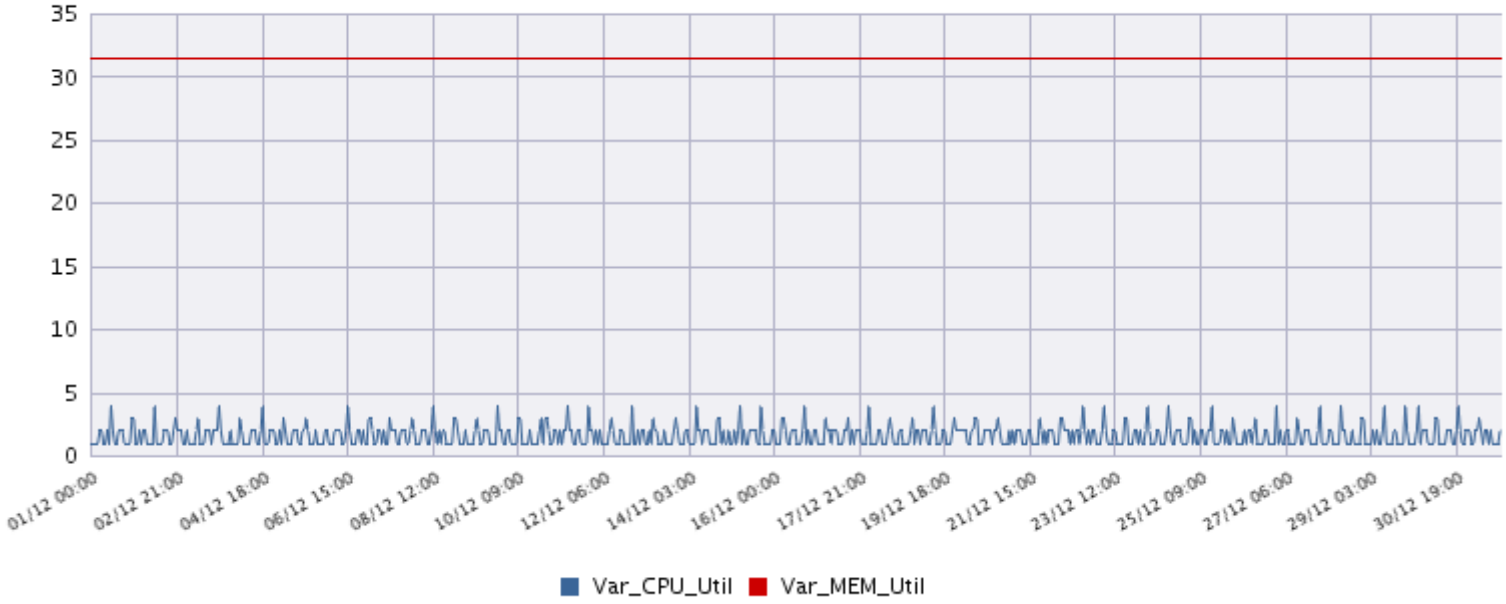
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - LIMA**
Equipo	**ICAO_PERU**
IP de Gestión	**(172.20.26.50)**
Modelo	**Cisco1921k9**
Ciudad	**Callao**

PROM (CPU: 1.62 | MEM: 31.5) [%]



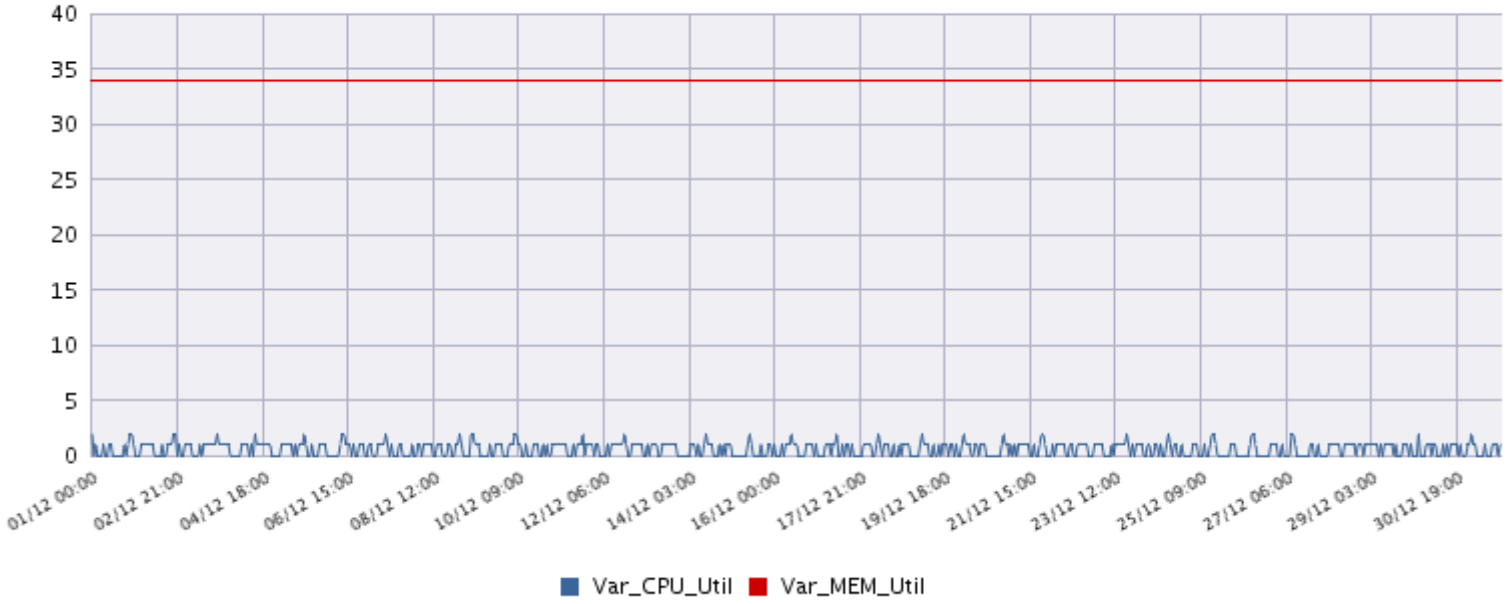
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - PARAGUAY**
Equipo	ICAO_PARAGUAY.ineo.com.py
IP de Gestión	(172.21.6.199)
Modelo	Cisco1941
Ciudad	Asunción

PROM (CPU: 0.6 | MEM: 34) [%]



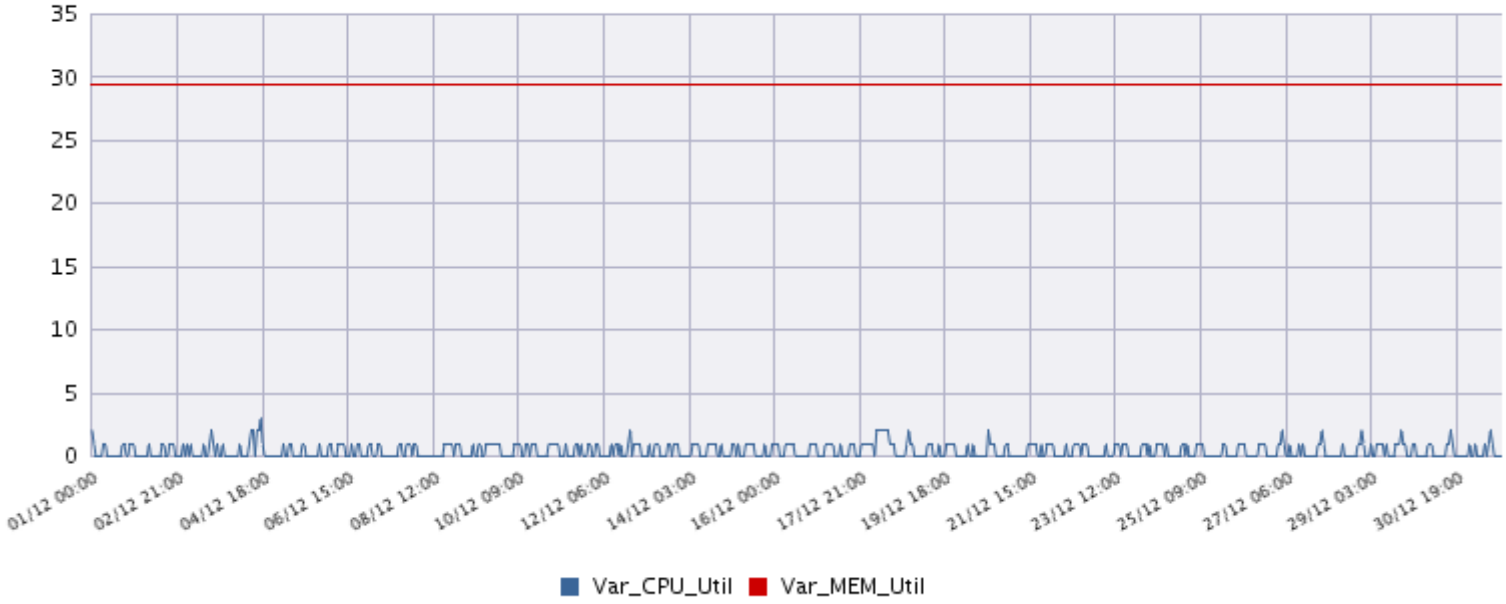
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - SURINAME**
Equipo	**ICAO_SURINAME.yourdomain.com**
IP de Gestión	**(172.21.6.203)**
Modelo	**Cisco1921k9**
Ciudad	**Paramaribo**

PROM (CPU: 0.42 | MEM: 29.5) [%]



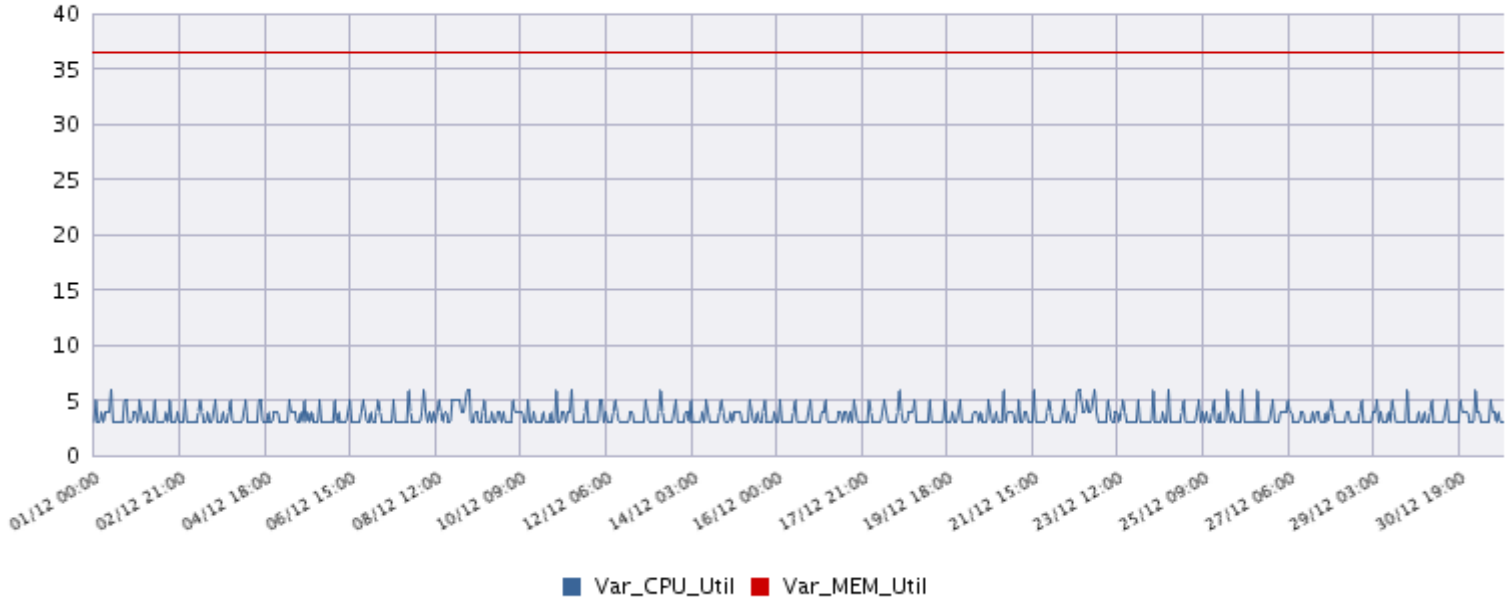
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - TRINIDAD & TOBAGO**
Equipo	**ICAO_TRINIDAD.yourdomain.com**
IP de Gestión	**(172.21.6.194)**
Modelo	**Cisco1921k9**
Ciudad	**Port of Spain**

PROM (CPU: 3.53 | MEM: 36.5) [%]



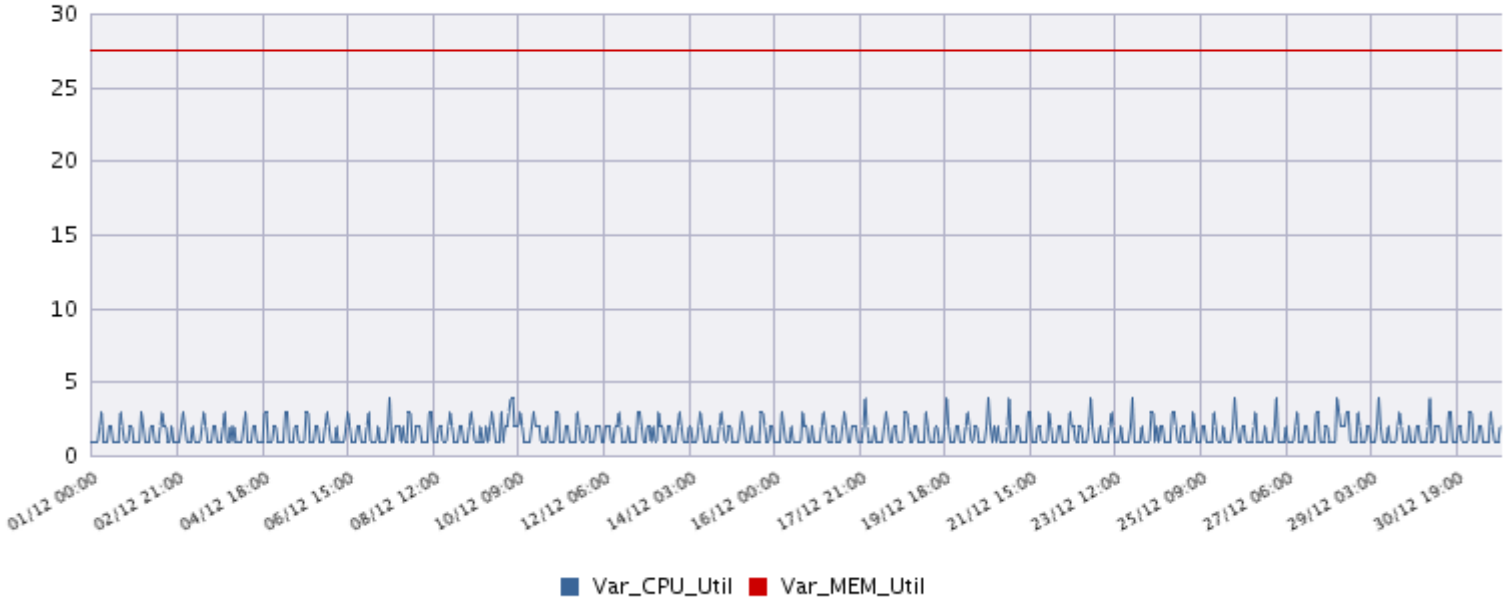
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - URUGUAY**
Equipo	**ICAO_URUGUAY**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.198)**
Ciudad	**Montevideo**

PROM (CPU: 1.55 | MEM: 27.5) [%]



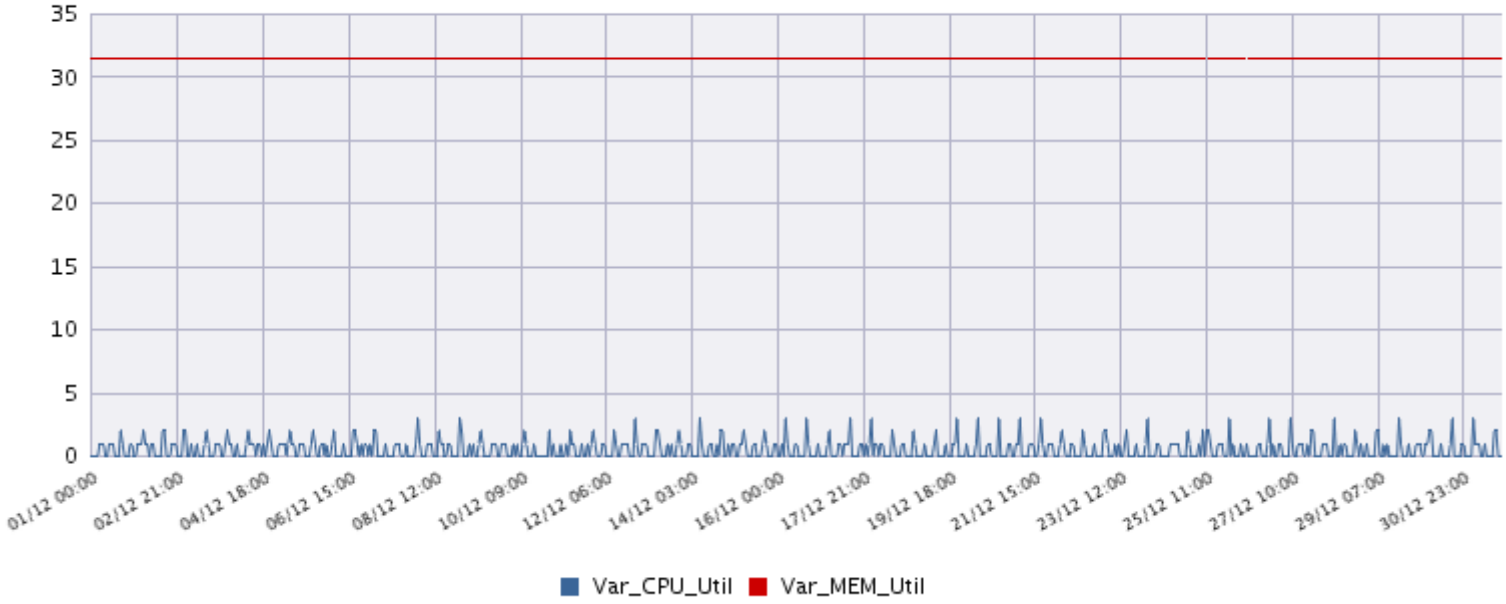
Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - VENEZUELA**
Equipo	**ICAO_VENEZUELA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.202)**
Ciudad	**Maiquetía**

PROM (CPU: 0.56 | MEM: 31.5) [%]



Reporte de Utilización de Memoria y CPU, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS

Connecting and Protecting the Networked World℠

NETWORK MANAGEMENT

CAPACIDAD Y RENDIMIENTO

Delay, Jitter, Packet Loss

INTERNATIONAL CIVIL AVIATION ORGANIZATION
1-7GO-1873

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS

Connecting and Protecting
the Networked World

Diciembre 2015

Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

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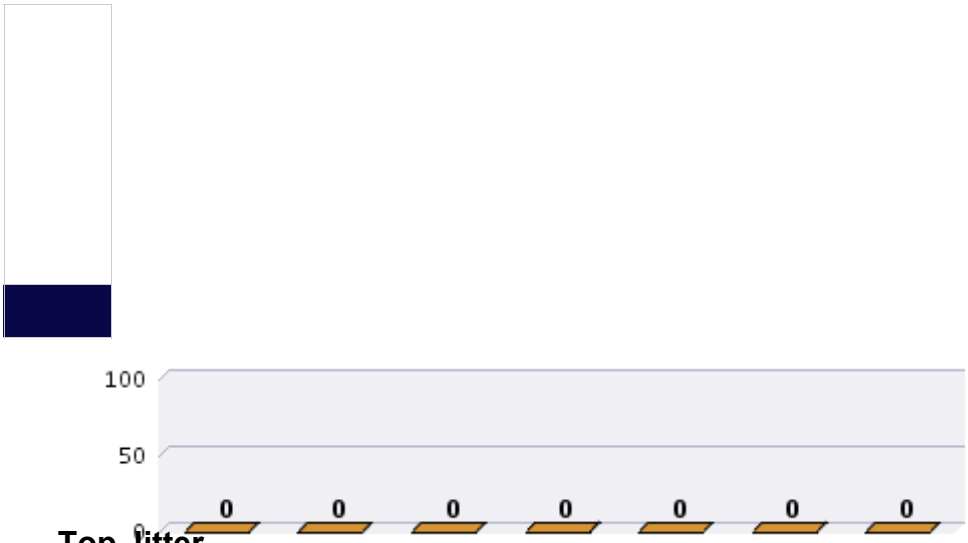
Top Delay



Top Jitter

Top Packet Loss

Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Evolución histórica:

Sede	Diciembre 2015		
	Delay [ms] Promedio	Jitter [ms] Promedio	Packet Loss Porcentaje
OACI - ARGENTINA ICAO_ARGENTINA : (172.21.6.193)	0	0	0
OACI - BRASIL CURITIBA ICAO_CURITIBA : (172.20.26.63)	0	0	0
OACI - CHILE ICAO_CHILE.yourdomain.com : (172.21.6.197)	0	0	0
OACI - COLOMBIA ICAO_COLOMBIA : (172.21.6.196)	0	0	0
OACI - ECUADOR ICAO_ECUADOR : (172.21.6.195)	0	0	0
OACI - TRINIDAD & TOBAGO ICAO_TRINIDAD.yourdomain.com : (172.21.6.194)	0	0	0
OACI - URUGUAY ICAO_URUGUAY : (172.21.6.198)	0	0	0

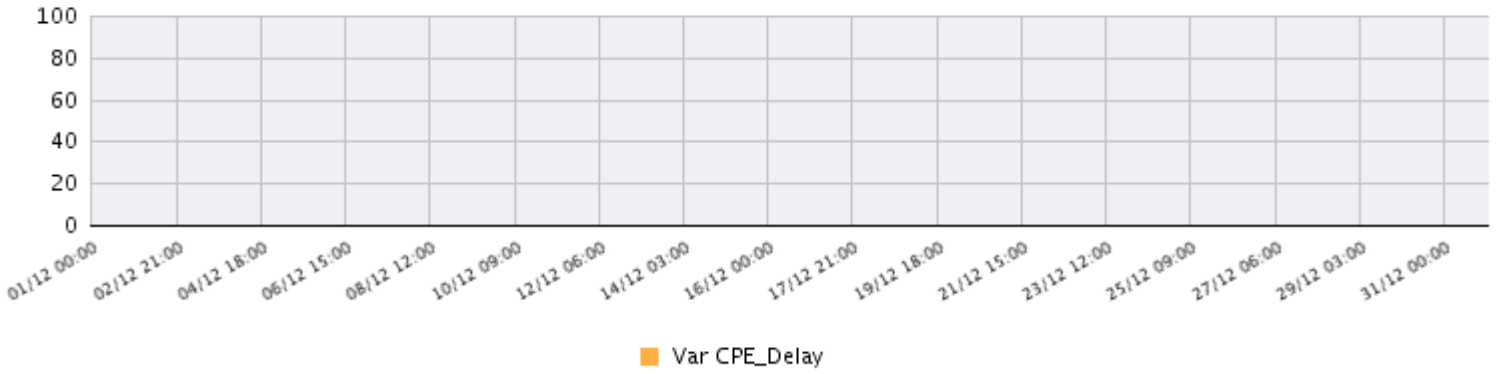
Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

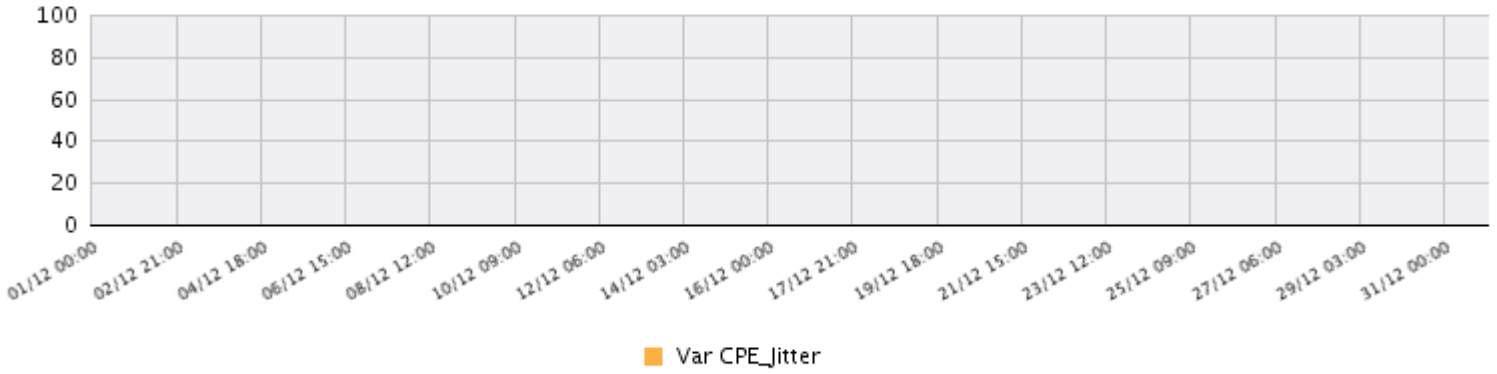
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - ARGENTINA**
Equipo	**ICAO_ARGENTINA**
Modelo	**cisco1921k9**
IP de Gestión	**(172.21.6.193)**
Ciudad	**Ezeiza**

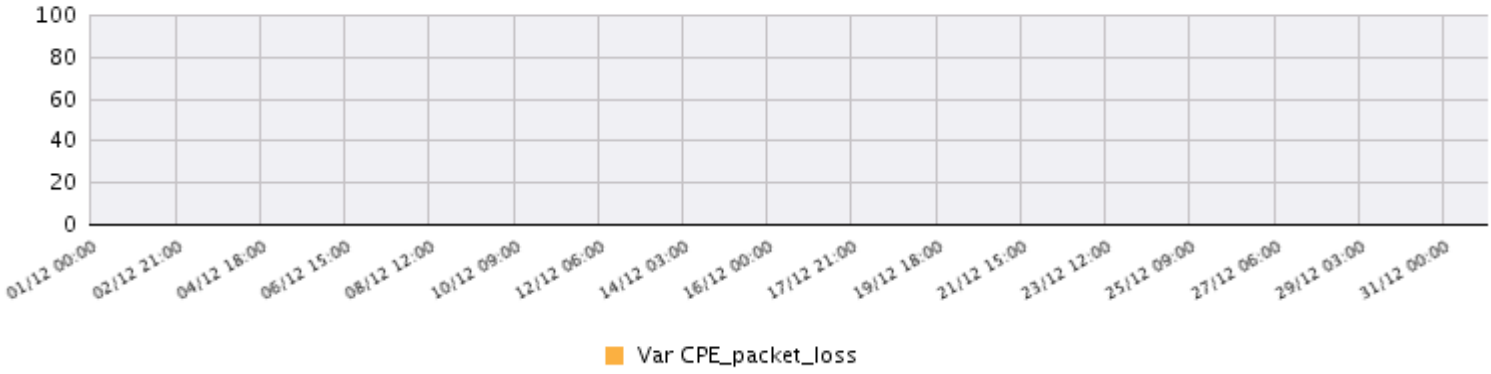
PROM: 0 [ms]



PROM: 0 [ms]



PROM: 0



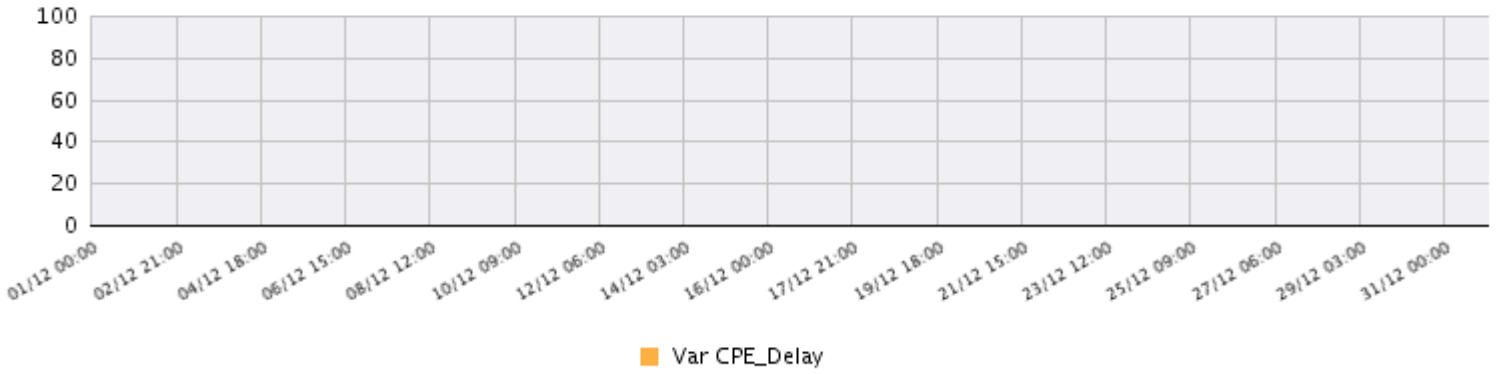
Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

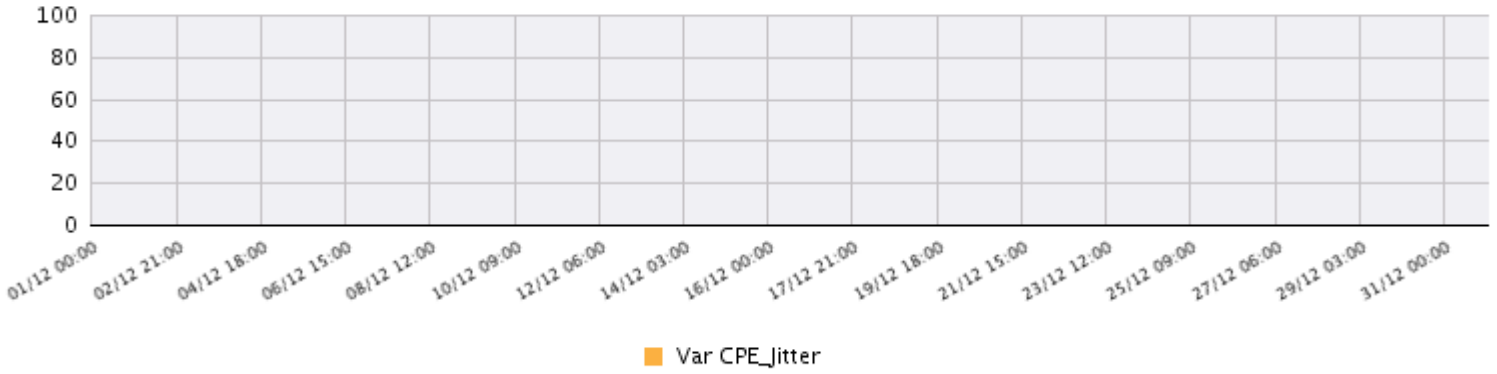
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - BRASIL CURITIBA**
Equipo	**ICAO_CURITIBA**
Modelo	**cisco1921k9**
IP de Gestión	**(172.20.26.63)**
Ciudad	**Curitiba**

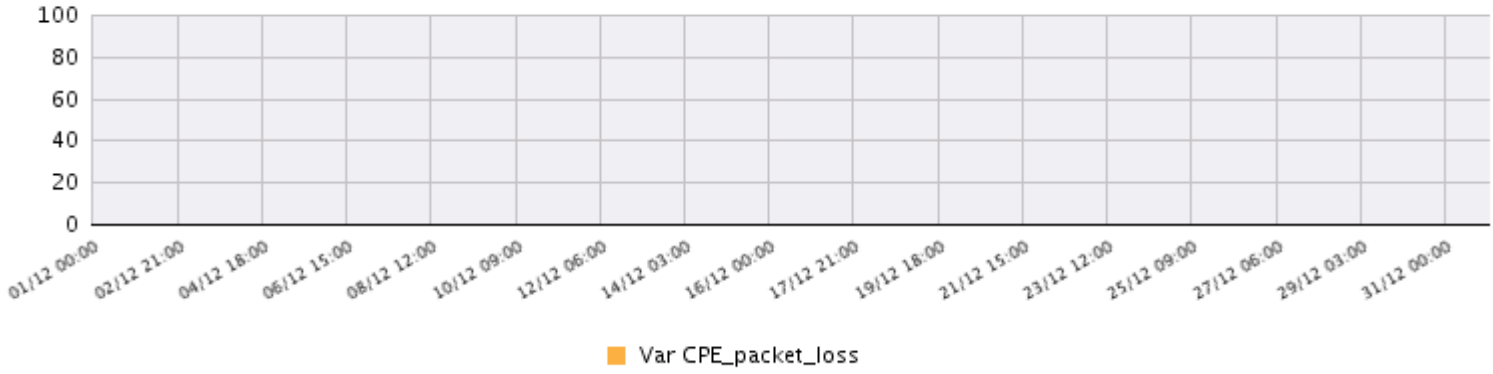
PROM: 0 [ms]



PROM: 0 [ms]



PROM: 0



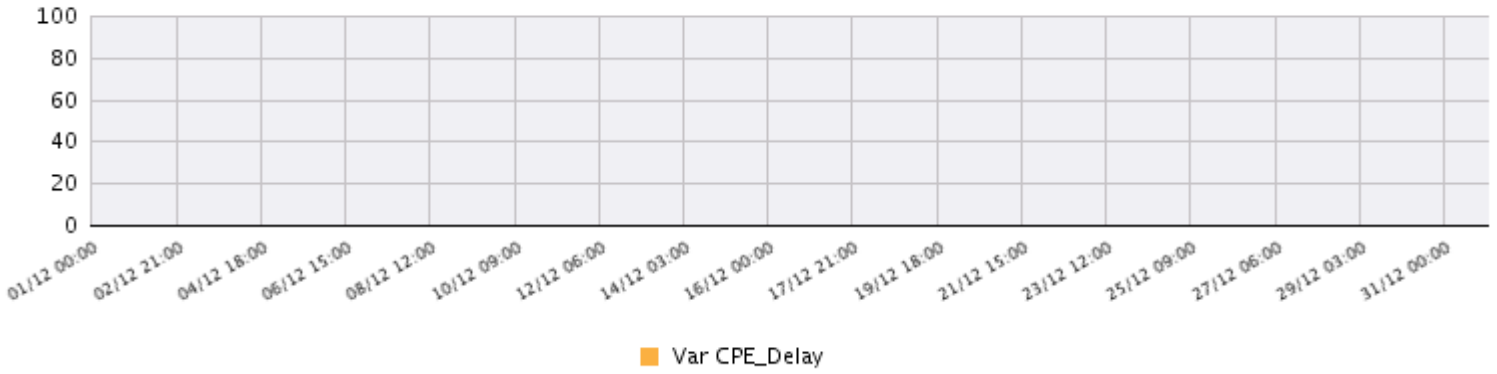
Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

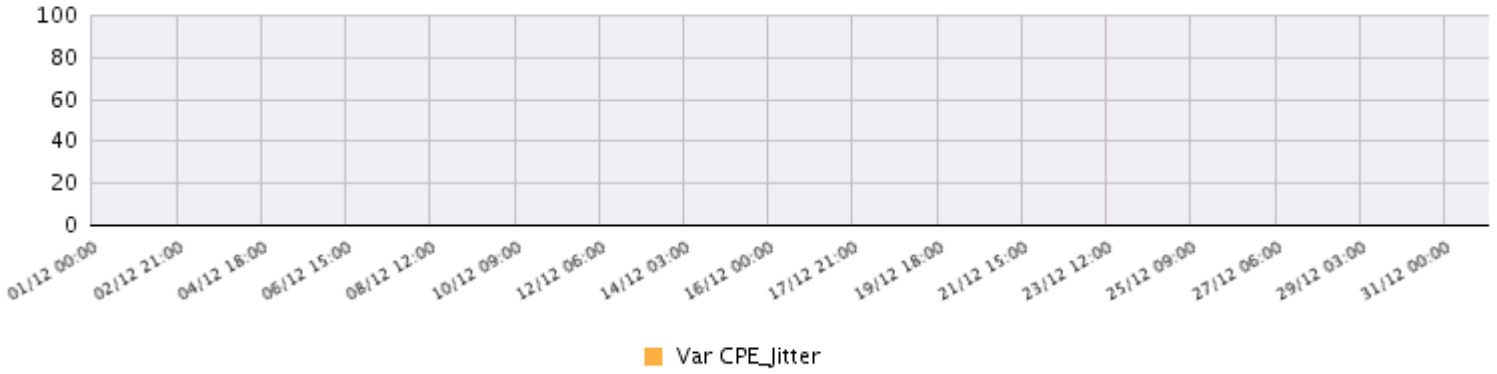
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - CHILE**
Equipo	ICAO_CHILE.yourdomain.com
Modelo	cisco1921k9
IP de Gestión	(172.21.6.197)
Ciudad	Santiago de Chile

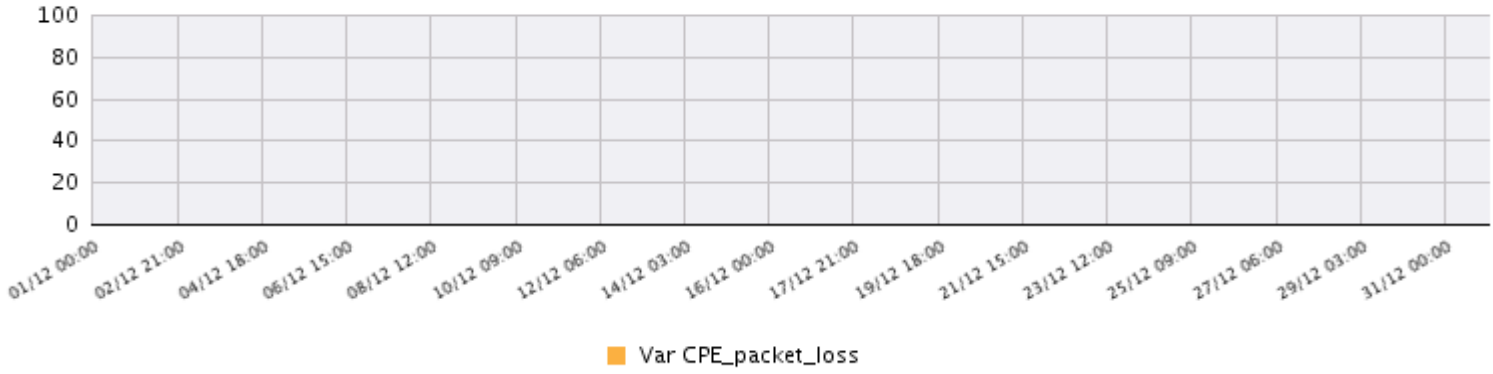
PROM: 0 [ms]



PROM: 0 [ms]



PROM: 0



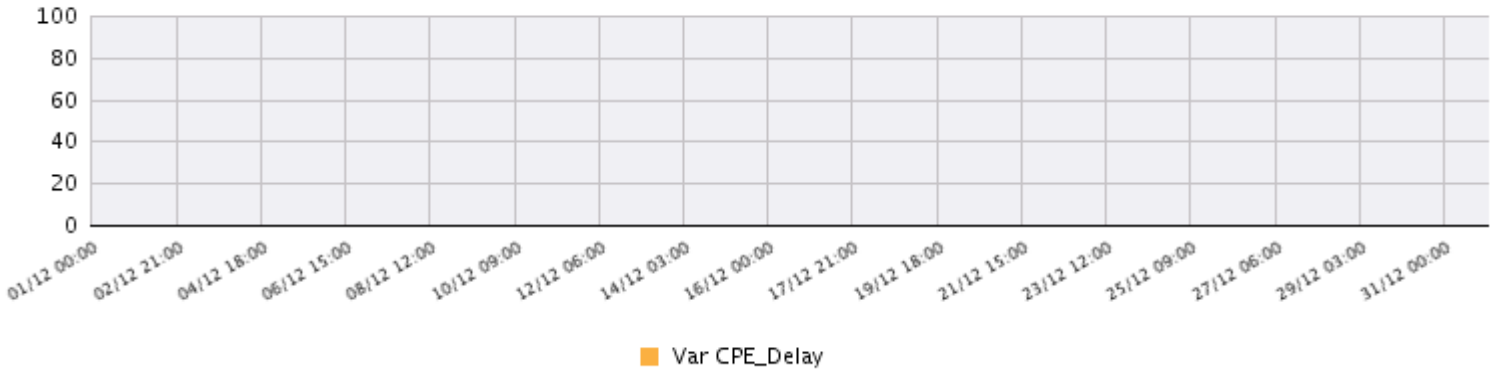
Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

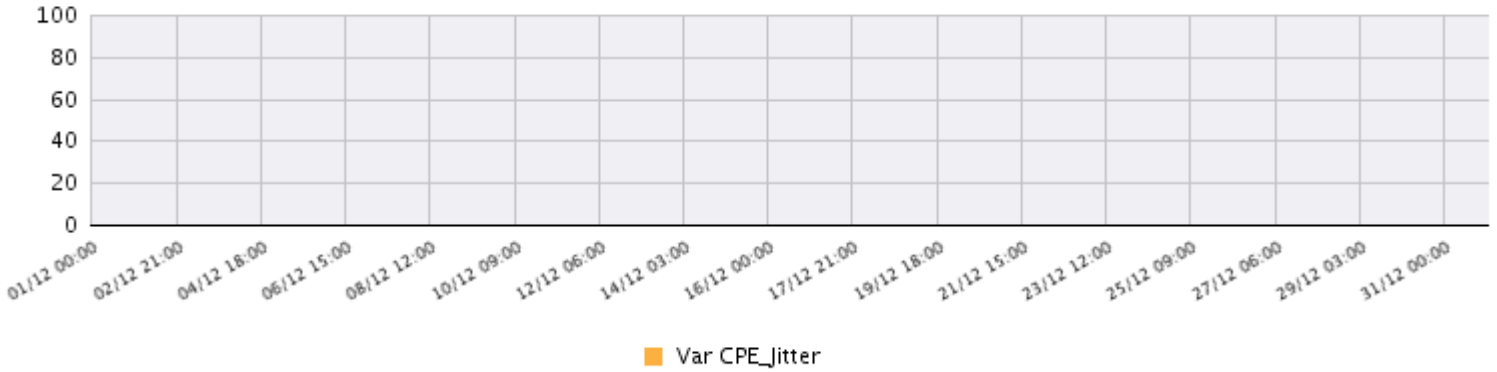
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - COLOMBIA**
Equipo	**ICAO_COLOMBIA**
Modelo	**cisco1921k9**
IP de Gestión	**(172.21.6.196)**
Ciudad	**Bogotá**

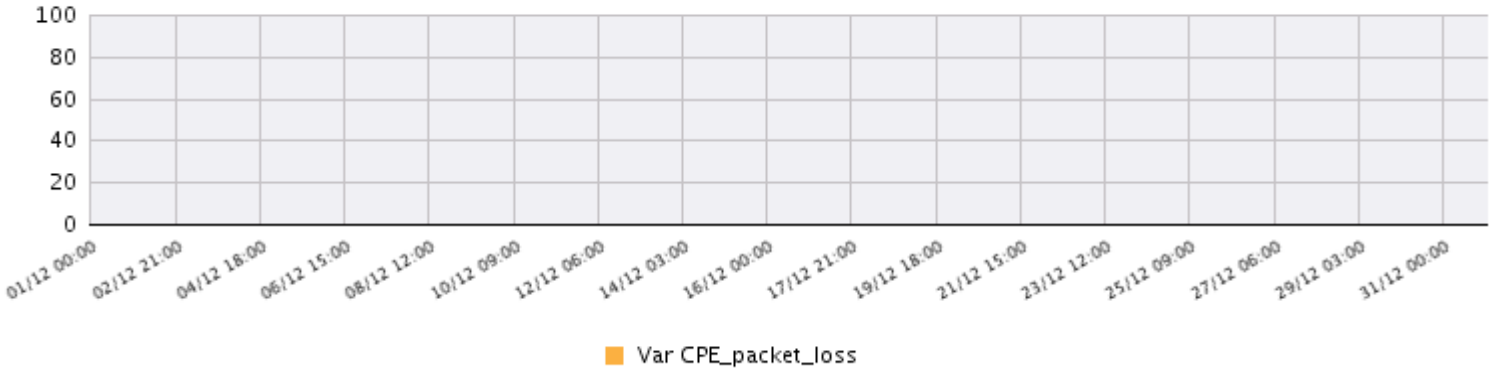
PROM: 0 [ms]



PROM: 0 [ms]



PROM: 0



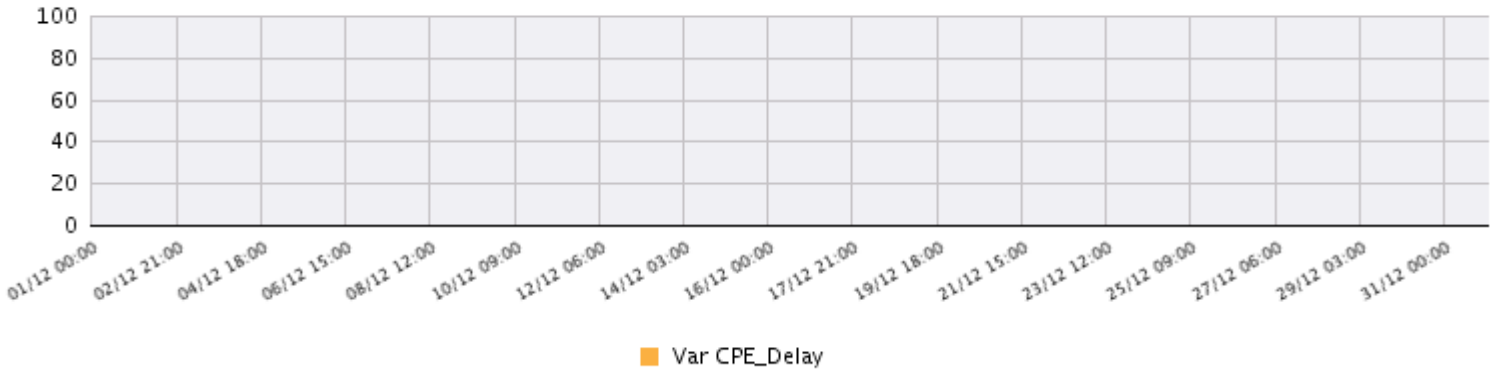
Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

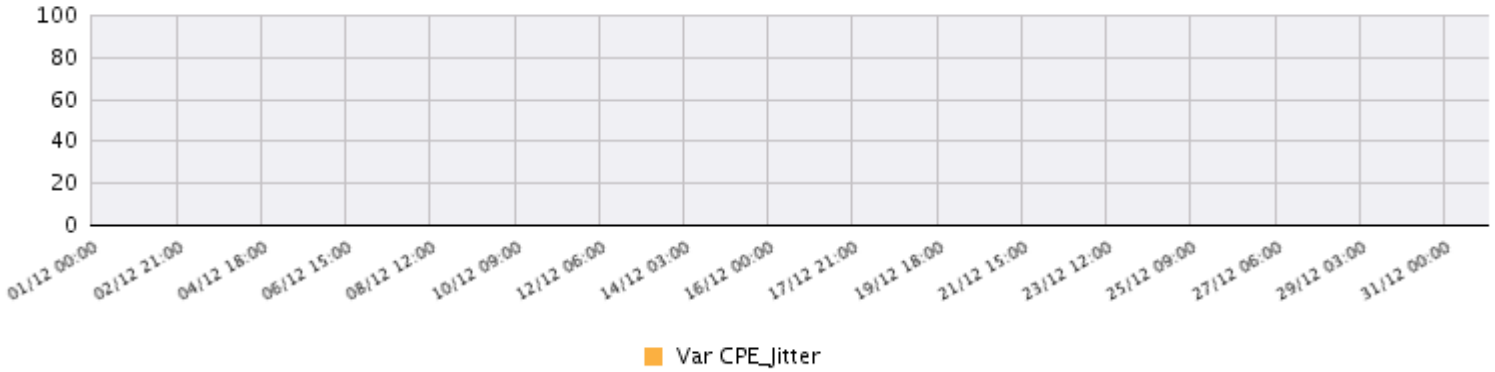
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - ECUADOR**
Equipo	**ICAO_ECUADOR**
Modelo	**cisco1921k9**
IP de Gestión	**(172.21.6.195)**
Ciudad	**Guayaquil**

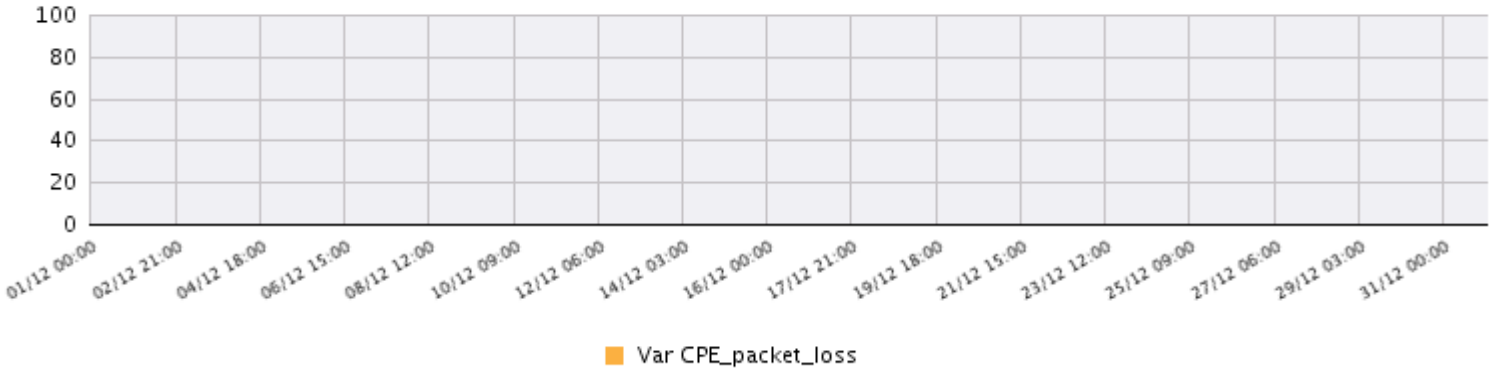
PROM: 0 [ms]



PROM: 0 [ms]



PROM: 0



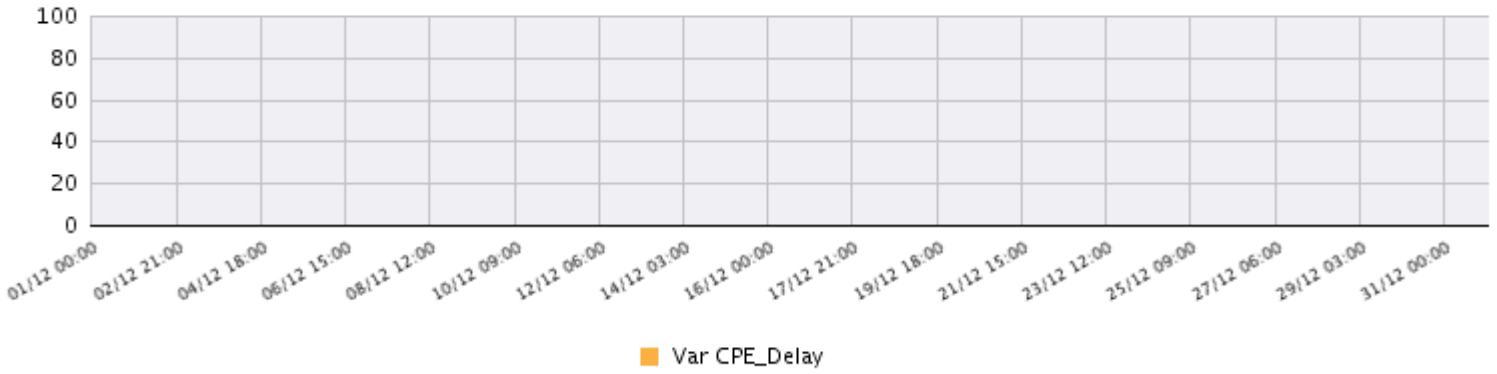
Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

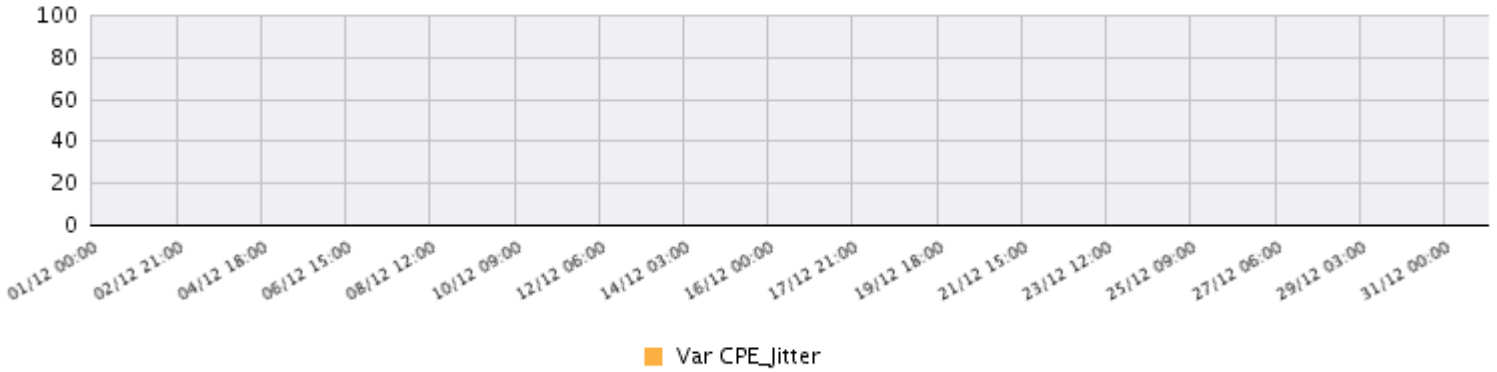
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - TRINIDAD & TOBAGO**
Equipo	ICAO_TRINIDAD.yourdomain.com
Modelo	cisco1921k9
IP de Gestión	(172.21.6.194)
Ciudad	Port of Spain

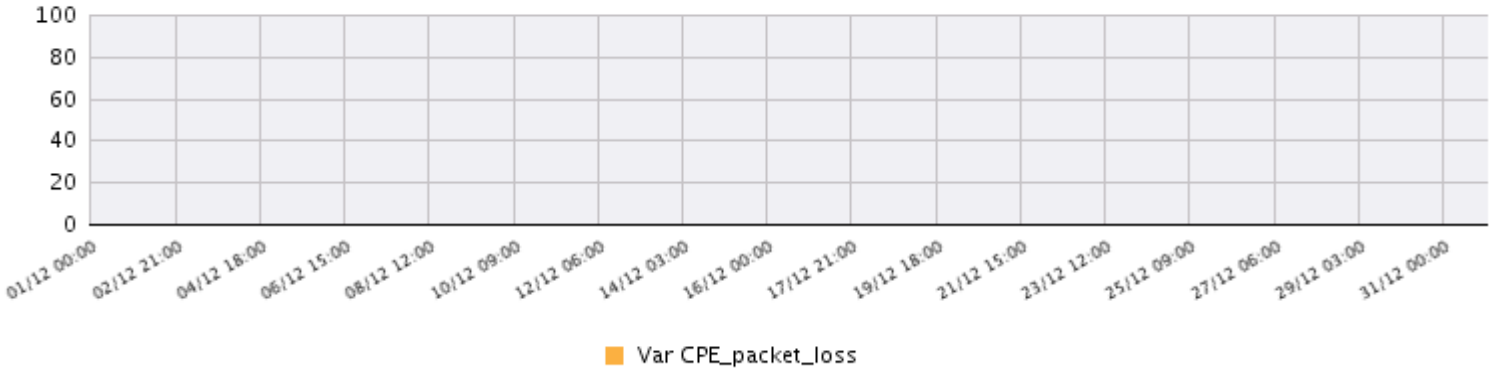
PROM: 0 [ms]



PROM: 0 [ms]



PROM: 0



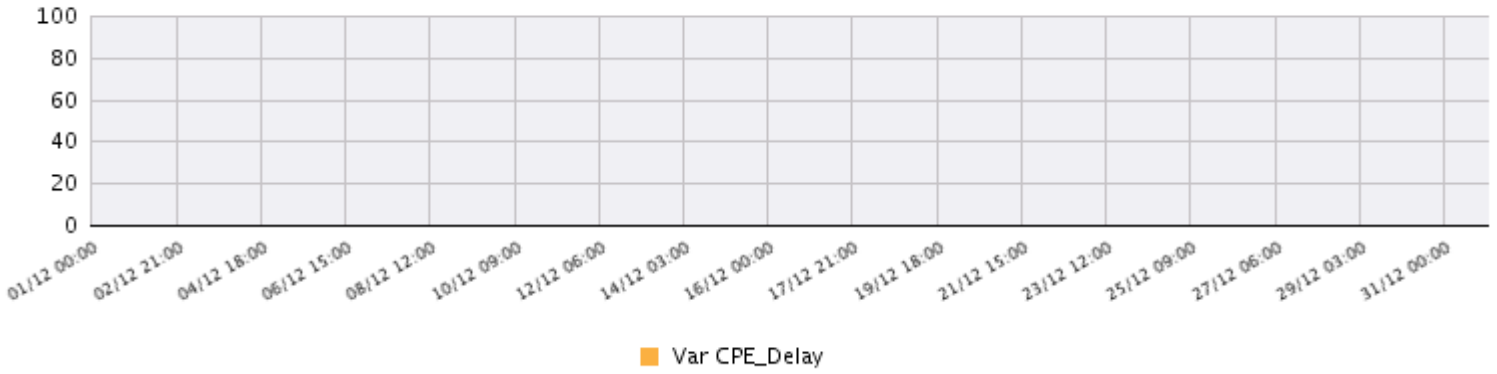
Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

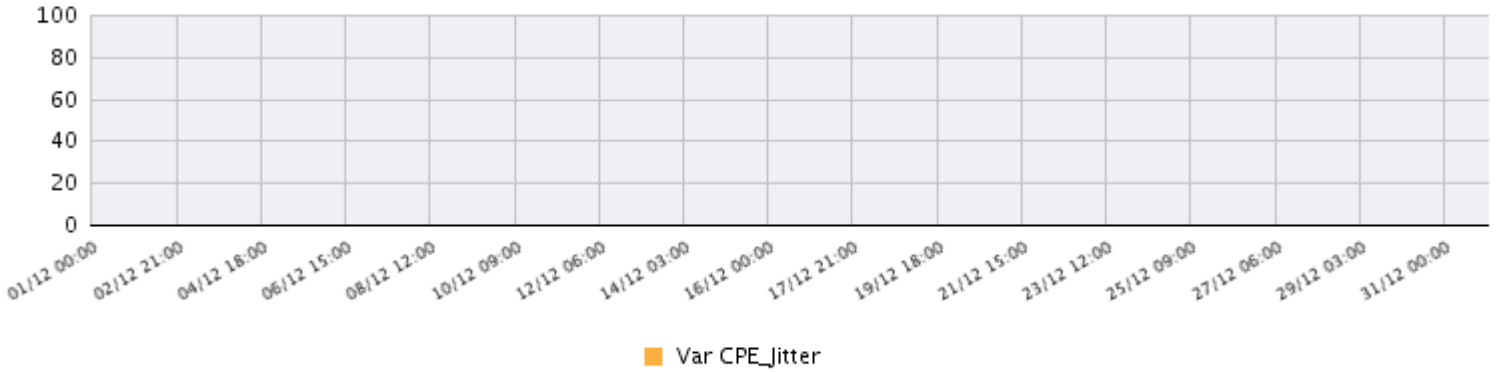
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - URUGUAY**
Equipo	**ICAO_URUGUAY**
Modelo	**cisco1921k9**
IP de Gestión	**(172.21.6.198)**
Ciudad	**Montevideo**

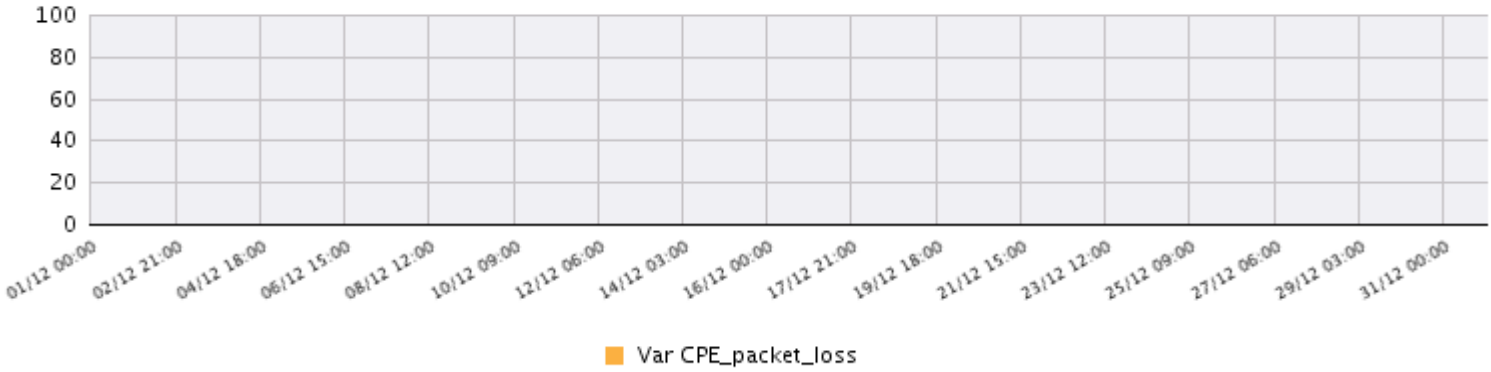
PROM: 0 [ms]



PROM: 0 [ms]



PROM: 0



Reporte de Delay, Jitter y Packet Loss, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS

Connecting and Protecting the Networked World℠

NETWORK MANAGEMENT

NETFLOW

Flujo de Conversación, Aplicaciones y TOS

Level (3) COMMUNICATIONS

Connecting and Protecting
the Networked World

Level (3) COMMUNICATIONS
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1. APLICACIÓN

APPLICATION

Volume(Mbytes)

Level (3) COMMUNICATIONS
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2. DESTINO (TOP 20)

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

3. ORIGEN (TOP 20)

4. QoS

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

4. CONVERSACIONES

NETWORK MANAGEMENT

CAPACIDAD Y RENDIMIENTO

Calidad de Servicio

INTERNATIONAL CIVIL AVIATION ORGANIZATION
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Level (3) COMMUNICATIONS

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Diciembre 2015

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INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

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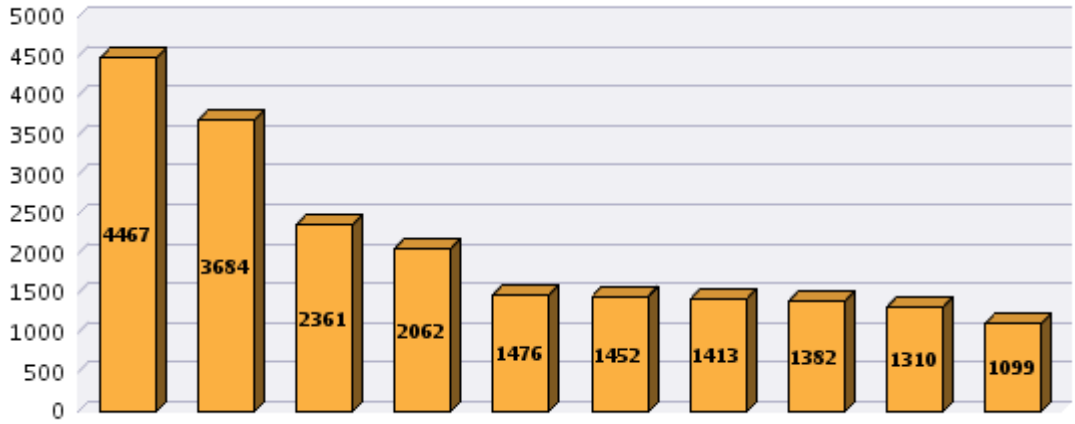
Connecting and Protecting the Networked World℠

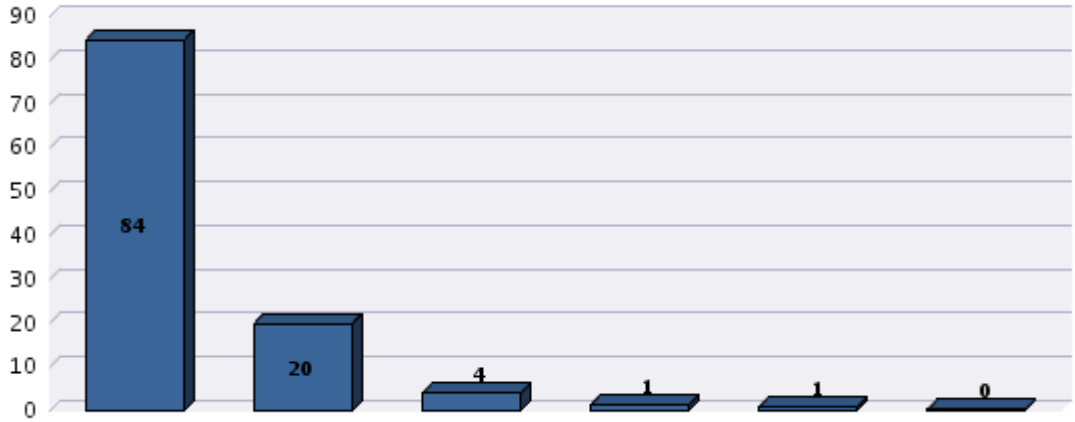
Top Policy (kbps)

OACI - BRASIL MANAUS // ICAO_MANAUSBRASIL // GigabitEthernet0/0	OACI - ECUADOR // ICAO_ECUADOR // GigabitEthernet0/0.1367	OACI - ECUADOR // ICAO_ECUADOR // GigabitEthernet0/1	OACI - LIMA // ICAO_PERU // GigabitEthernet0/0.2428	OACI - ARGENTINA // ICAO_ARGENTINA // GigabitEthernet0/1	OACI - LIMA // ICAO_PERU // GigabitEthernet0/1	OACI - URUGUAY // ICAO_URUGUAY // GigabitEthernet0/1	OACI - CHILE // ICAO_CHILE.yourdomain.com // GigabitEthernet0/0	OACI - TRINIDAD & TOBAGO // ICAO_TRINIDAD.yourdomain.com // GigabitEthernet0/0	OACI - CHILE // ICAO_CHILE.yourdomain.com // GigabitEthernet0/1
4466.92	3684.10	2360.53	2061.52	1475.51	1451.84	1412.58	1382.13	1309.87	1098.57



Top Drop (kbps)

OACI - ECUADOR // ICAO_ECUADOR // GigabitEthernet0/0.1367	OACI - LIMA // ICAO_PERU // GigabitEthernet0/0.2428	OACI - PARAGUAY // ICAO_PARAGUAY.ineo.com.py // GigabitEthernet0/0	OACI - TRINIDAD & TOBAGO // ICAO_TRINIDAD.yourdomain.com // GigabitEthernet0/0	OACI - BRASIL CURITIBA // ICAO_CURITIBA // Multilink1	OACI - CHILE // ICAO_CHILE.yourdomain.com // GigabitEthernet0/0
84.30	19.72	3.70	1.13	0.67	0.04



Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World

Evolución histórica:

				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
OACI - ARGENTINA ICAO_ARGENTINA	172.21.6.193	GigabitEthernet0/0	class-default	723.04	0
			CRITICAL	16.21	0
			No Match	11.72	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	27.52	0
		GigabitEthernet0/1	class-default	1,387.49	0
			CRITICAL	15.65	0
			No Match	44.94	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	27.44	0
OACI - BOLIVIA ICAO_BOLIVIA.tigo.net.bo	172.21.6.204	GigabitEthernet0/0	class-default	515.54	0
			CRITICAL	0.23	0
			No Match	22.2	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	0.82	0
		GigabitEthernet0/1	class-default	889.65	0

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				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_BOLIVIA.tigo.net.bo	172.21.6.204	GigabitEthernet0/1	CRITICAL	0.38	0
			No Match	50.15	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	0.83	0
OACI - BRASIL CURITIBA ICAO_CURITIBA	172.20.26.63	GigabitEthernet0/0	class-default	846.8	0
			CRITICAL	7.21	0
			No Match	28.92	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	4.37	0
		Multilink1	class-default	441.06	0
			CRITICAL	6.29	0
			No Match	14.89	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	3.37	0.67
OACI - BRASIL MANAUS ICAO_MANAUSBRASIL	172.21.6.192	GigabitEthernet0/0	class-default	4,227.09	0
			CRITICAL	17.65	0
			No Match	176	0

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INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
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				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_MANAUSBRASIL	172.21.6.192	GigabitEthernet0/0	PRIORITY	0	0
			VIDEO	0	0
			VOZ	46.19	0
OACI - BRASIL RECIFE ICAO_RECIFE	172.20.26.62	GigabitEthernet0/0	class-default	859.76	0
			CRITICAL	8.02	0
			No Match	42.92	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	7.82	0
		Multilink1	class-default	477.4	0
			CRITICAL	6.98	0
			No Match	16.08	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	7.04	0
OACI - CHILE ICAO_CHILE.yourdomain.com	172.21.6.197	GigabitEthernet0/0	class-default	1,328.03	0.02
			CRITICAL	4.21	0
			No Match	42.58	0
			PRIORITY	0	0
			VIDEO	0	0

Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_CHILE.yourdomain.com	172.21.6.197	GigabitEthernet0/0	VOZ	7.31	0.02
		GigabitEthernet0/1	class-default	1,049.31	0
			CRITICAL	3.79	0
			No Match	38.21	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	7.26	0
OACI - COLOMBIA ICAO_COLOMBIA	172.21.6.196	GigabitEthernet0/0	class-default	572.59	0
			CRITICAL	2.87	0
			No Match	18.47	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	7.53	0
		GigabitEthernet0/1	class-default	824.58	0
			CRITICAL	2.88	0
			No Match	28.01	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	7.47	0
OACI - ECUADOR ICAO_ECUADOR	172.21.6.195	GigabitEthernet0/0.1367	class-default	3,235.61	43.41

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Connecting and Protecting the Networked World

				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_ECUADOR	172.21.6.195	GigabitEthernet0/0.1367	CRITICAL	87.73	0
			No Match	187.85	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	172.91	40.88
		GigabitEthernet0/1	class-default	1,954.58	0
			CRITICAL	88.7	0
			No Match	108.11	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	209.15	0
OACI - GUYANA ICAO_GUYANA.yourdomain.com	172.21.6.200	GigabitEthernet0/0	class-default	385.18	0
			CRITICAL	0.17	0
			No Match	13.34	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	1.3	0
		GigabitEthernet0/1	class-default	792.28	0
			CRITICAL	8.76	0
			No Match	23.45	0

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				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_GUYANA.yourdomain.com	172.21.6.200	GigabitEthernet0/1	PRIORITY	0	0
			VIDEO	0	0
			VOZ	1.3	0
OACI - GUYANA FRANCESA ICAO_FR_GUYANA.eq.ignetworks.com	172.21.6.201	GigabitEthernet0/0	class-default	255.06	0
			CRITICAL	0.04	0
			No Match	6.12	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	0	0
		GigabitEthernet0/1	class-default	554.13	0
			CRITICAL	0.05	0
			No Match	29.31	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	0	0
OACI - LIMA ICAO_PERU	172.20.26.50	GigabitEthernet0/0.2428	class-default	1,795.08	10.56
			CRITICAL	52.43	0
			No Match	40.54	0
			PRIORITY	0	0
			VIDEO	0	0

Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

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Connecting and Protecting the Networked World℠

				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_PERU	172.20.26.50	GigabitEthernet0/0.2428	VOZ	173.48	9.16
		GigabitEthernet0/1	class-default	1,191.48	0
			CRITICAL	51.98	0
			No Match	30.15	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	178.23	0
OACI - PARAGUAY ICAO_PARAGUAY.ineo.com.py	172.21.6.199	GigabitEthernet0/0	class-default	996.5	1.85
			CRITICAL	1.7	0
			No Match	30.49	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	7.1	1.85
		GigabitEthernet0/1	class-default	1,047.33	0
			CRITICAL	1.74	0
			No Match	34	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	9	0
OACI - SURINAME ICAO_SURINAME.yourdomain.com	172.21.6.203	GigabitEthernet0/0	class-default	364.93	0

Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

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Connecting and Protecting the Networked World

				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_SURINAME.yourdomain.com	172.21.6.203	GigabitEthernet0/0	CRITICAL	0.18	0
			No Match	13.31	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	0.3	0
		GigabitEthernet0/1	class-default	868.9	0
			CRITICAL	0.17	0
			No Match	26.02	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	0.29	0
OACI - TRINIDAD & TOBAGO ICAO_TRINIDAD.yourdomain.com	172.21.6.194	GigabitEthernet0/0	class-default	1,267.57	0.59
			CRITICAL	0.2	0
			No Match	40.17	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	1.93	0.54
		GigabitEthernet0/1	class-default	848.03	0
			CRITICAL	0.21	0
			No Match	26	0

Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

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Connecting and Protecting the Networked World

				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_TRINIDAD.yourdomain.com	172.21.6.194	GigabitEthernet0/1	PRIORITY	0	0
			VIDEO	0	0
			VOZ	2.46	0
OACI - URUGUAY ICAO_URUGUAY	172.21.6.198	GigabitEthernet0/0	class-default	742.14	0
			CRITICAL	35.25	0
			No Match	16.79	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	42.95	0
		GigabitEthernet0/1	class-default	1,274.09	0
			CRITICAL	35.25	0
			No Match	60.22	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	43.01	0
OACI - VENEZUELA ICAO_VENEZUELA	172.21.6.202	GigabitEthernet0/0	class-default	451.95	0
			CRITICAL	3.33	0
			No Match	14.92	0
			PRIORITY	0	0
			VIDEO	0	0

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INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

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Connecting and Protecting the Networked World℠

				Diciembre 2015	
Sede	**Dirección IP**	**Nombre de Interfaz**	**Clase**	**Post Policy (Kbps)**	**Drop (Bytes)**
ICAO_VENEZUELA	172.21.6.202	GigabitEthernet0/0	VOZ	0.86	0
		GigabitEthernet0/1	class-default	741.97	0
			CRITICAL	2.93	0
			No Match	23.85	0
			PRIORITY	0	0
			VIDEO	0	0
			VOZ	0.85	0

Reporte de Calidad de Servicio, Diciembre 2015

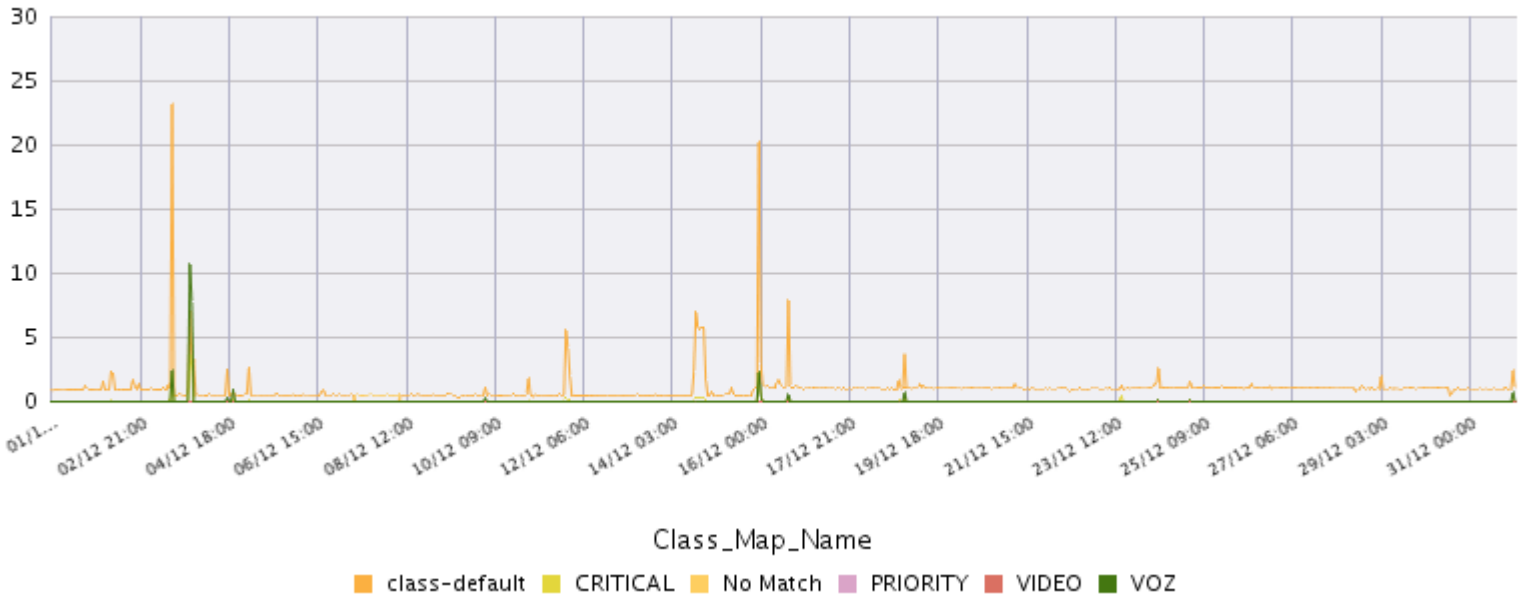
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

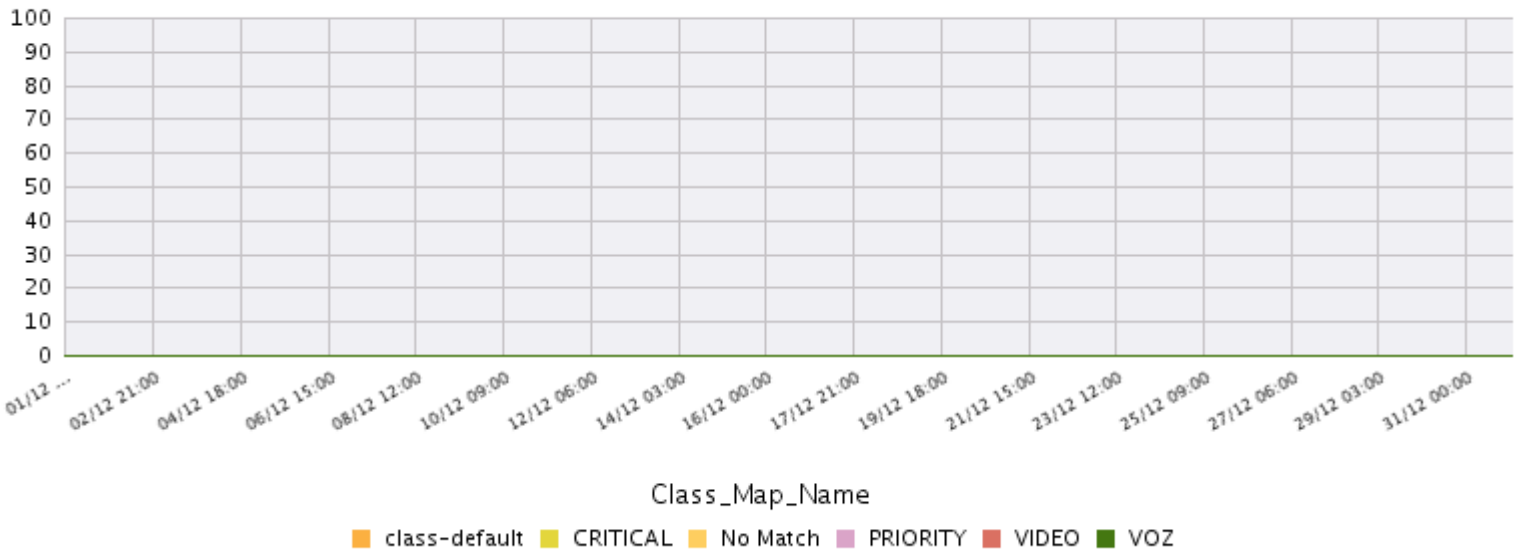
Sede	**OACI - ARGENTINA**
Equipo	**ICAO_ARGENTINA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.193)**
Ciudad	**Ezeiza**

Interface: **GigabitEthernet0/0**

Policy Map (kbps)

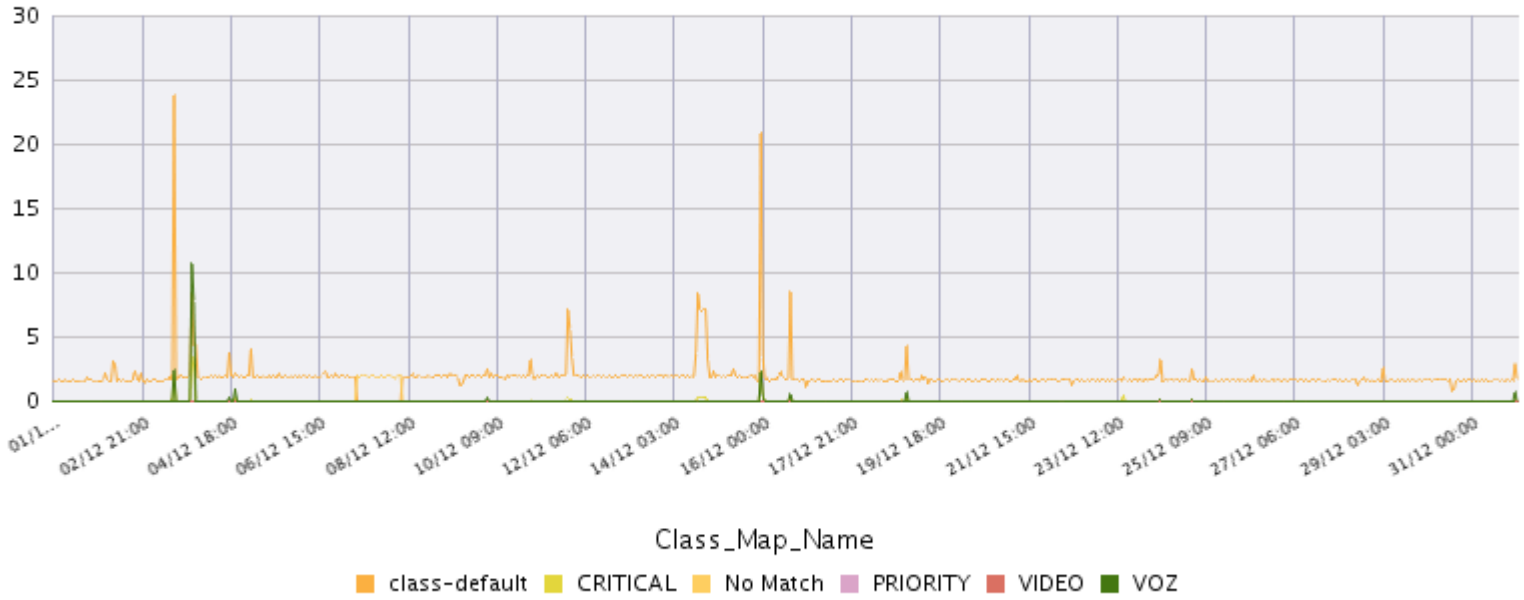


Drops (kbps)

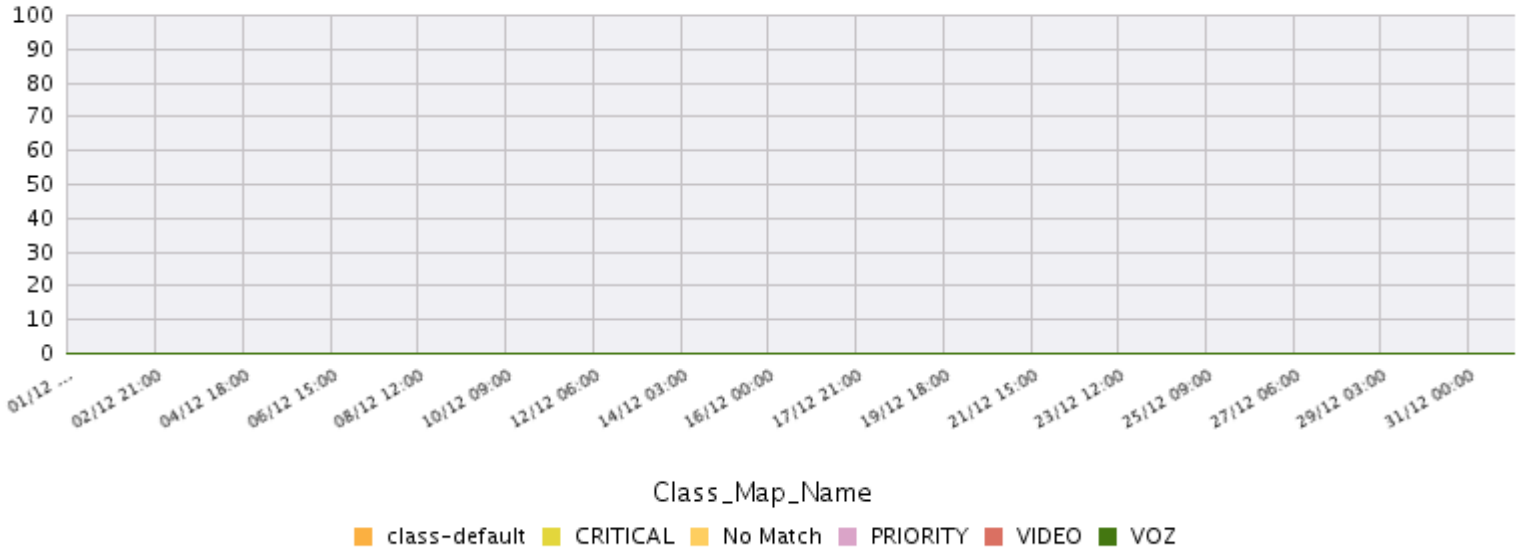


Interface: **GigabitEthernet0/1**

Policy Map (kbps)



Drops (kbps)



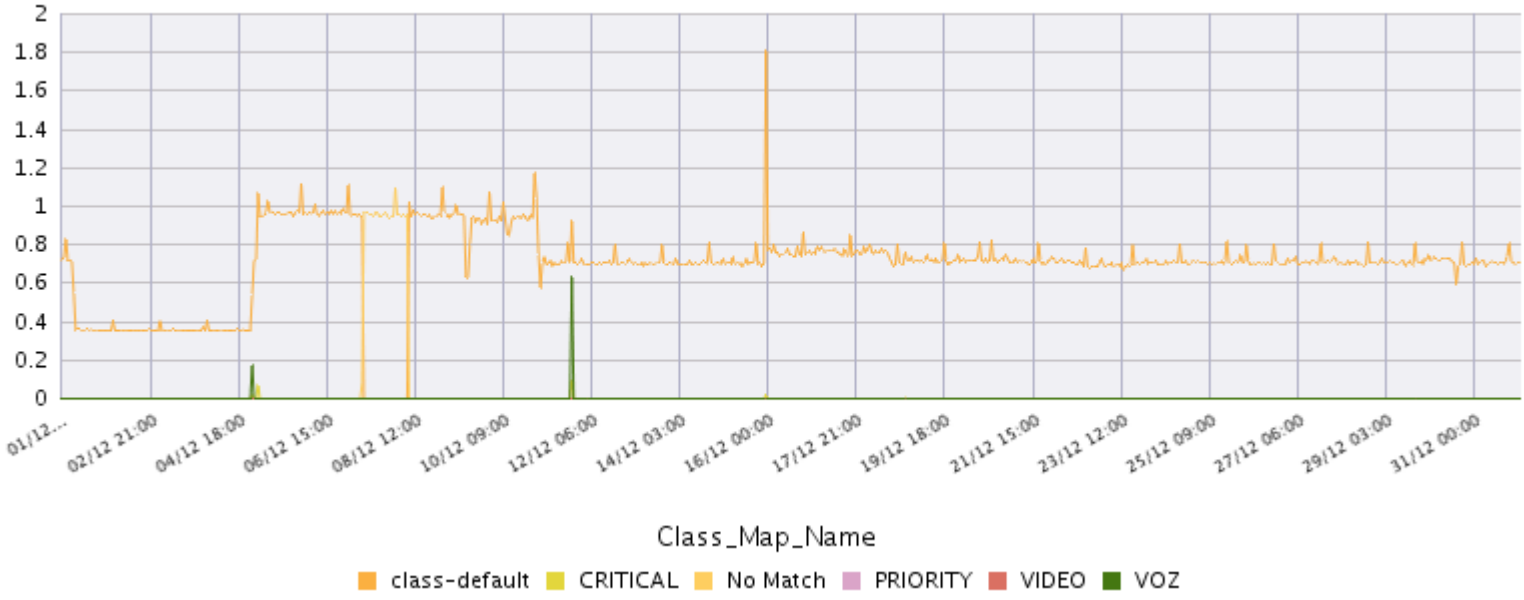
Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level 3 COMMUNICATIONS
Connecting and Protecting the Networked World

Sede	**OACI - BOLIVIA**
Equipo	**ICAO_BOLIVIA.tigo.net.bo**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.204)**
Ciudad	**La Paz**
Interface:	**GigabitEthernet0/0**

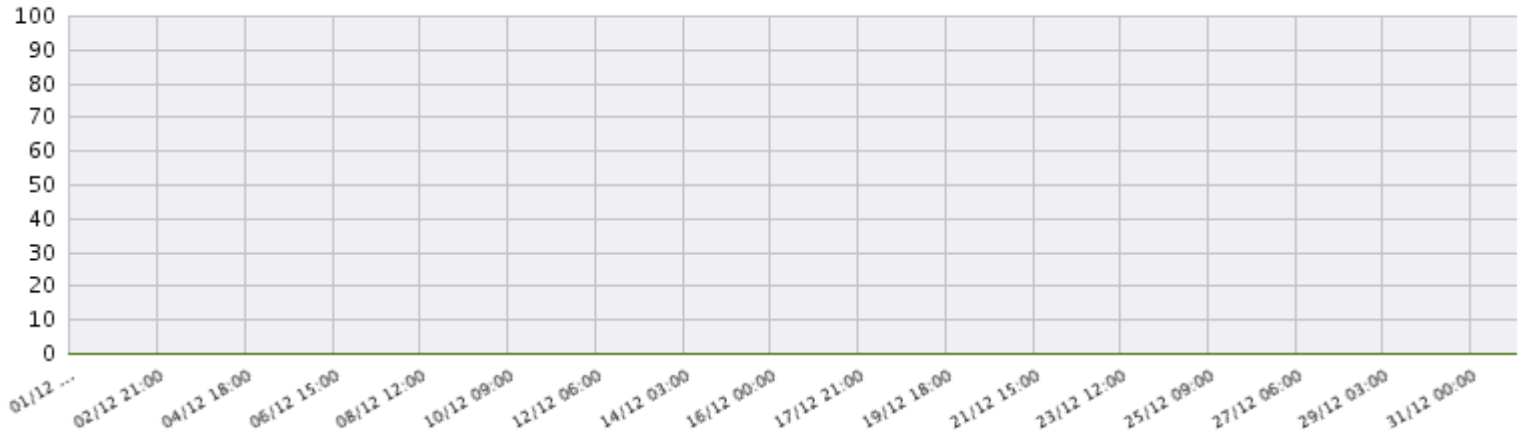
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)

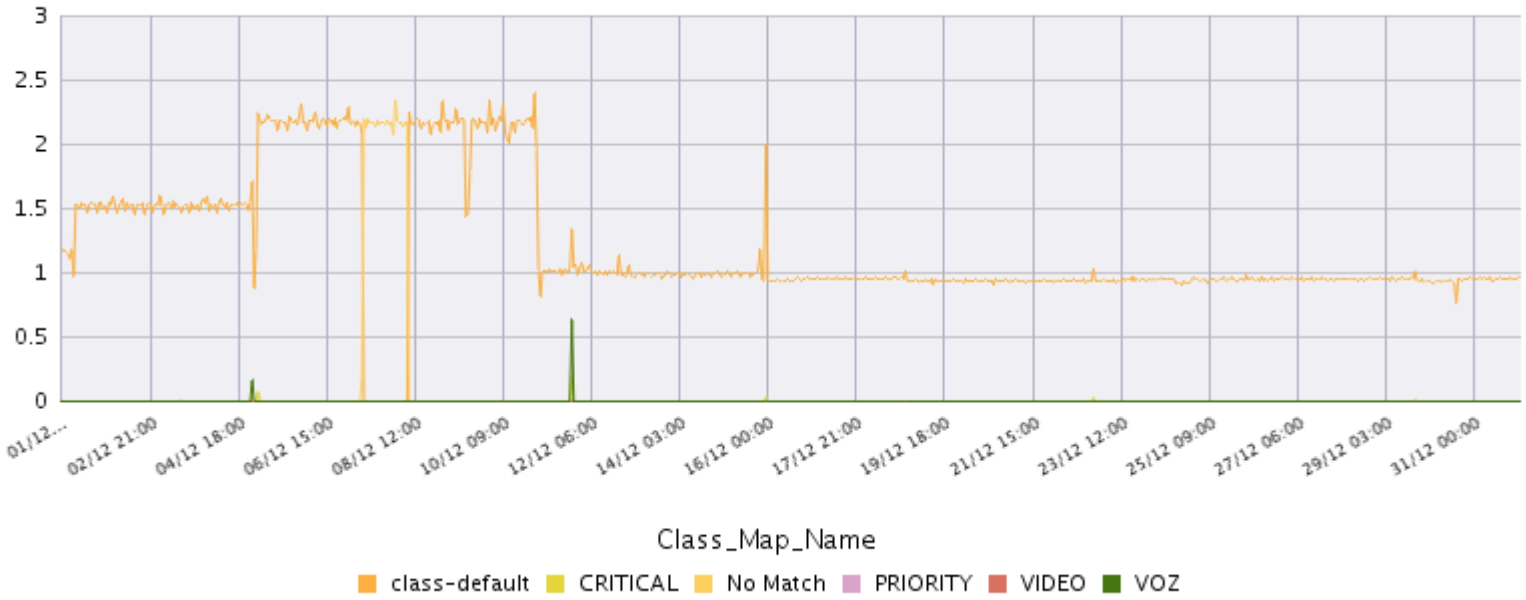


Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Interface: **GigabitEthernet0/1**

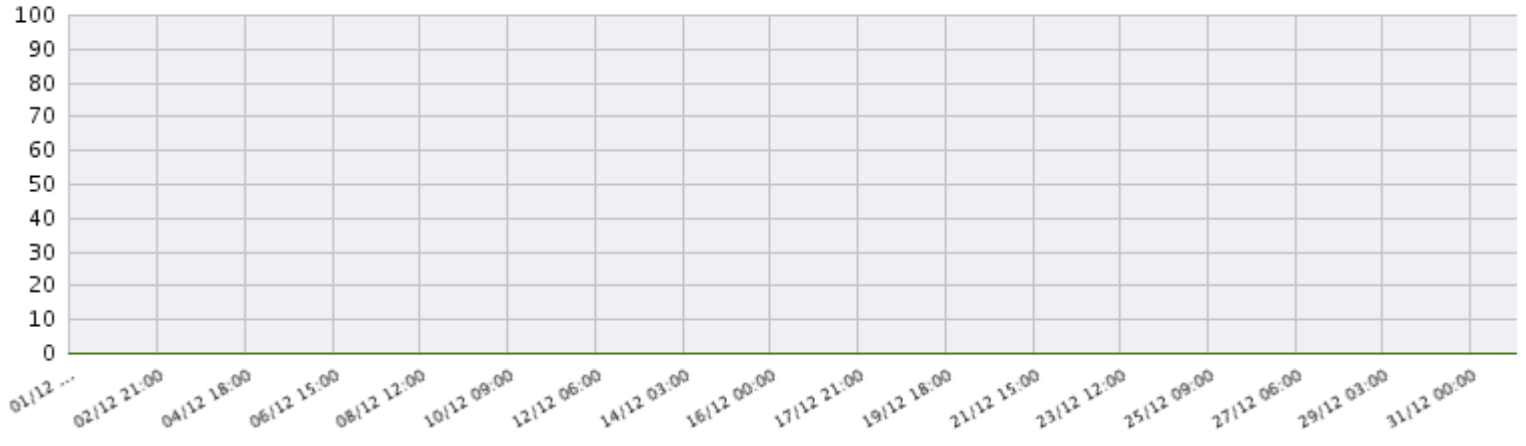
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

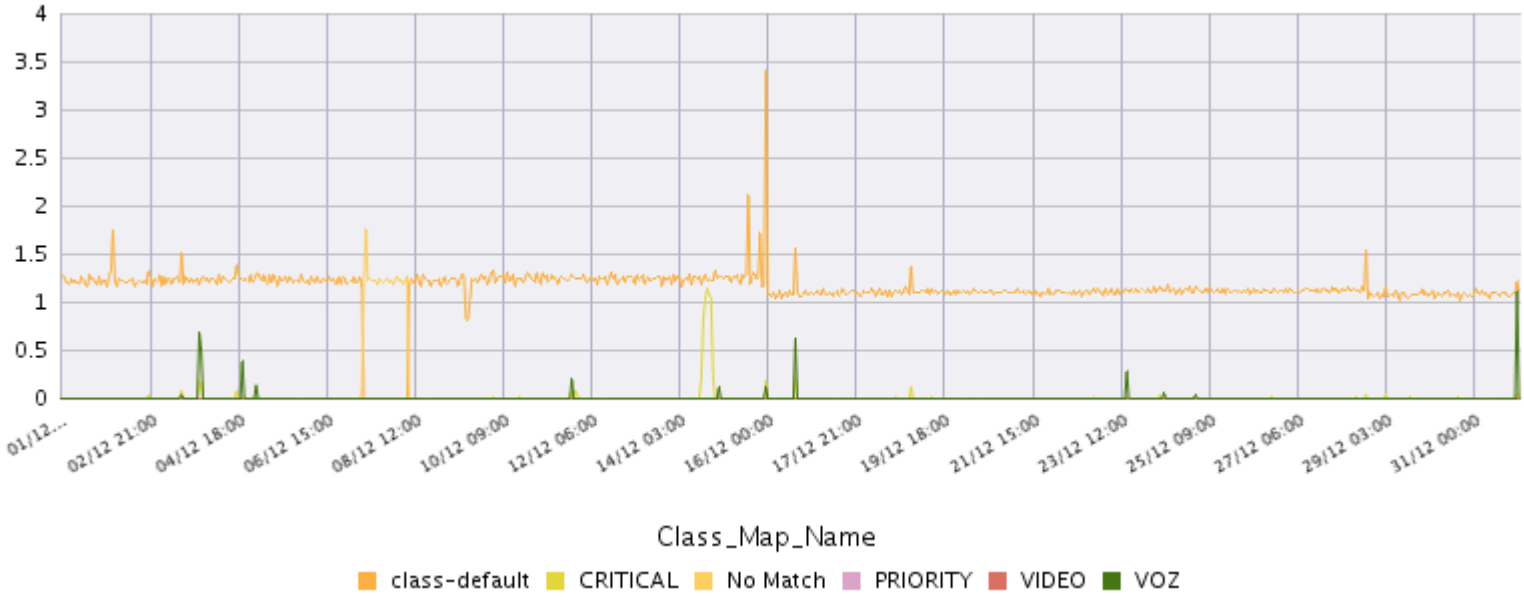
Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

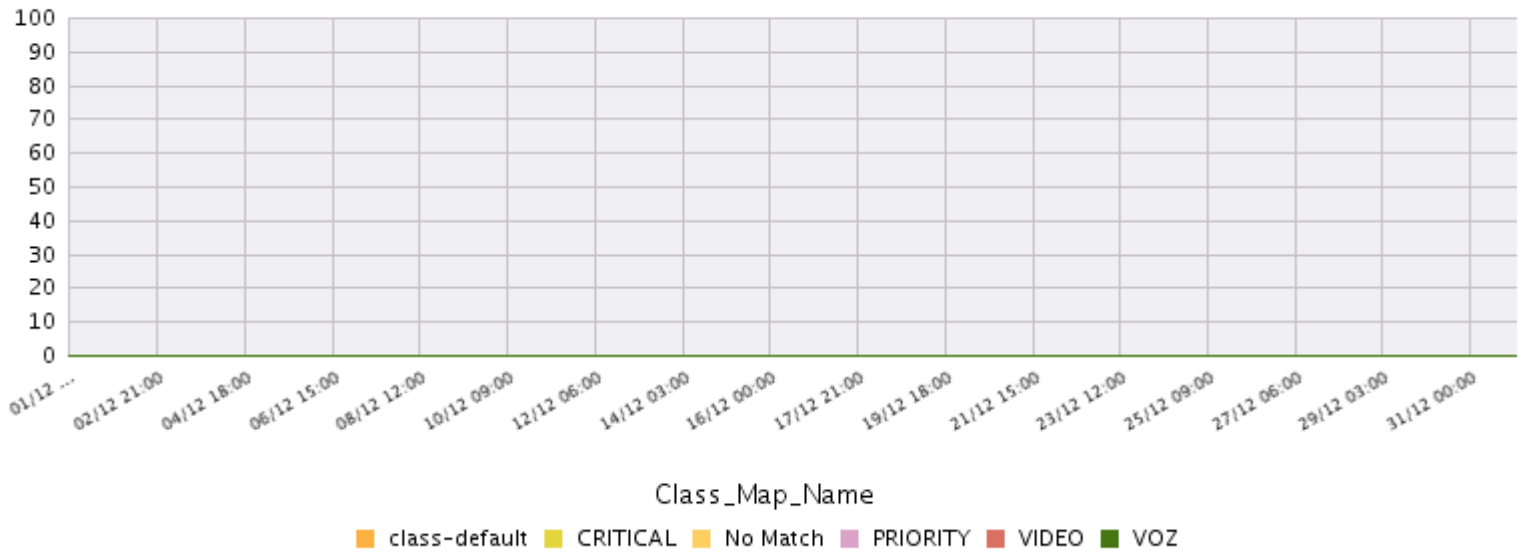
Level 3 COMMUNICATIONS
Connecting and Protecting the Networked World

Sede	**OACI - BRASIL CURITIBA**
Equipo	**ICAO_CURITIBA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.20.26.63)**
Ciudad	**Curitiba**
Interface:	**GigabitEthernet0/0**

Policy Map (kbps)

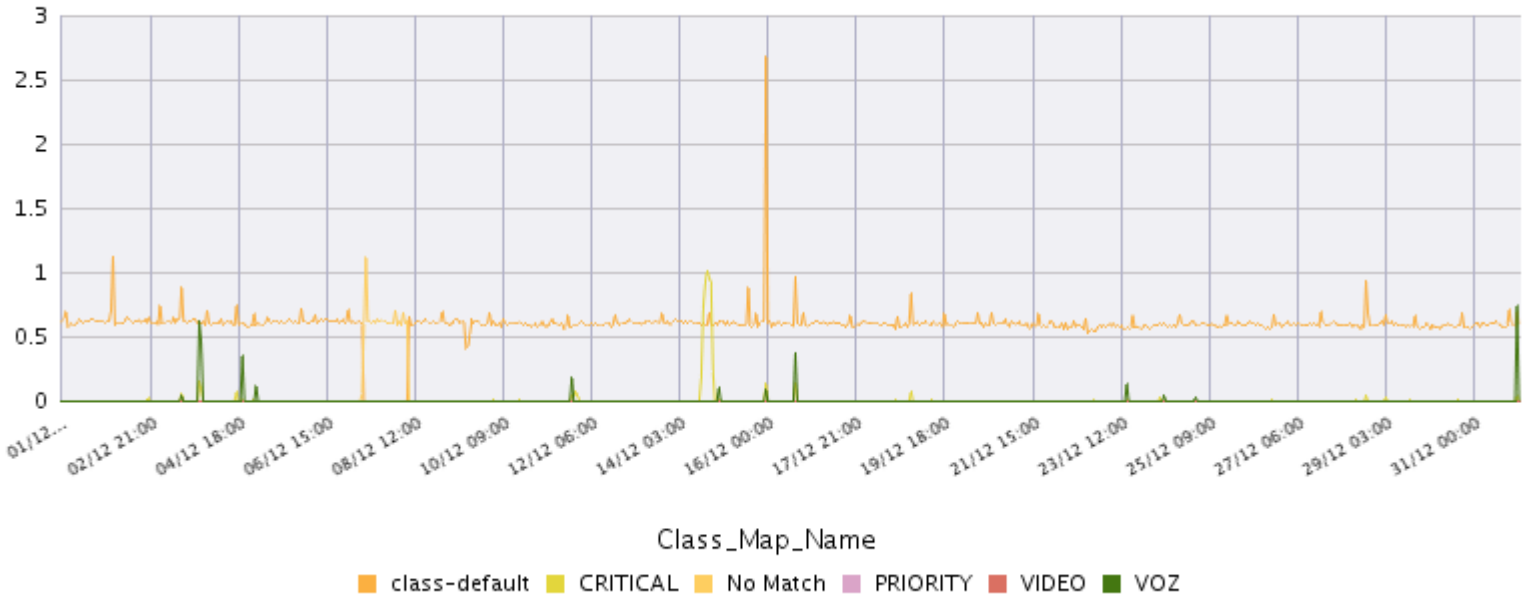


Drops (kbps)



Interface: **Multilink1**

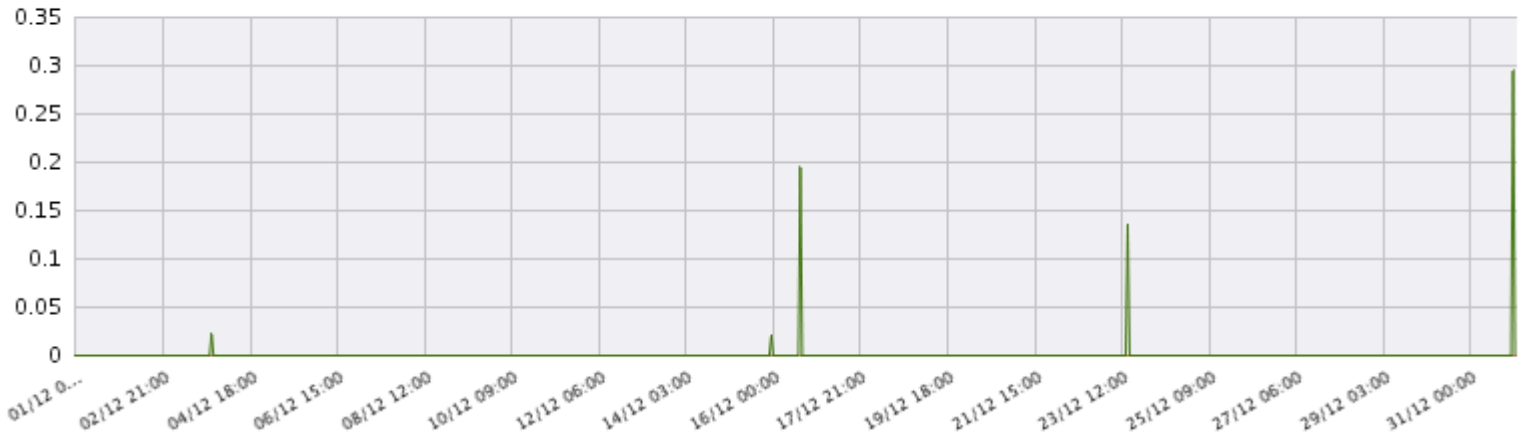
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)

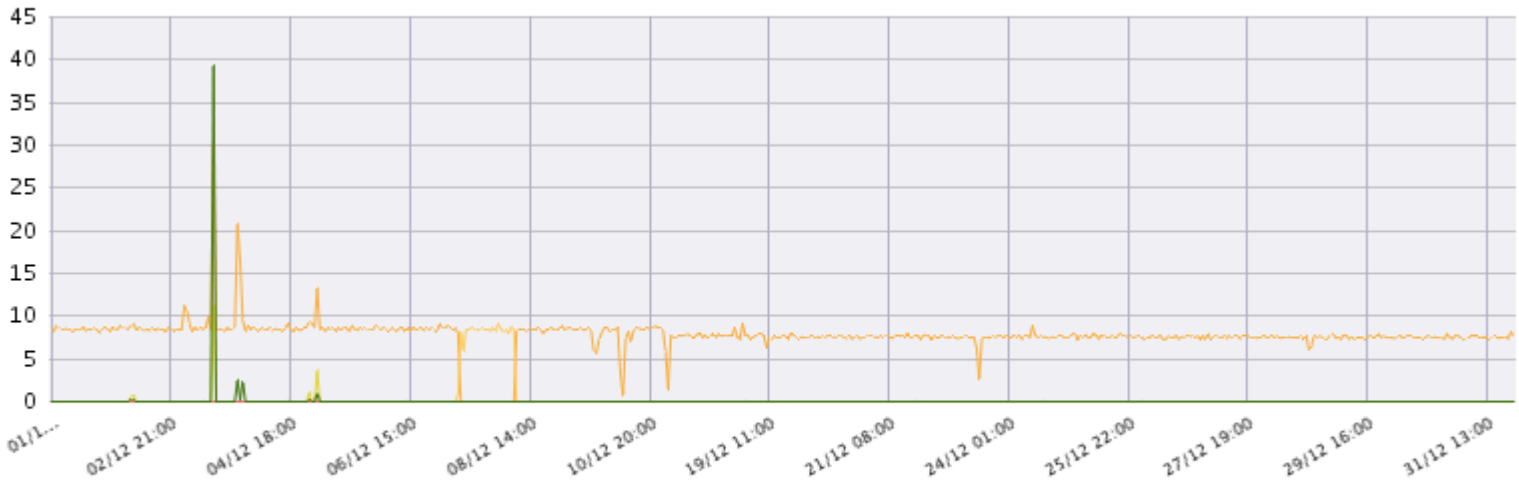


Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Sede	**OACI - BRASIL MANAUS**
Equipo	**ICAO_MANAUSBRASIL**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.192)**
Ciudad	**Manaus**
Interface:	**GigabitEthernet0/0**

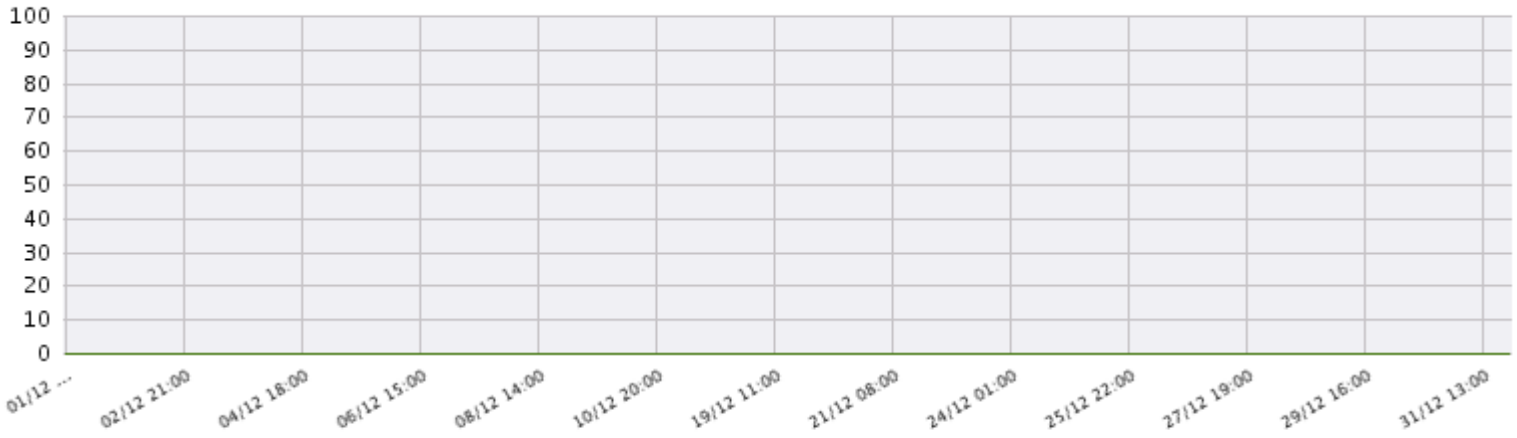
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



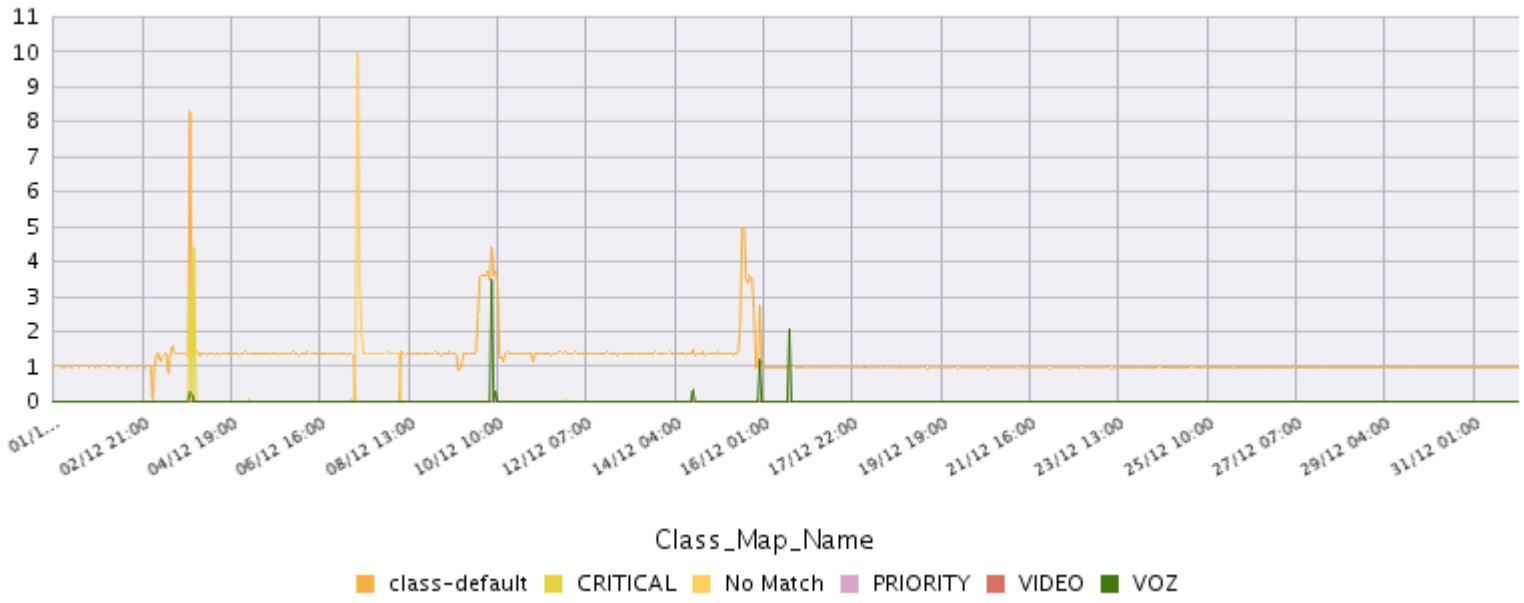
Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

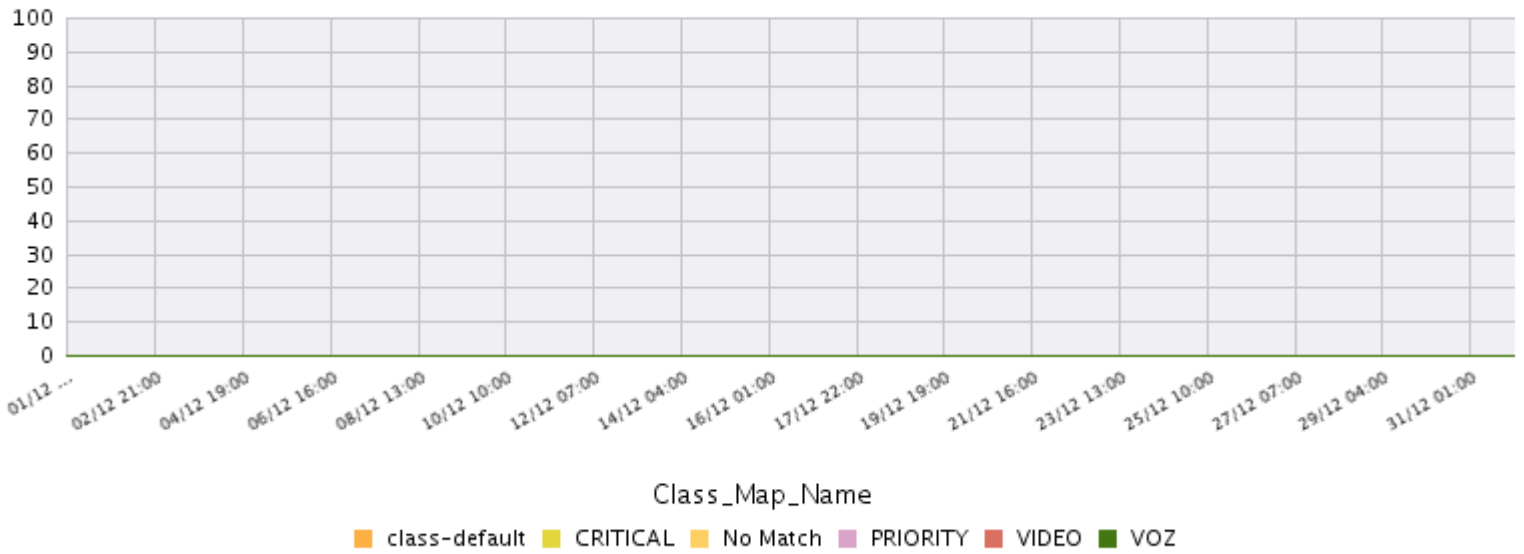
Sede	**OACI - BRASIL RECIFE**
Equipo	**ICAO_RECIFE**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.20.26.62)**
Ciudad	**Recife**

Interface: **GigabitEthernet0/0**

Policy Map (kbps)

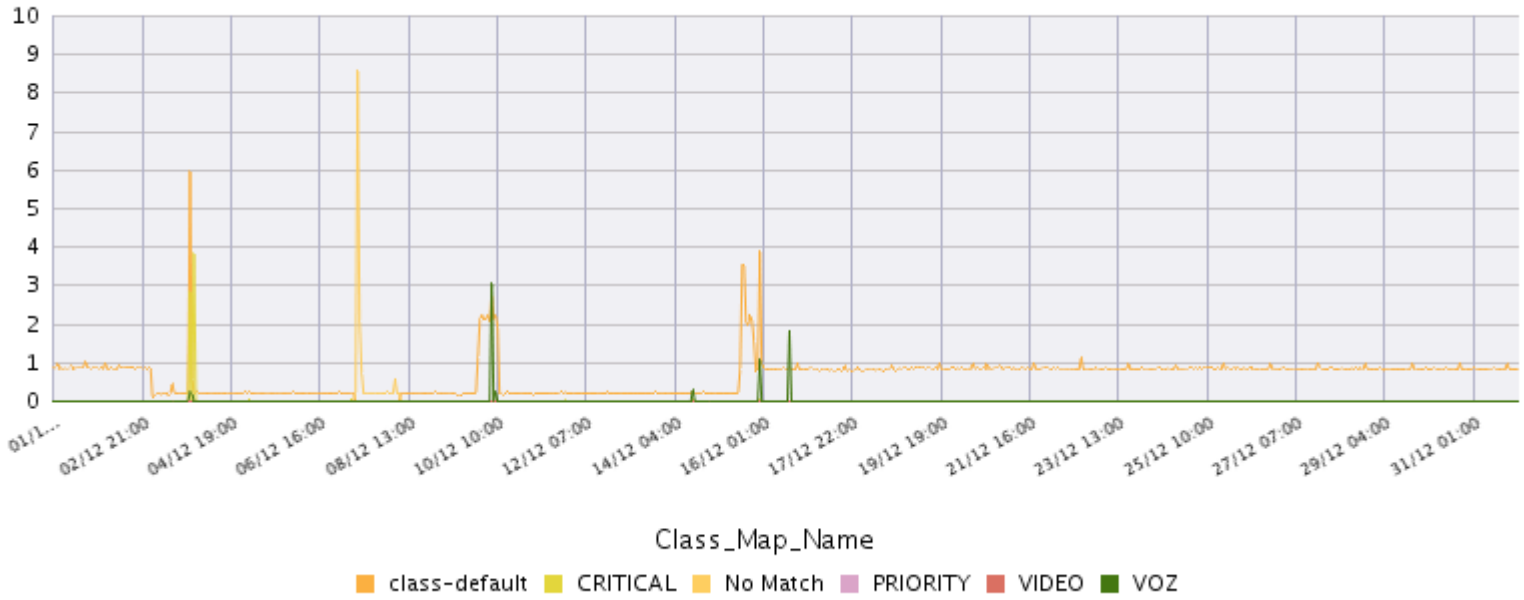


Drops (kbps)



Interface: **Multilink1**

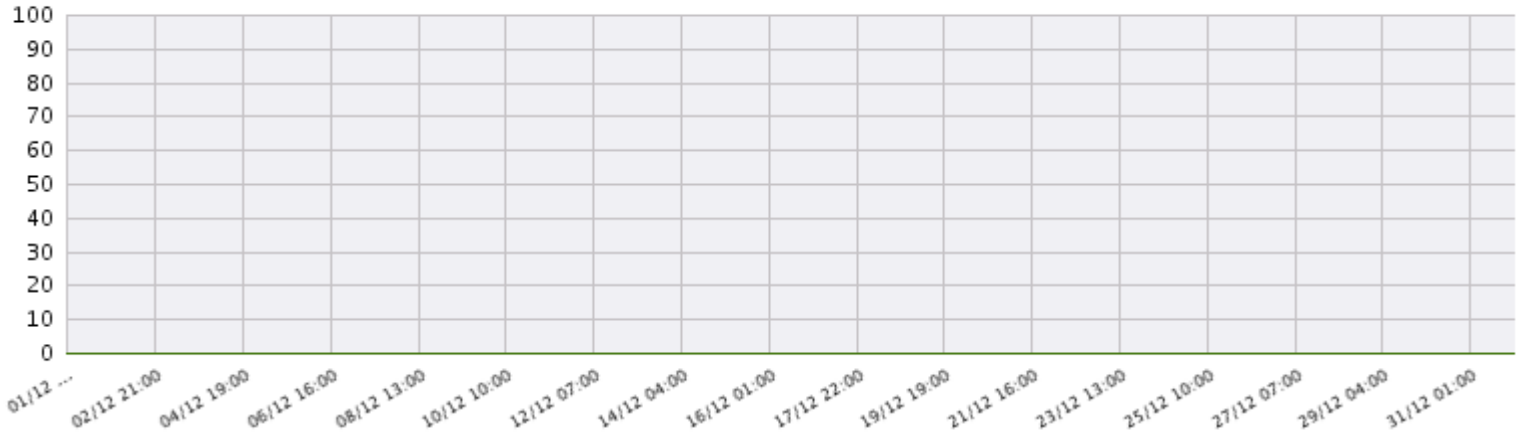
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

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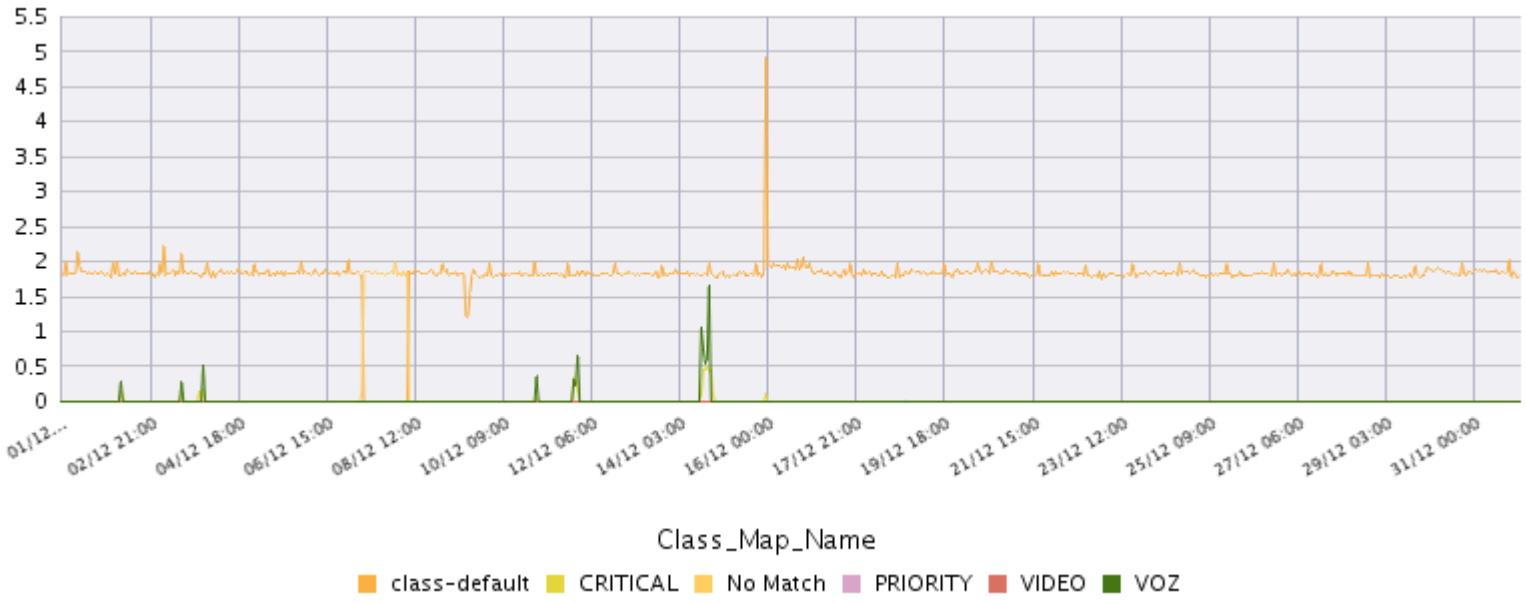
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - CHILE**
Equipo	**ICAO_CHILE.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.197)**
Ciudad	**Santiago de Chile**

Interface: **GigabitEthernet0/0**

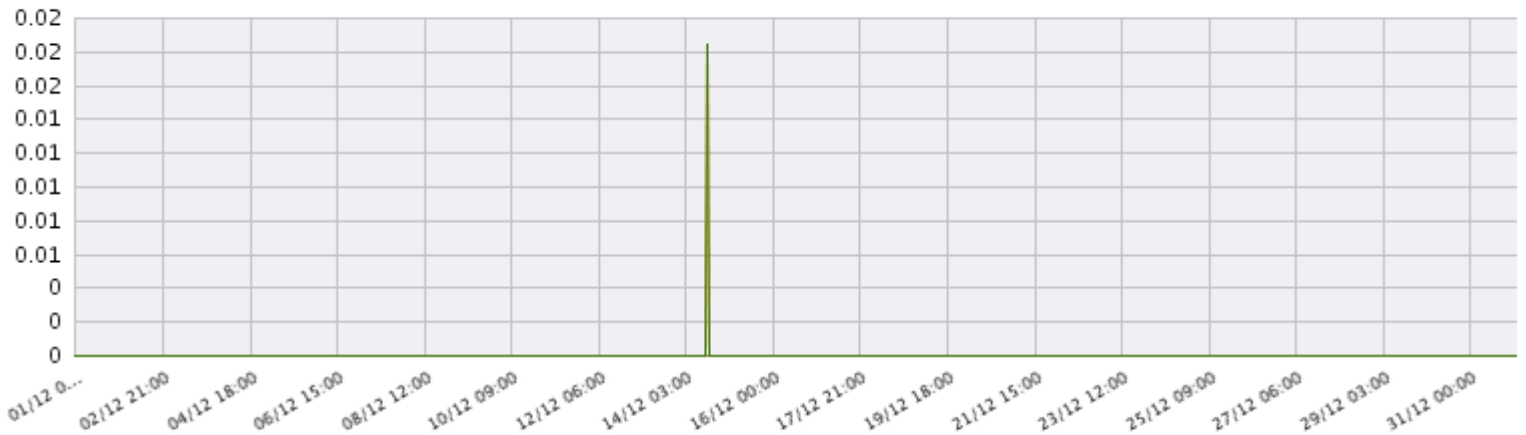
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)

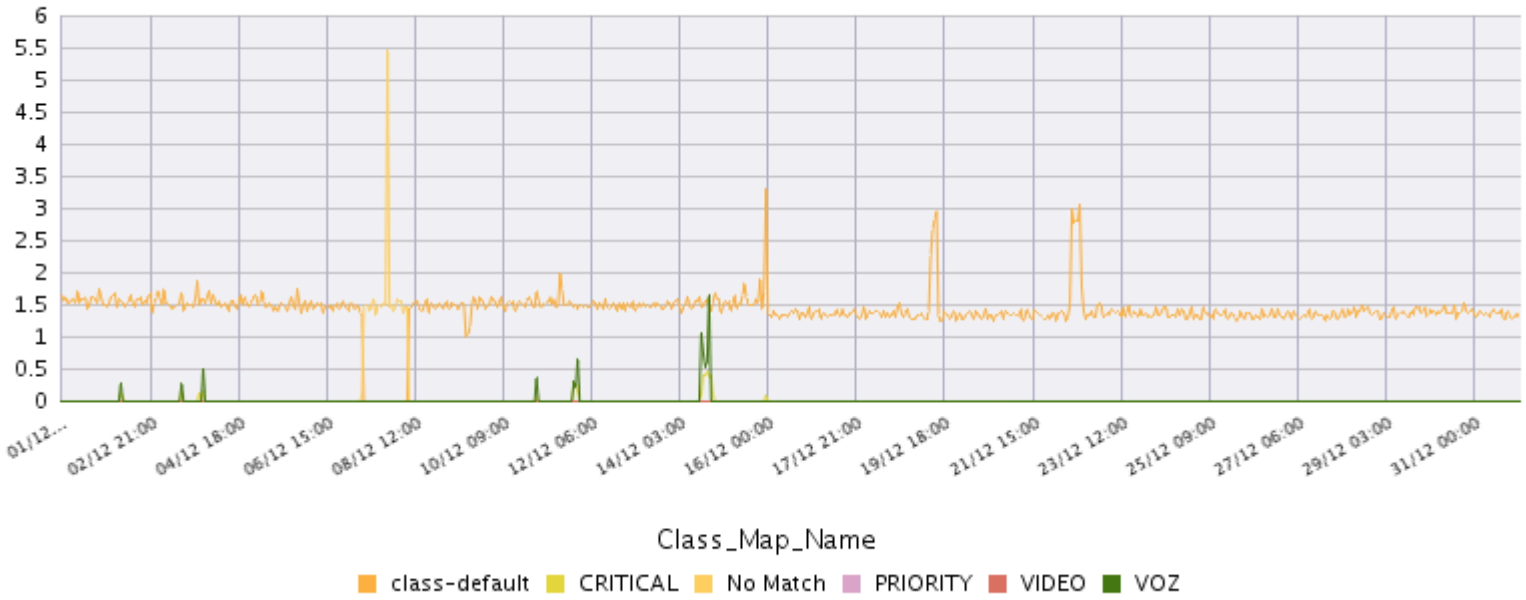


Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Interface: **GigabitEthernet0/1**

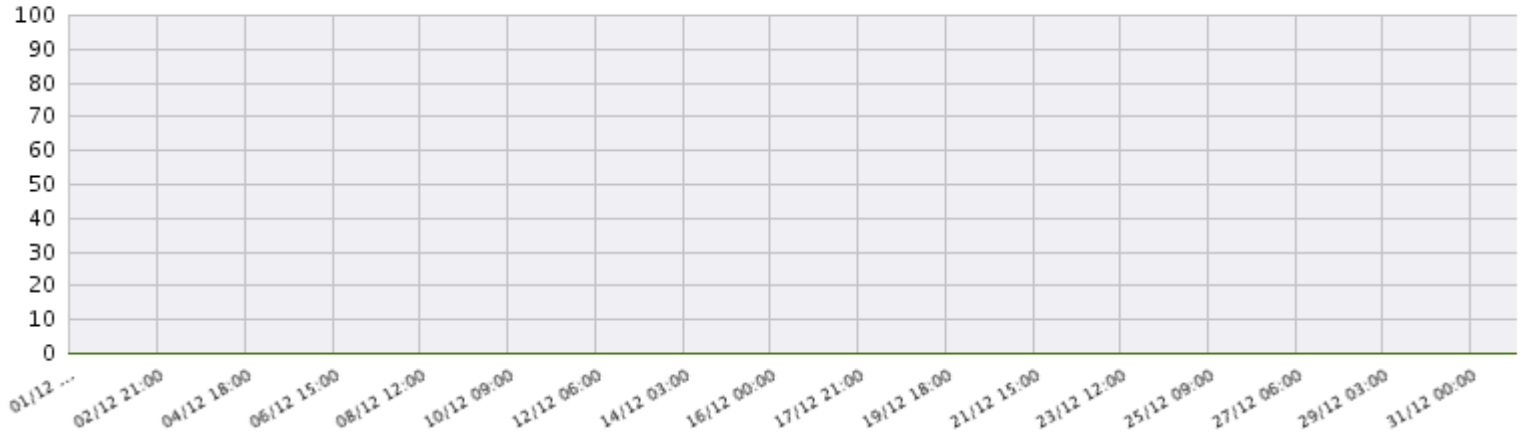
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



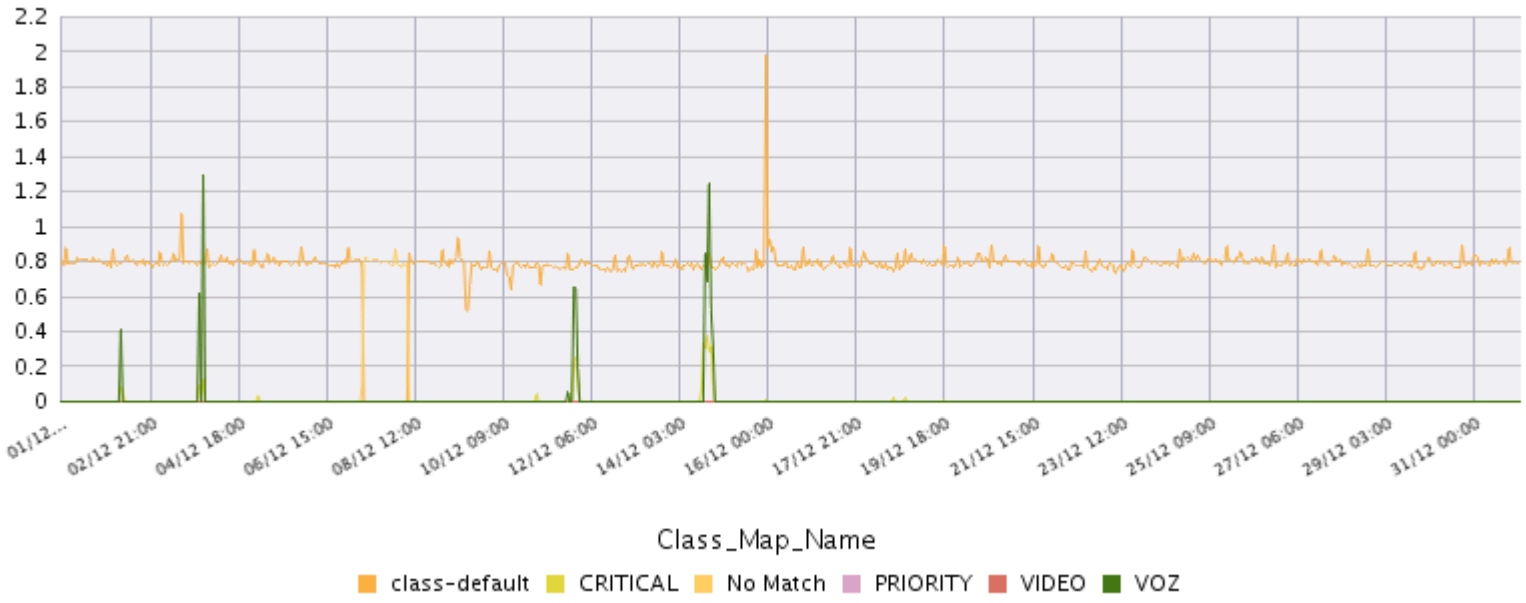
Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

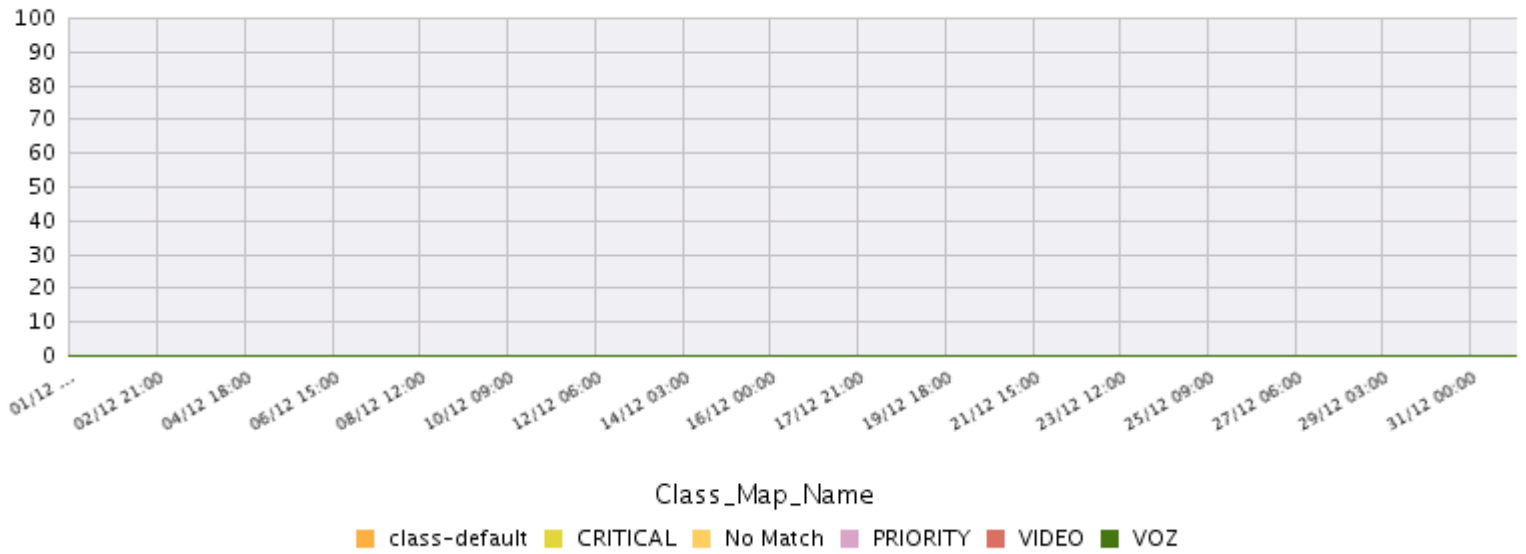
Sede	**OACI - COLOMBIA**
Equipo	**ICAO_COLOMBIA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.196)**
Ciudad	**Bogotá**

Interface: **GigabitEthernet0/0**

Policy Map (kbps)

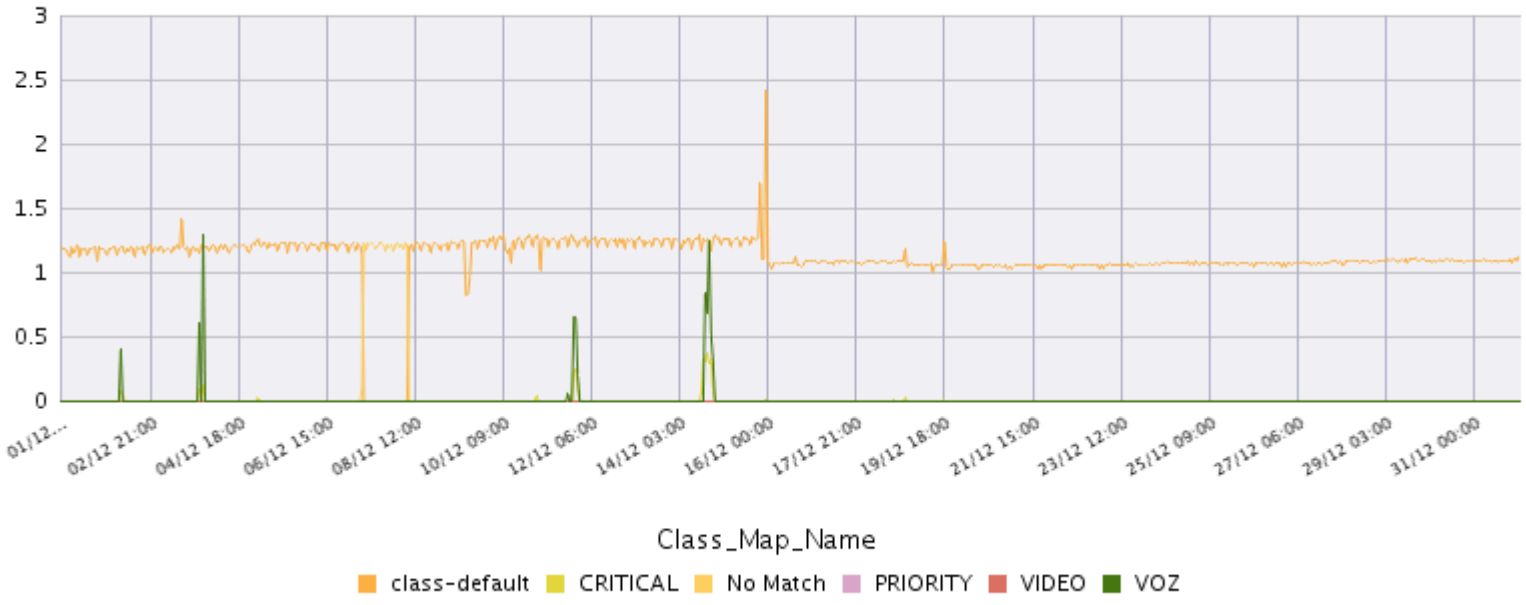


Drops (kbps)

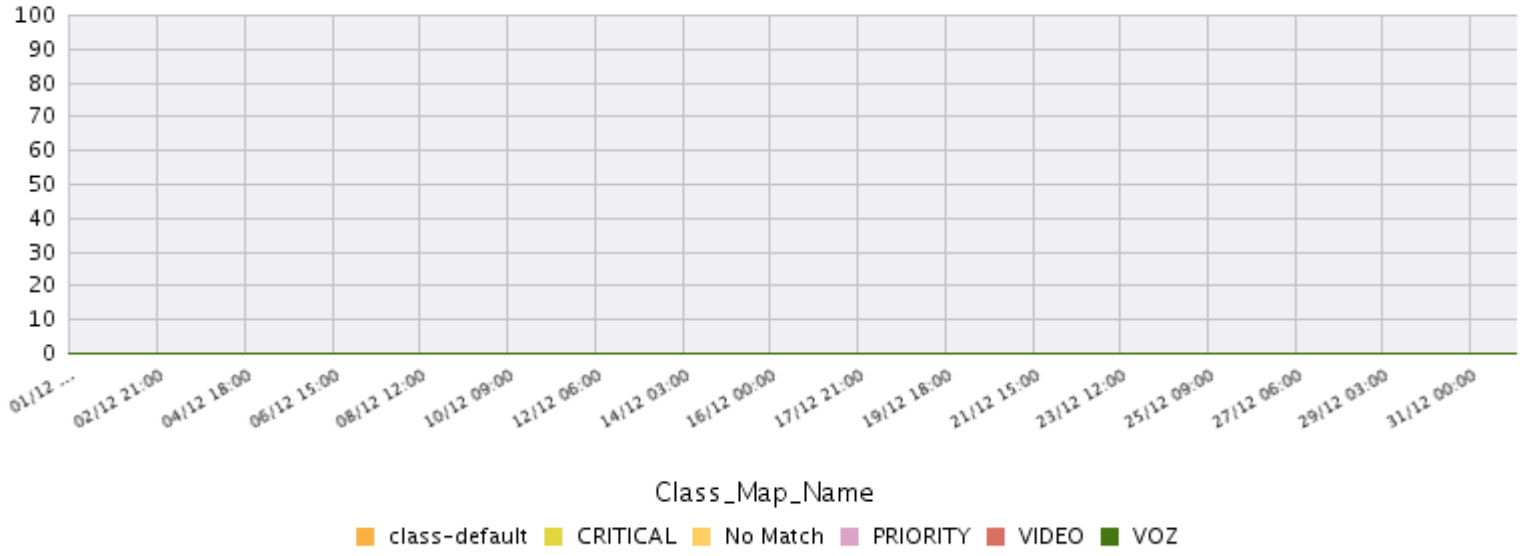


Interface: **GigabitEthernet0/1**

Policy Map (kbps)



Drops (kbps)

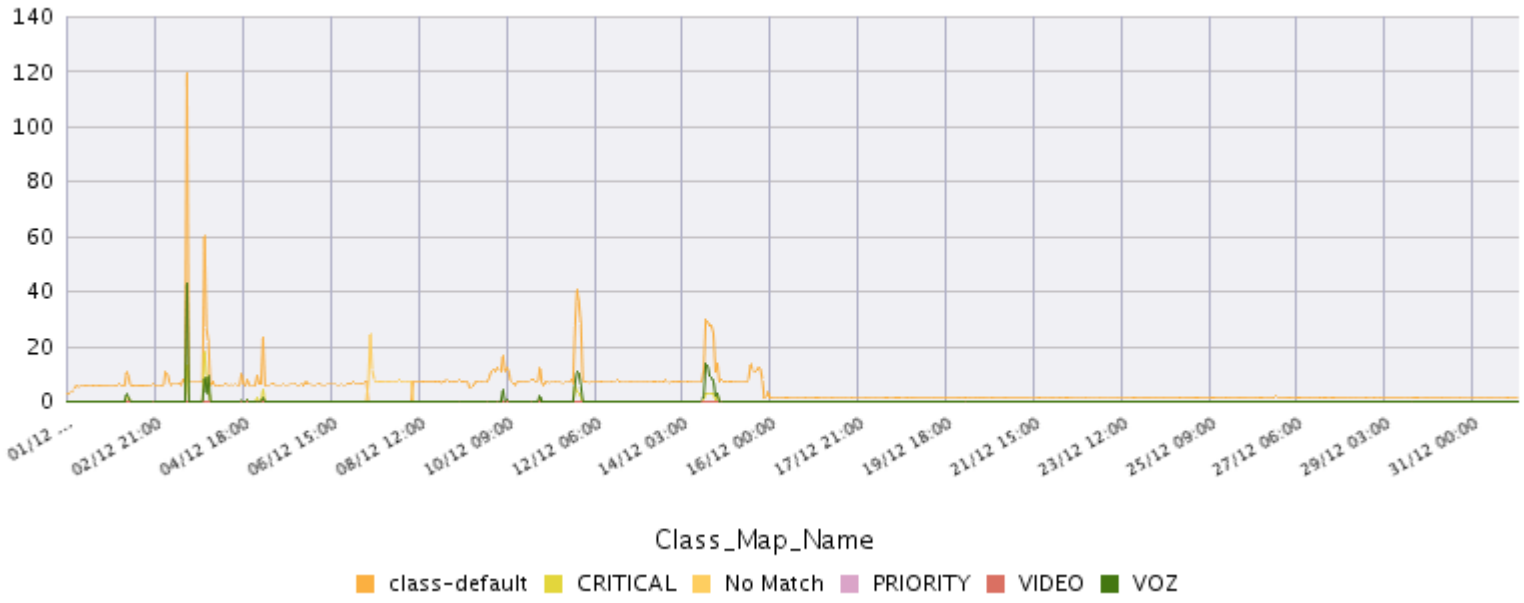


Sede	OACI - ECUADOR

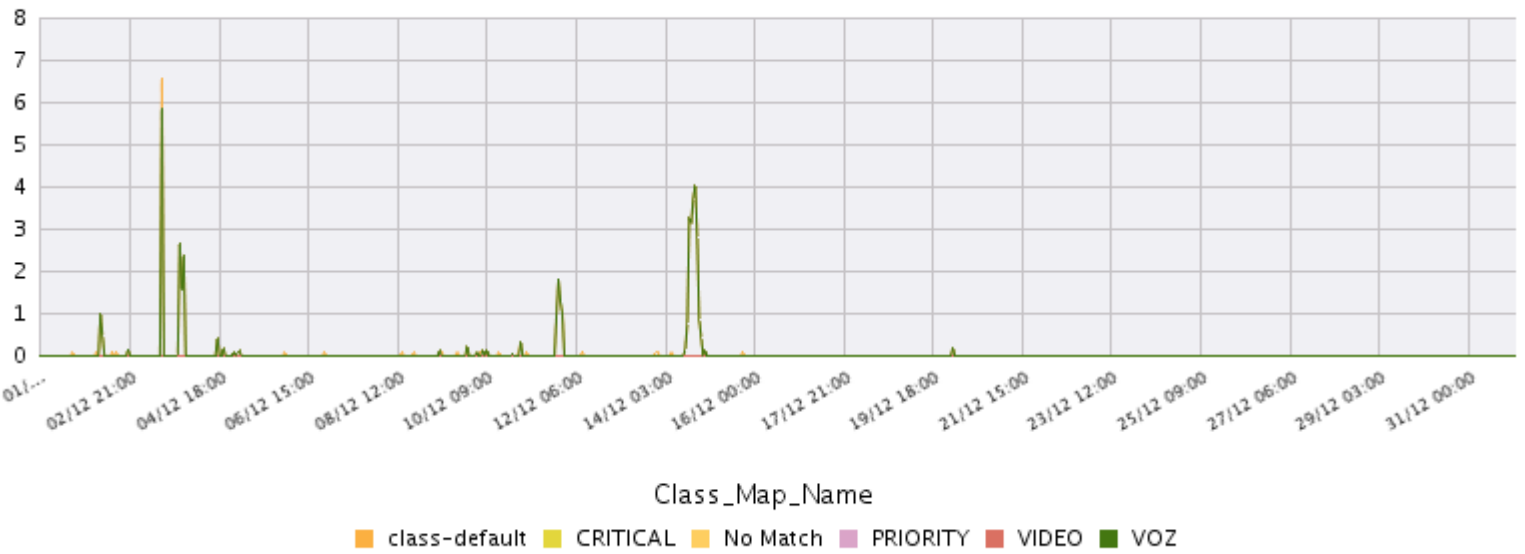
Equipo	ICAO_ECUADOR	Modelo	Cisco1921k9
IP de Gestión	(172.21.6.195)	Ciudad	Guayaquil

Interface: **GigabitEthernet0/0.1367**

Policy Map (kbps)

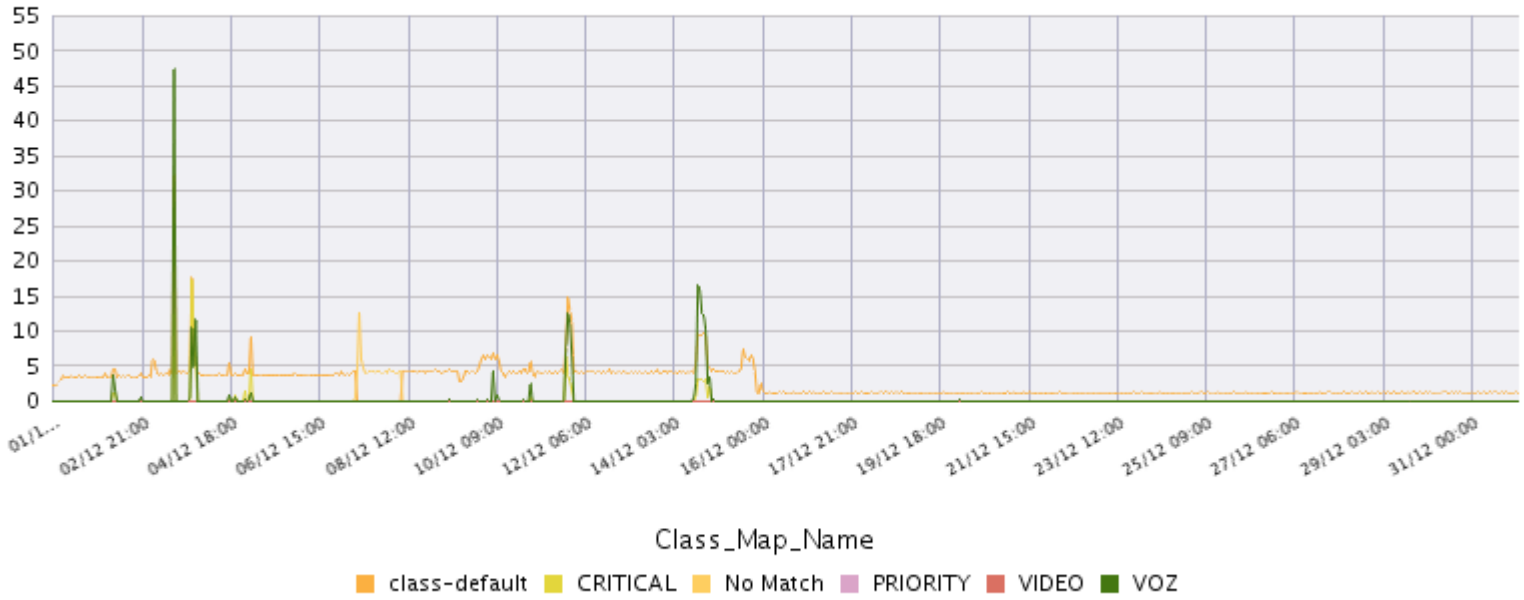


Drops (kbps)

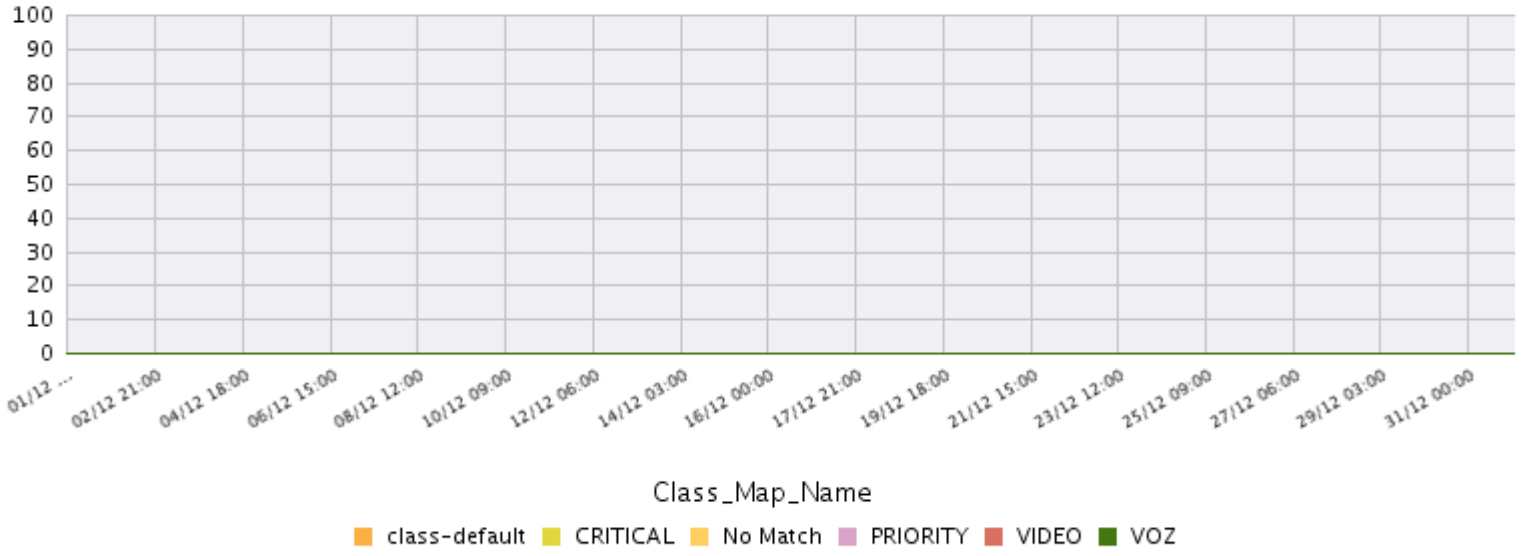


Interface: **GigabitEthernet0/1**

Policy Map (kbps)



Drops (kbps)



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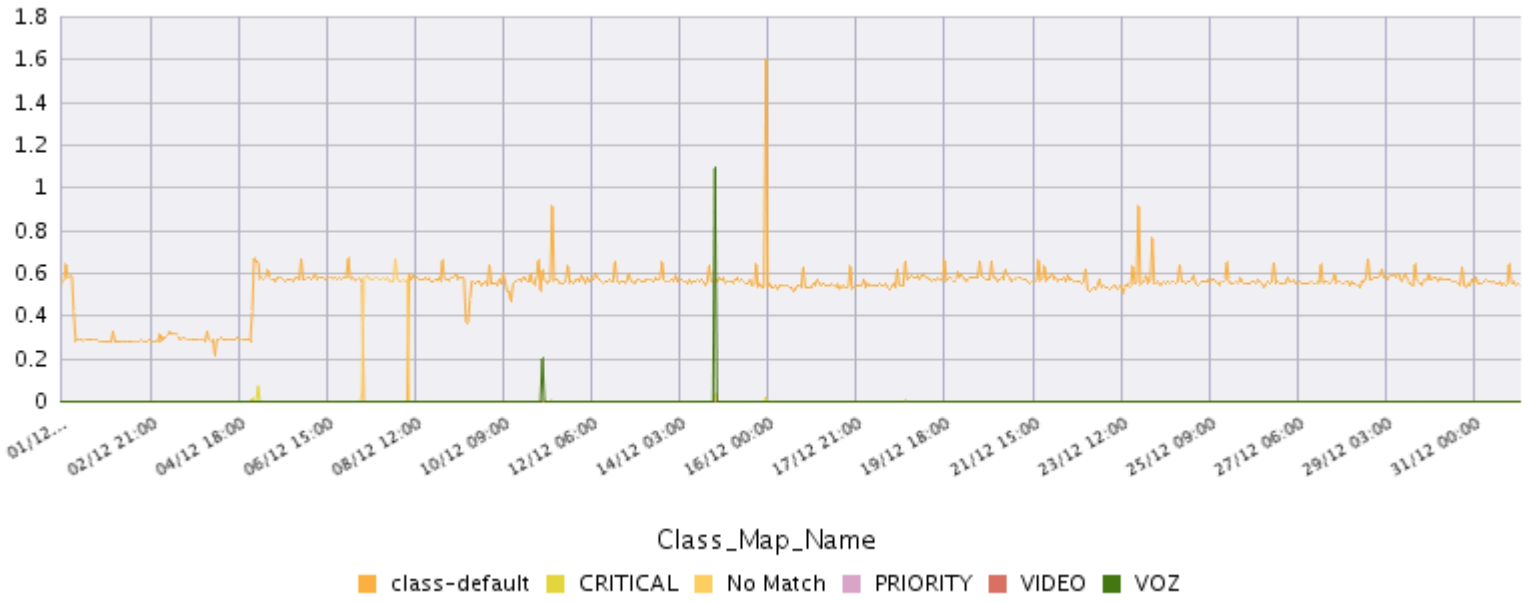
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

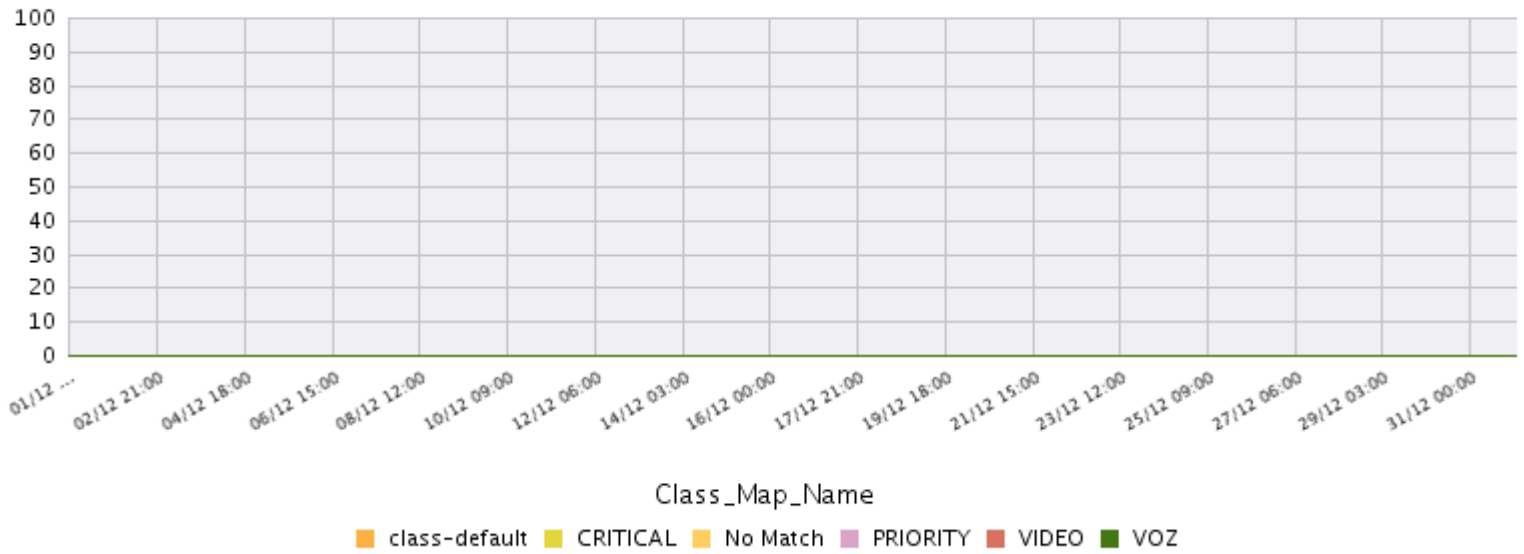
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - GUYANA**
Equipo	**ICAO_GUYANA.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.200)**
Ciudad	**Georgetown**
Interface:	**GigabitEthernet0/0**

Policy Map (kbps)

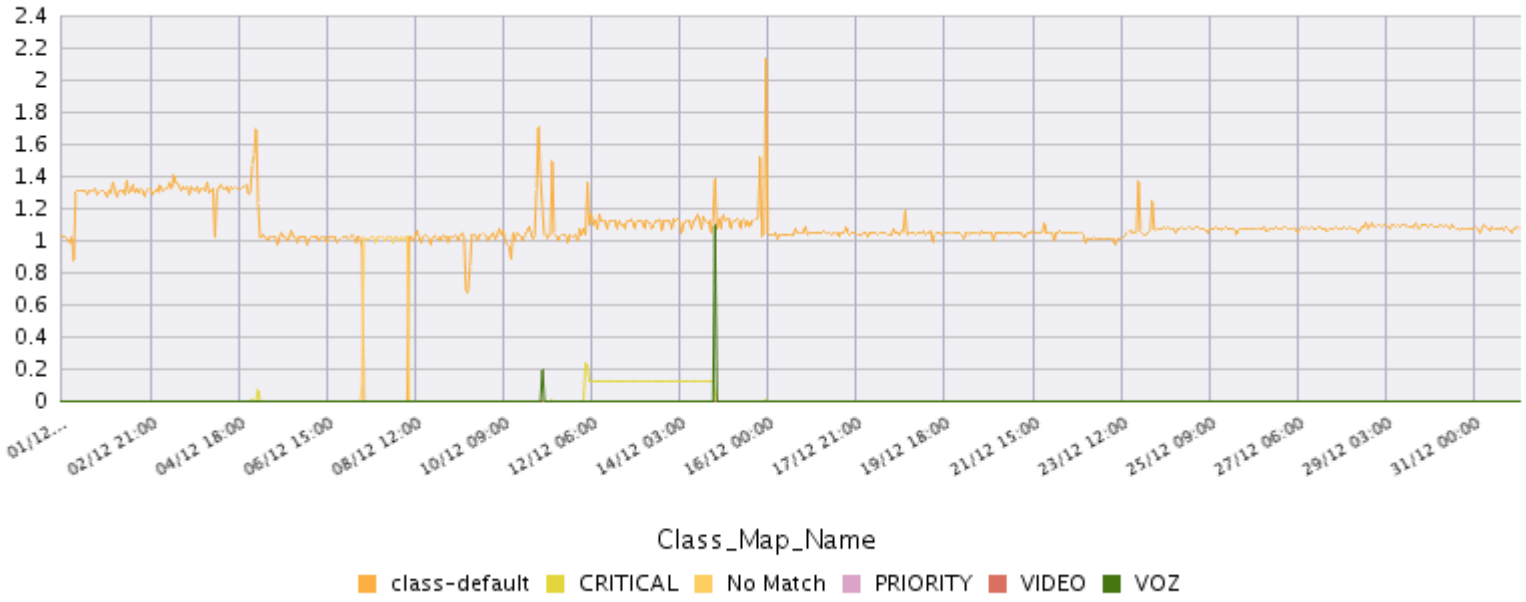


Drops (kbps)



Interface: **GigabitEthernet0/1**

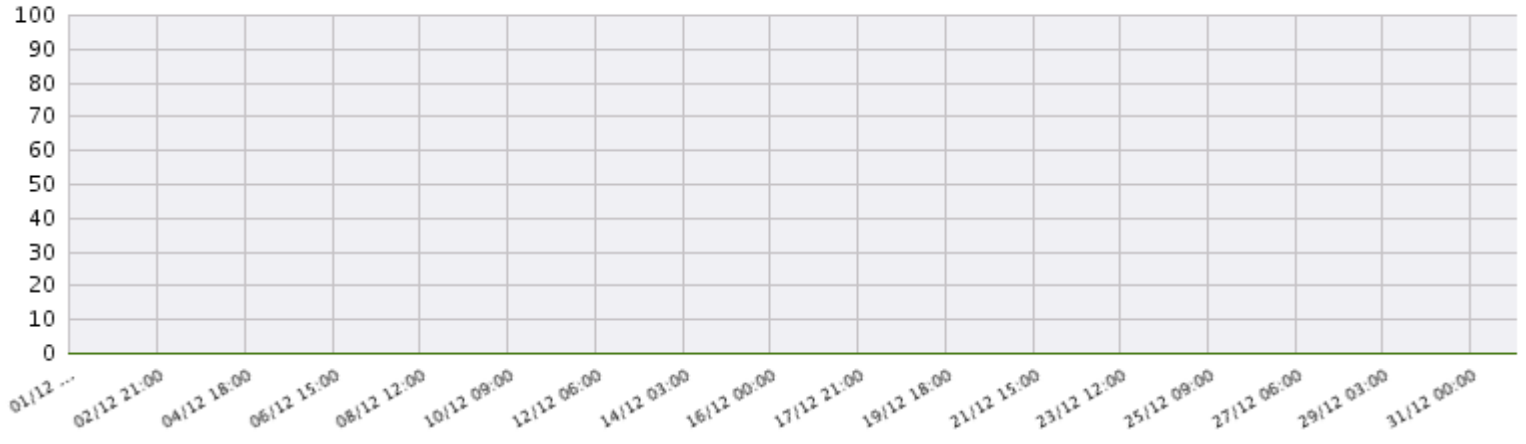
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)

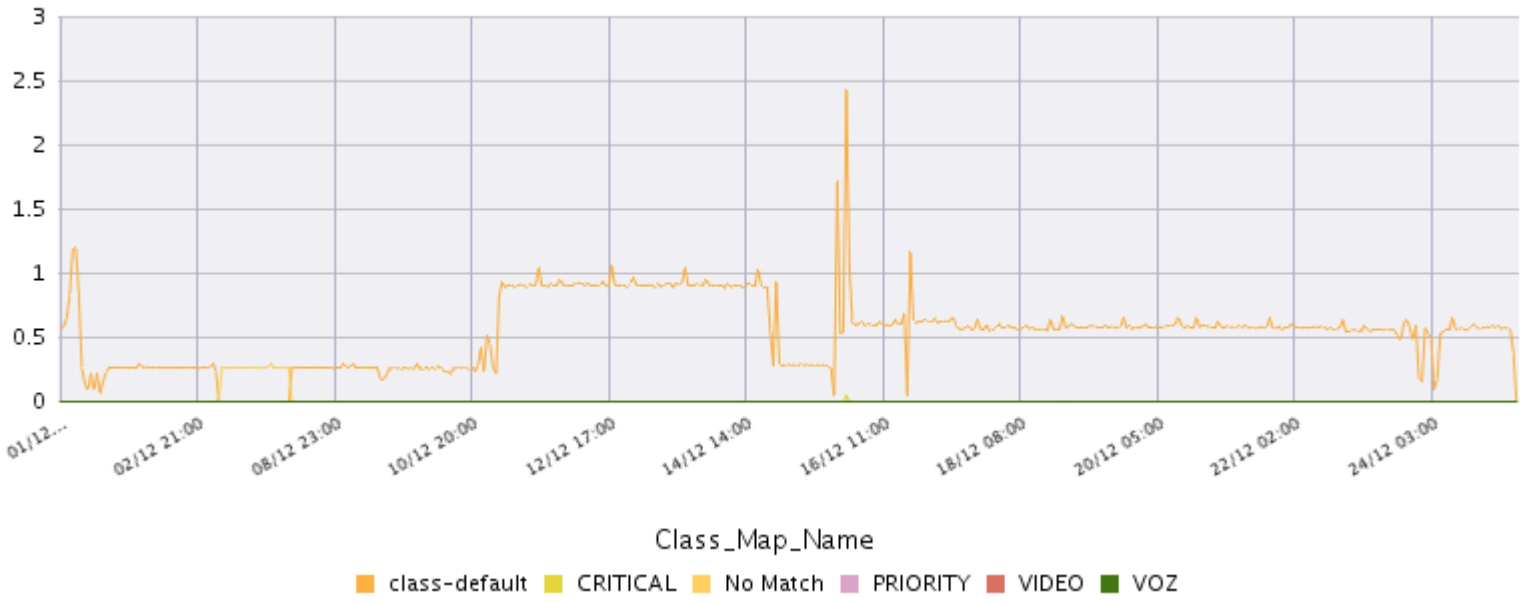


Class_Map_Name

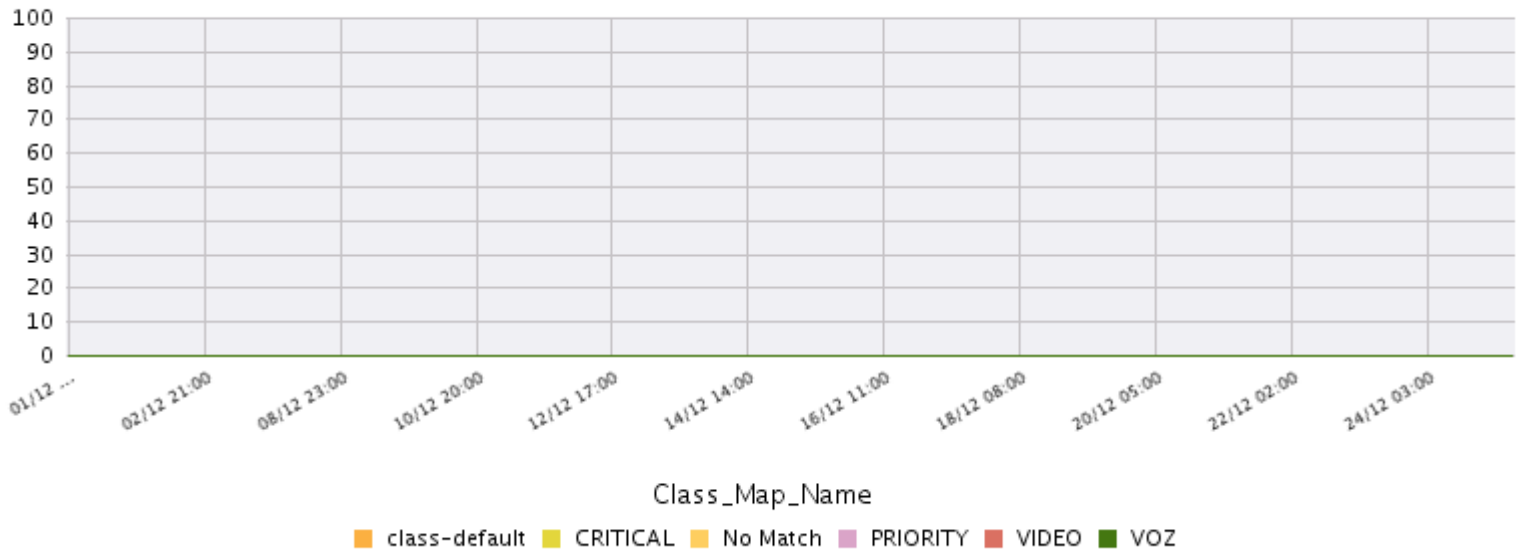
class-default CRITICAL No Match PRIORITY VIDEO VOZ

Sede	**OACI - GUYANA FRANCESA**
Equipo	**ICAO_FR_GUYANA.eq.ignetworks.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.201)**
Ciudad	**Cayena**
Interface:	**GigabitEthernet0/0**

Policy Map (kbps)

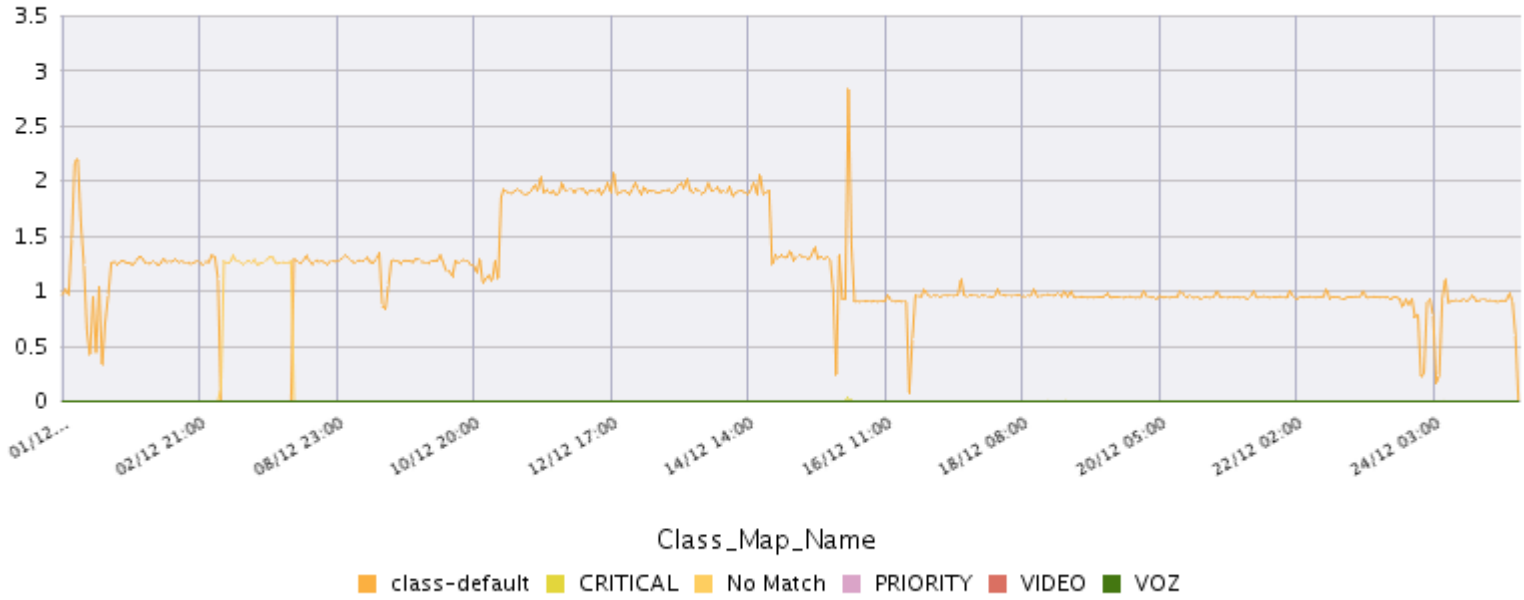


Drops (kbps)



Interface: **GigabitEthernet0/1**

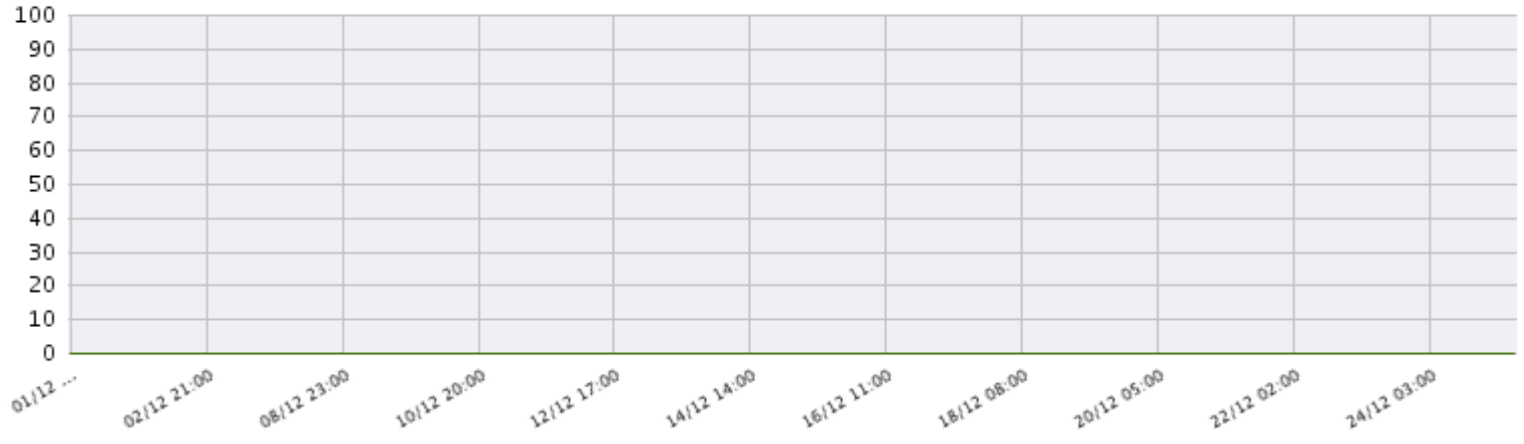
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



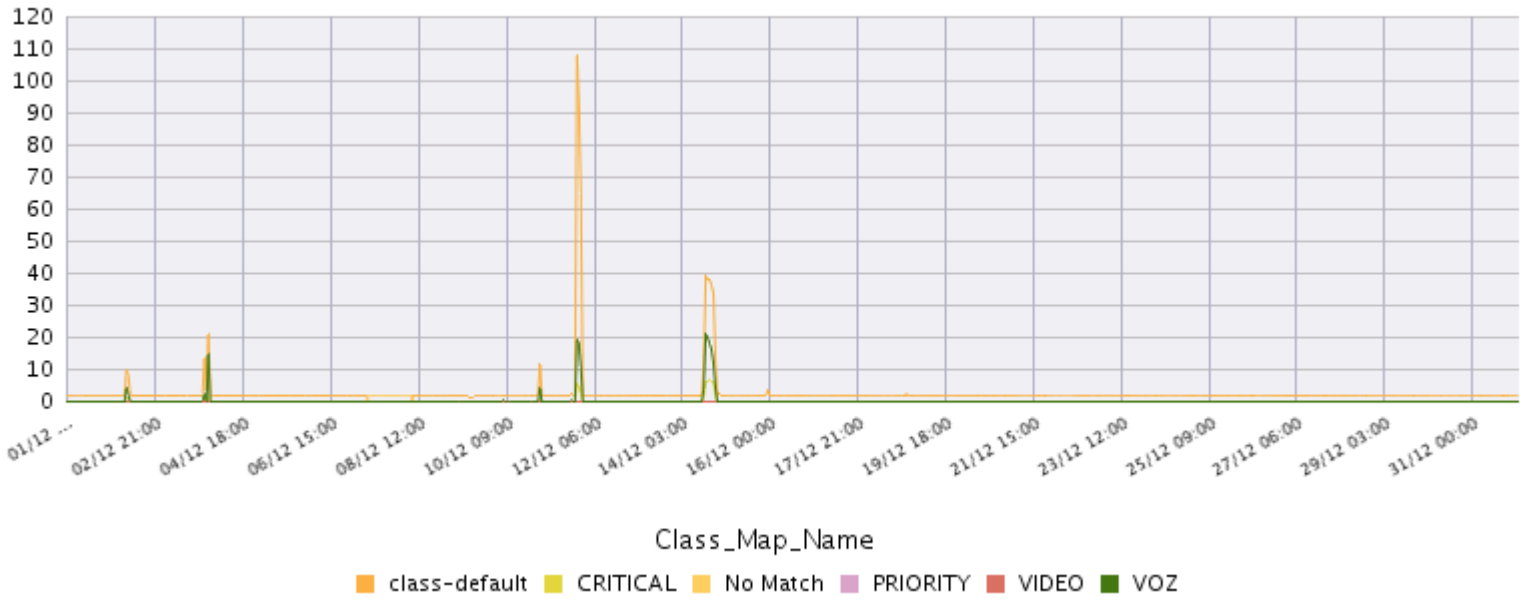
Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

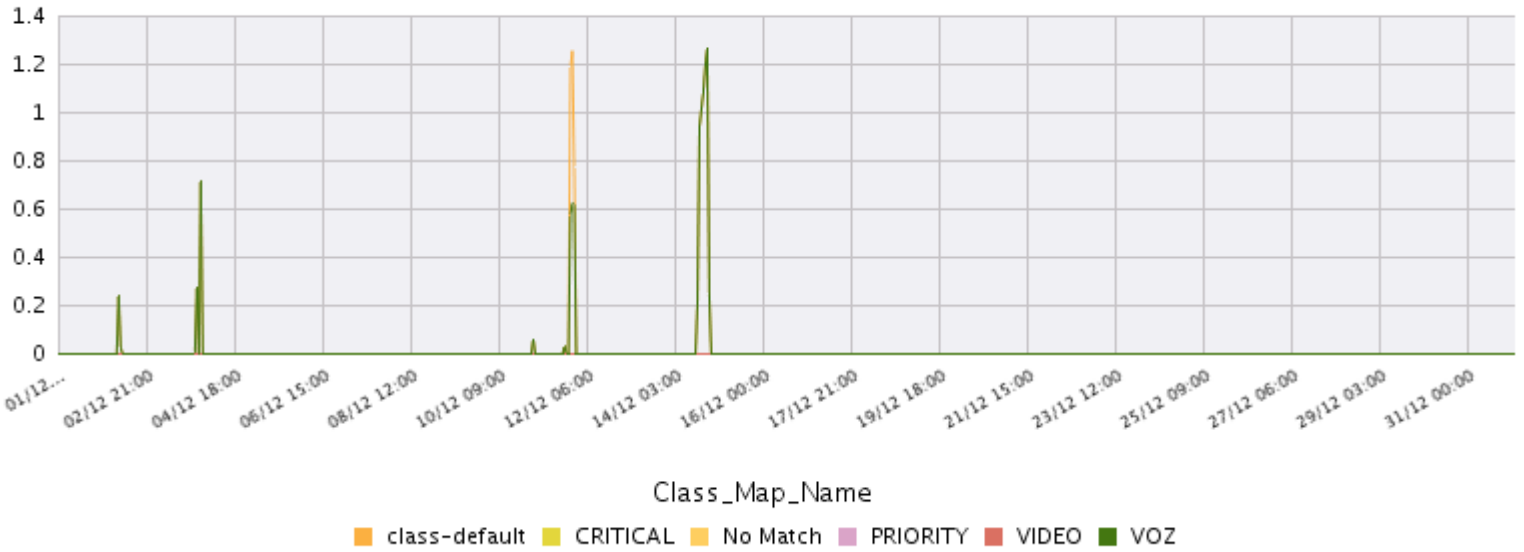
Sede	**OACI - LIMA**
Equipo	**ICAO_PERU**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.20.26.50)**
Ciudad	**Callao**

Interface: **GigabitEthernet0/0.2428**

Policy Map (kbps)

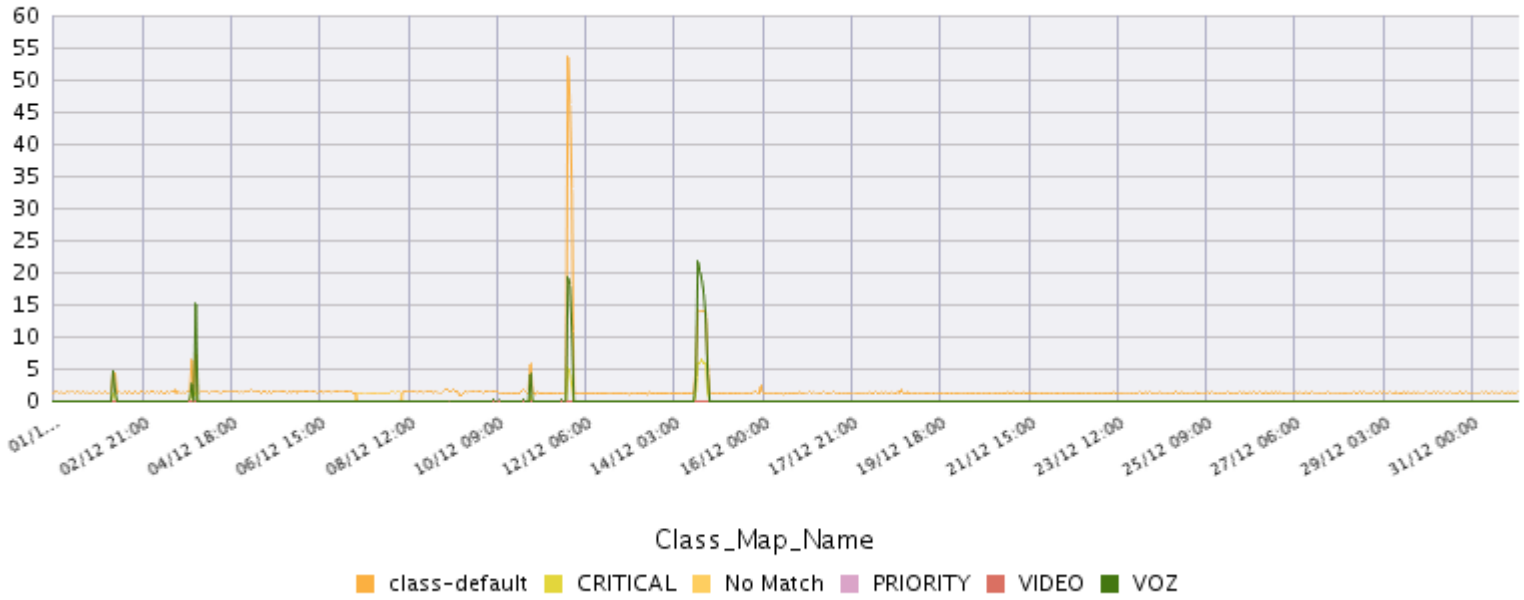


Drops (kbps)



Interface: **GigabitEthernet0/1**

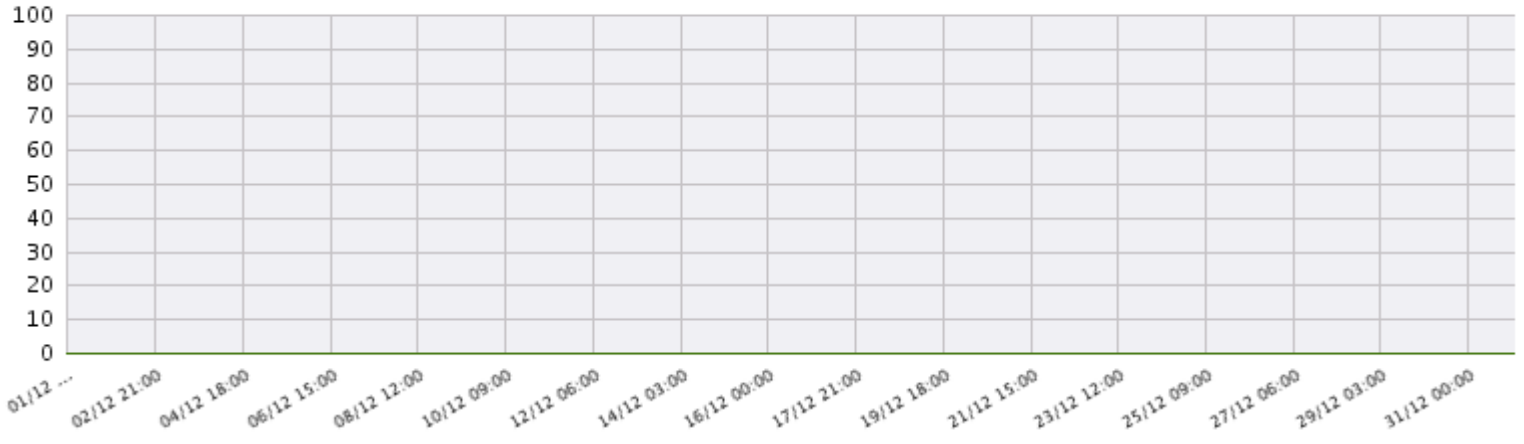
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



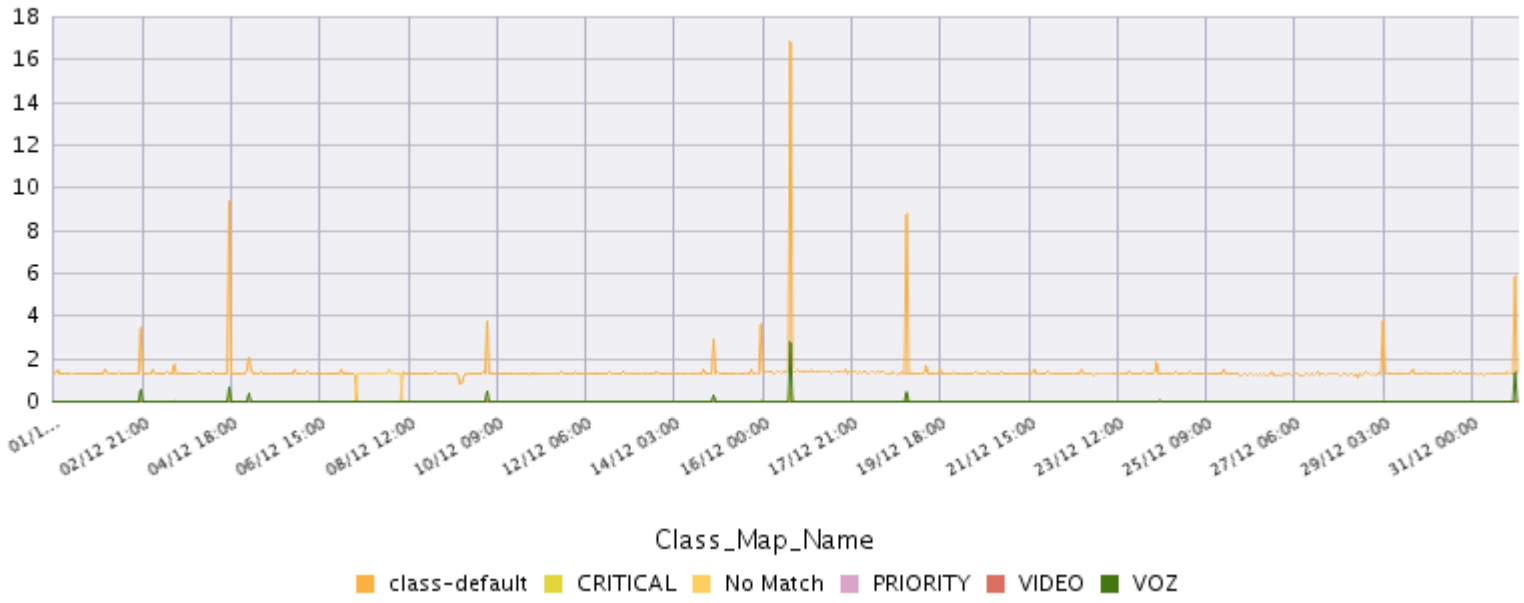
Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

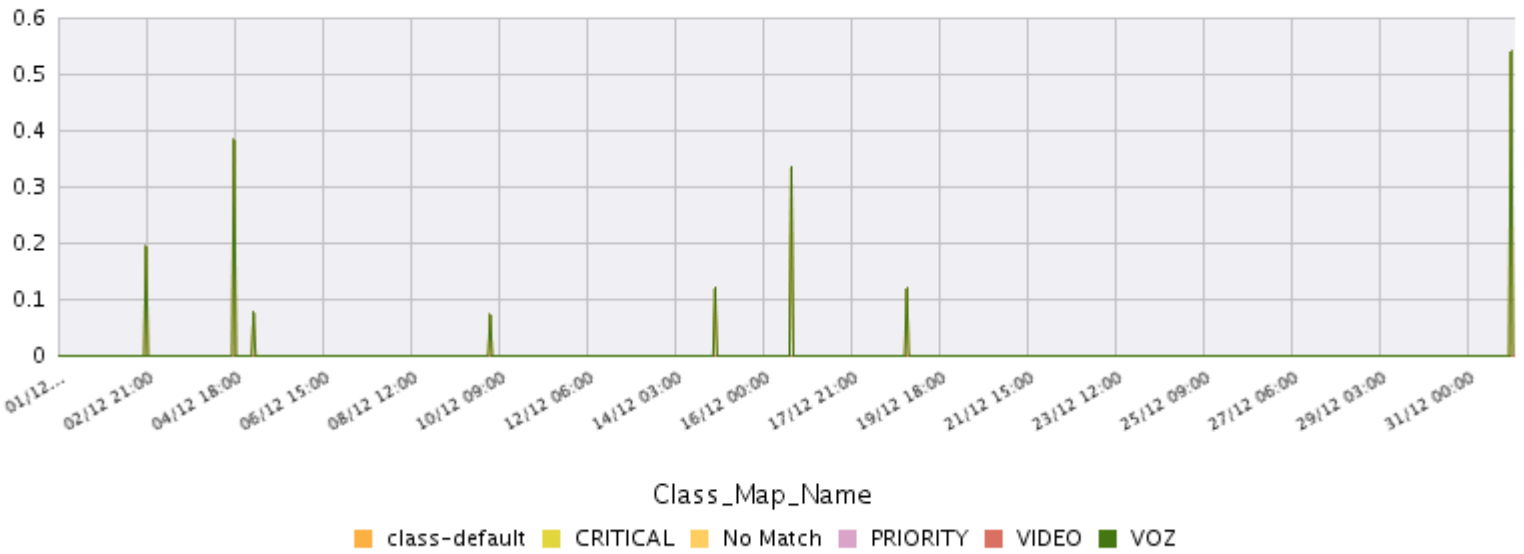
Sede	**OACI - PARAGUAY**
Equipo	**ICAO_PARAGUAY.ineo.com.py**
Modelo	**Cisco1941**
IP de Gestión	**(172.21.6.199)**
Ciudad	**Asunción**

Interface: **GigabitEthernet0/0**

Policy Map (kbps)

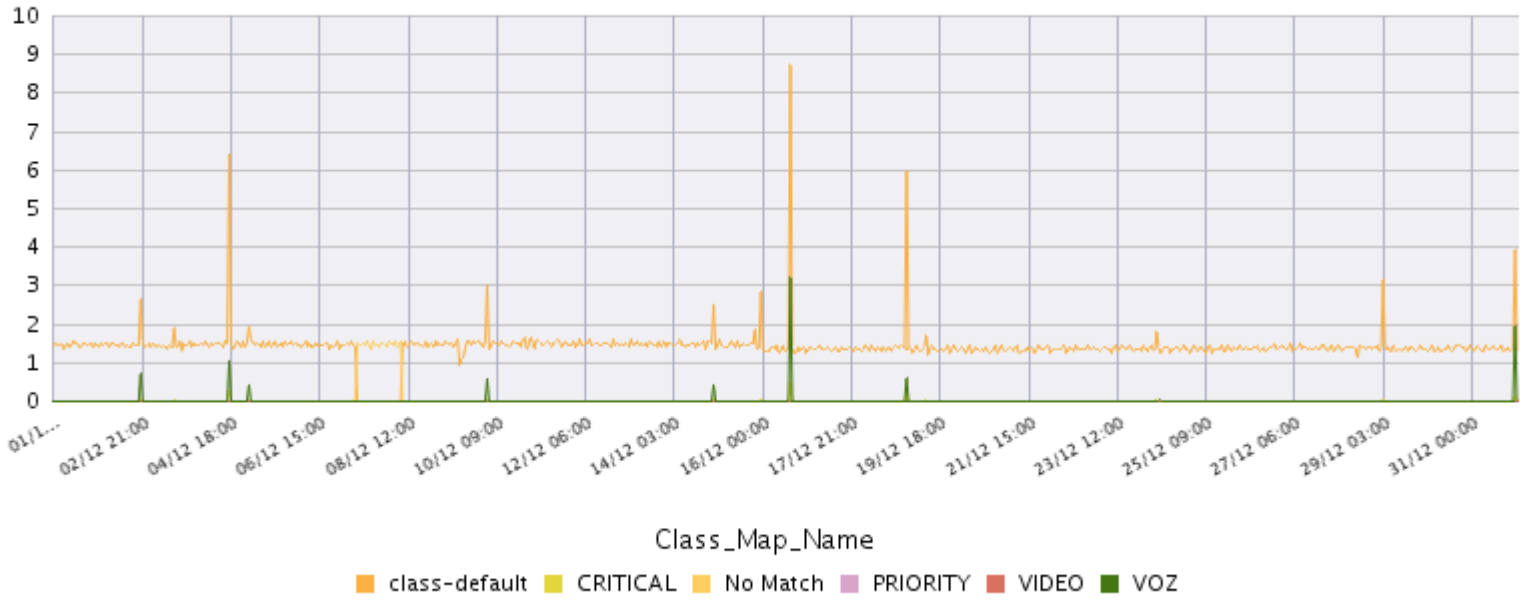


Drops (kbps)

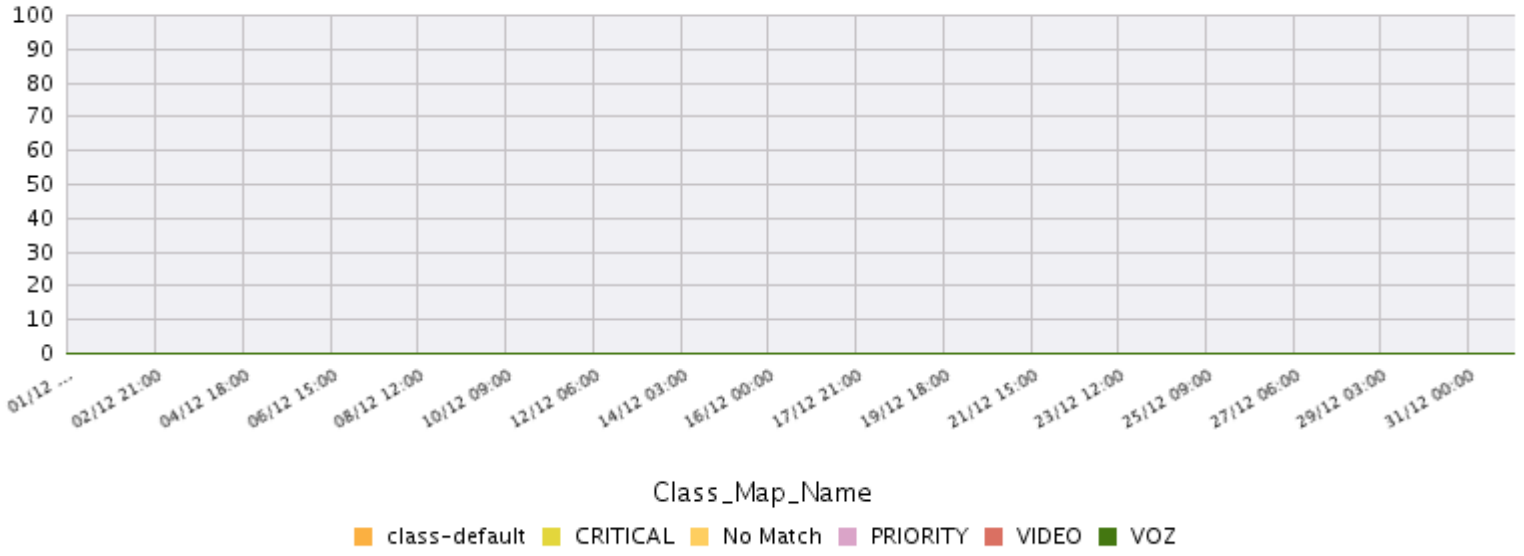


Interface: **GigabitEthernet0/1**

Policy Map (kbps)



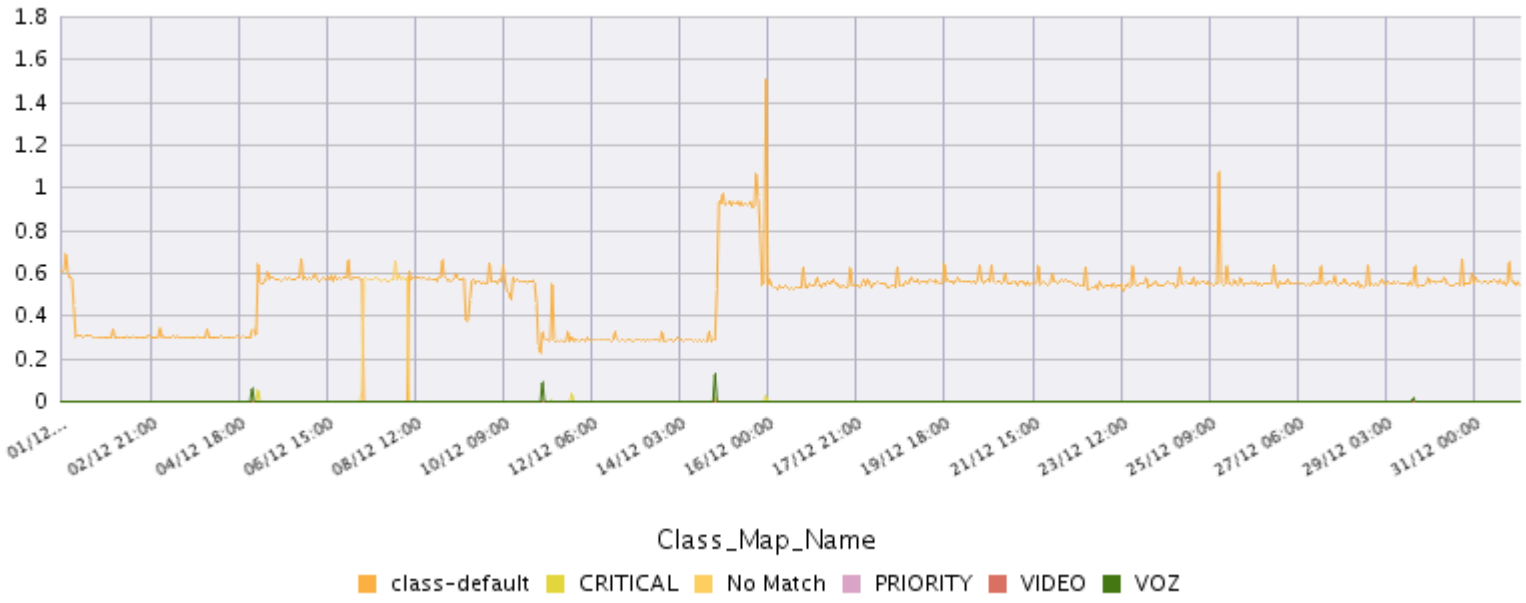
Drops (kbps)



Sede	**OACI - SURINAME**
Equipo	**ICAO_SURINAME.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.203)**
Ciudad	**Paramaribo**

Interface: **GigabitEthernet0/0**

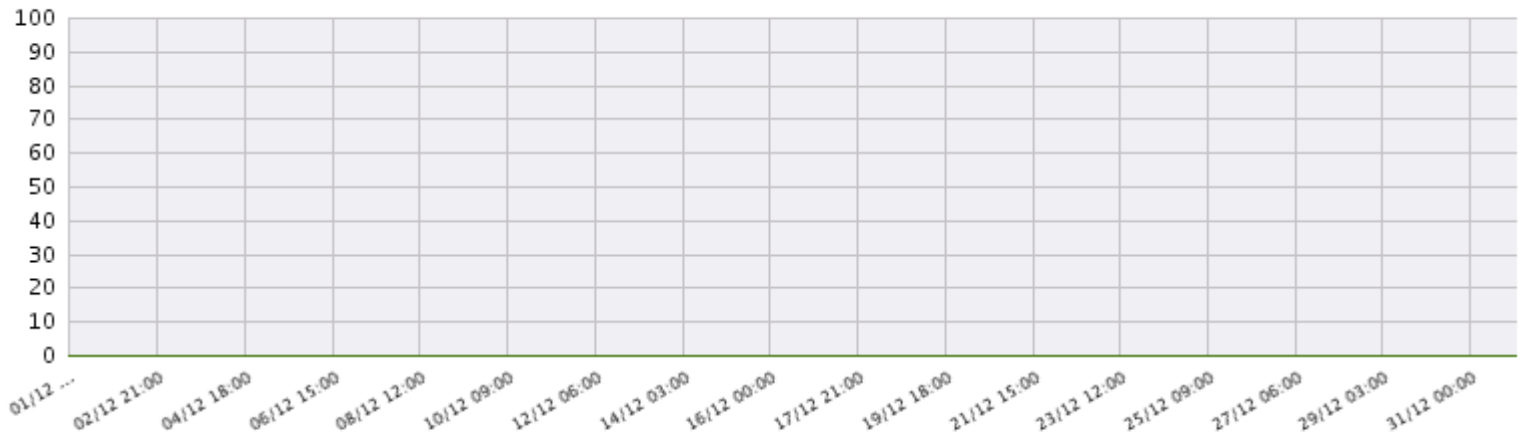
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)

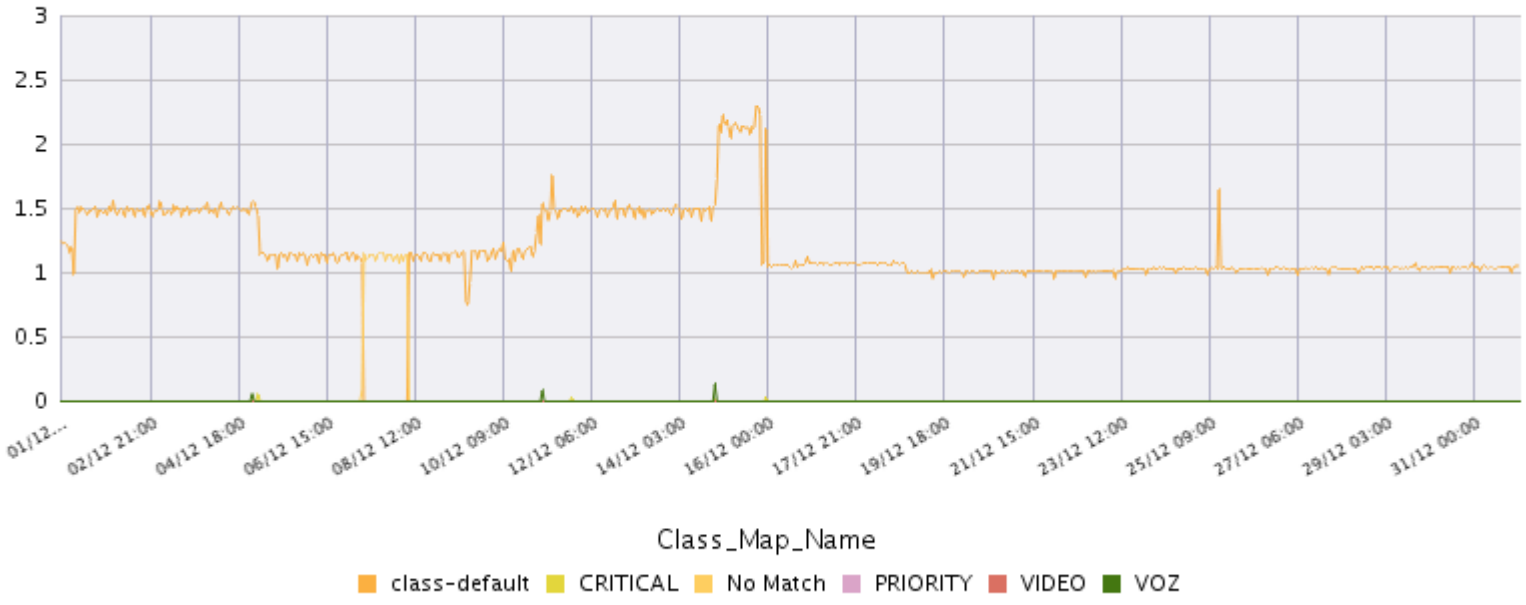


Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Interface: **GigabitEthernet0/1**

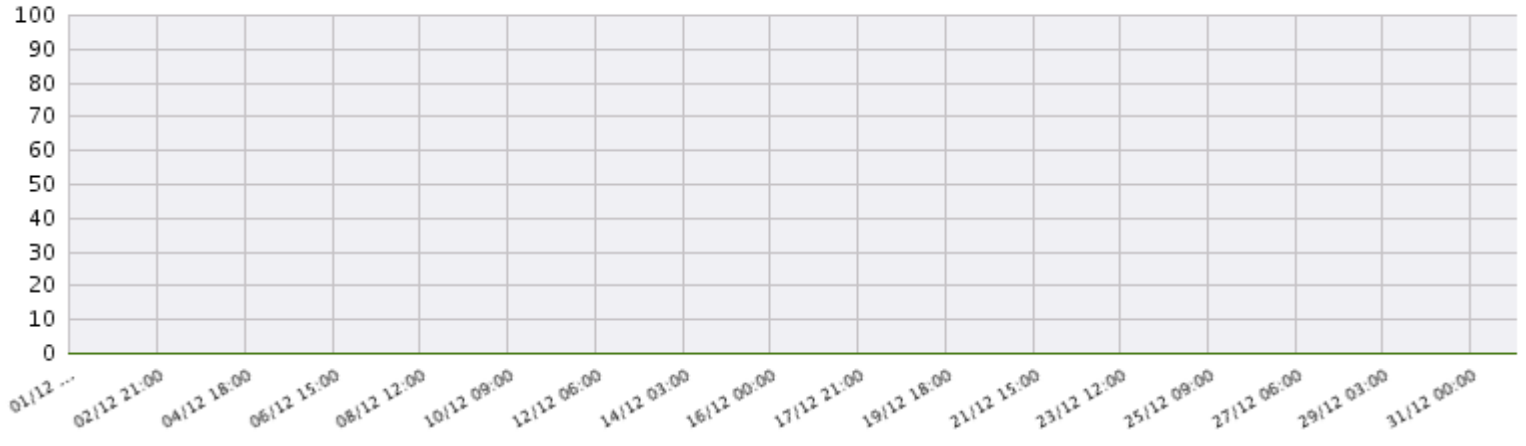
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)

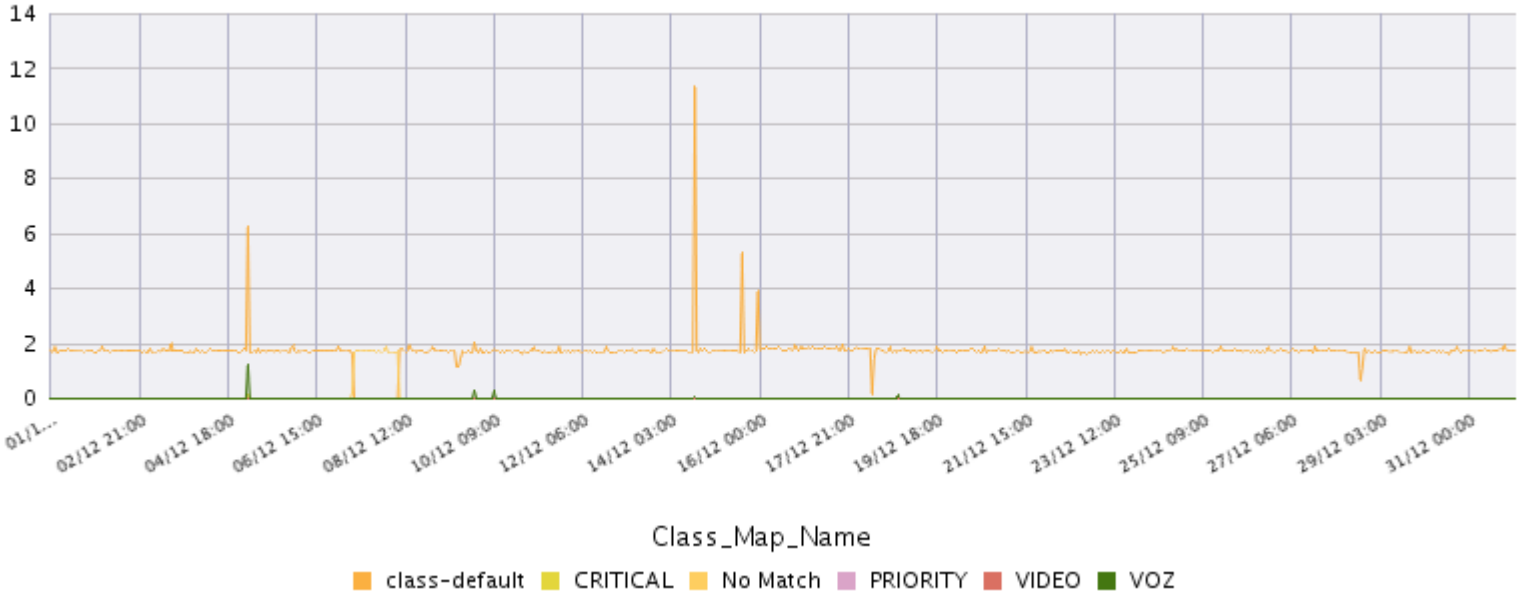


Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Sede	**OACI - TRINIDAD & TOBAGO**
Equipo	**ICAO_TRINIDAD.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.194)**
Ciudad	**Port of Spain**
Interface:	**GigabitEthernet0/0**

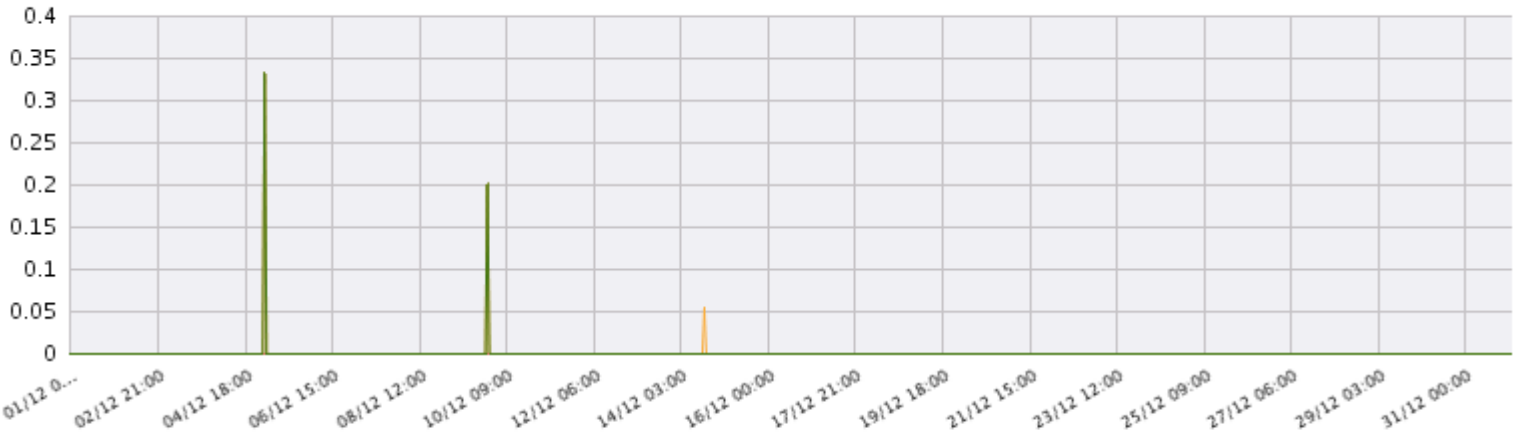
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)

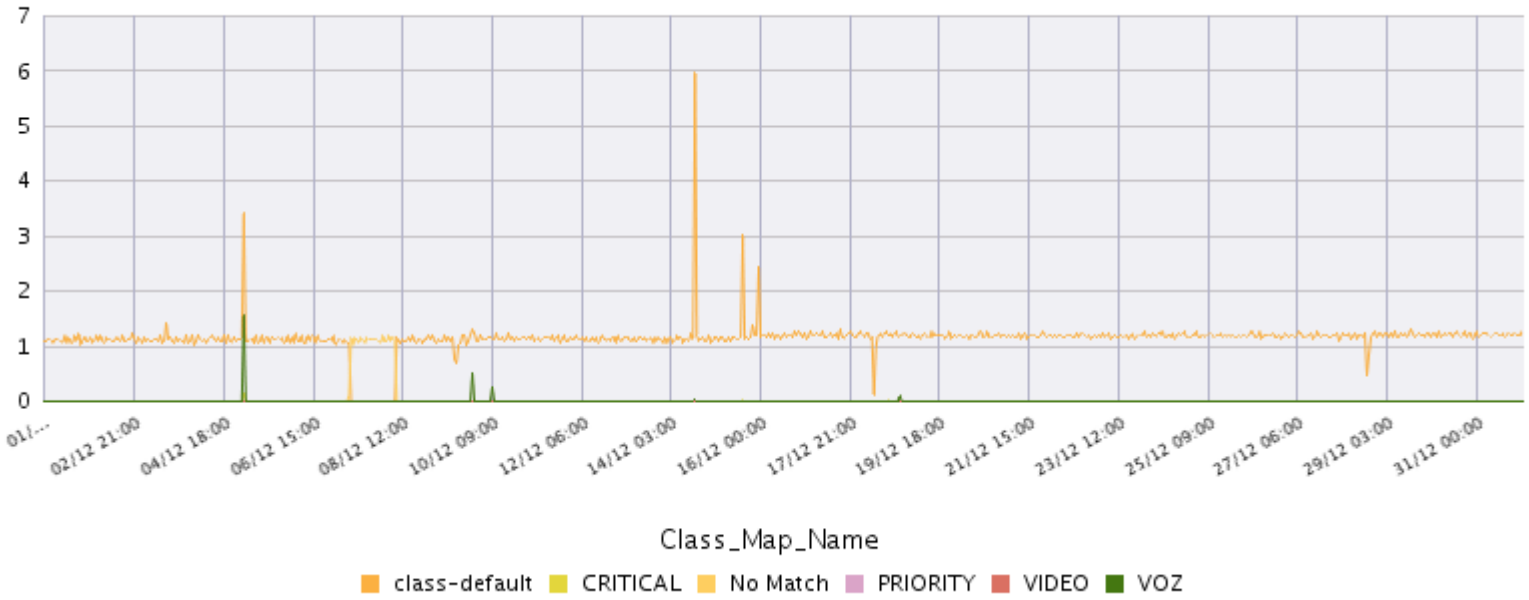


Class_Map_Name

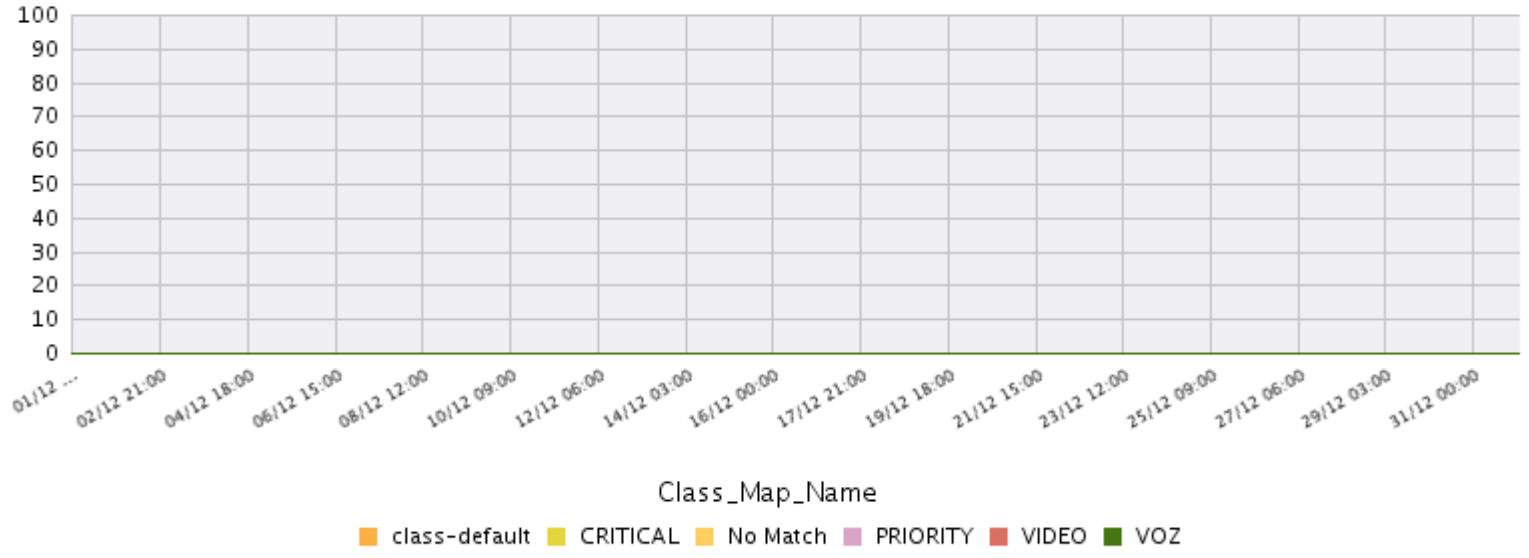
class-default CRITICAL No Match PRIORITY VIDEO VOZ

Interface: **GigabitEthernet0/1**

Policy Map (kbps)



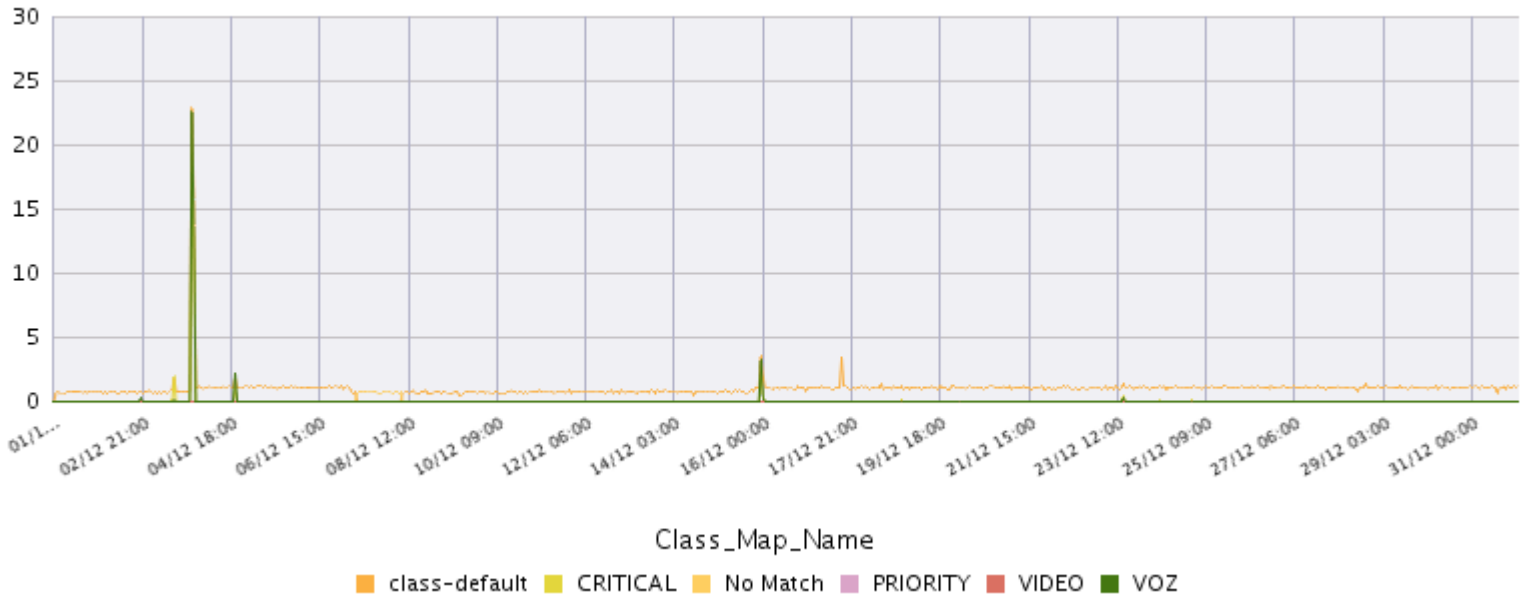
Drops (kbps)



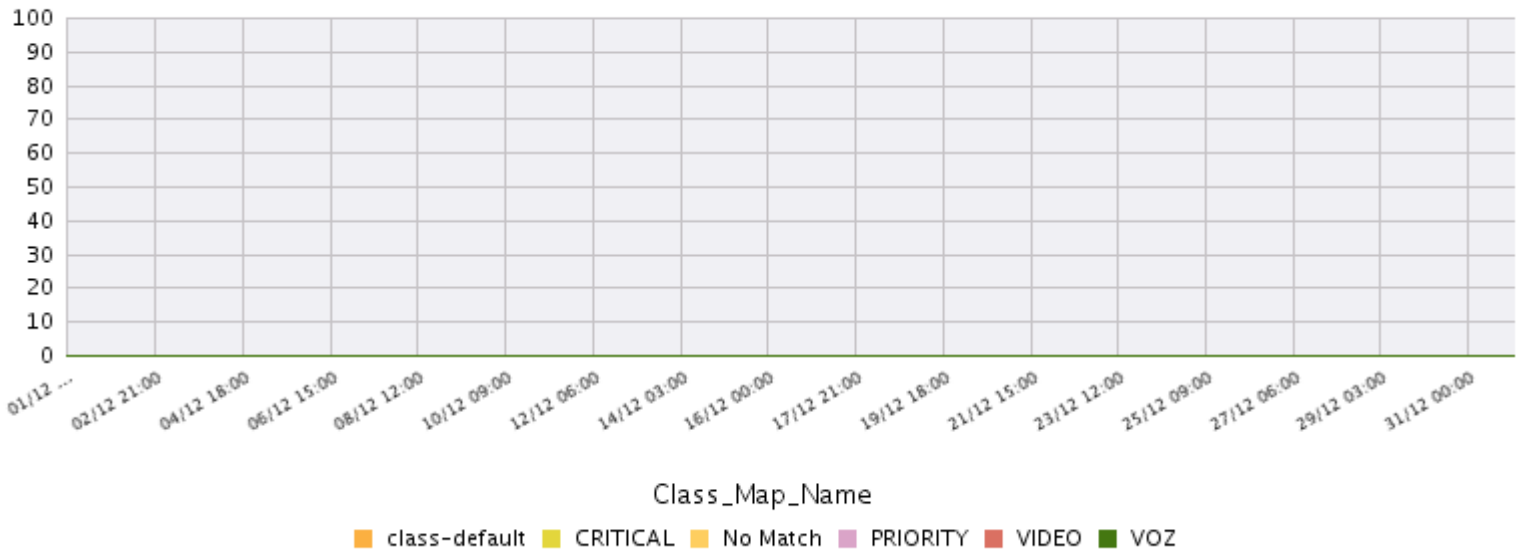
Sede	**OACI - URUGUAY**
Equipo	**ICAO_URUGUAY**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.198)**
Ciudad	**Montevideo**

Interface: **GigabitEthernet0/0**

Policy Map (kbps)

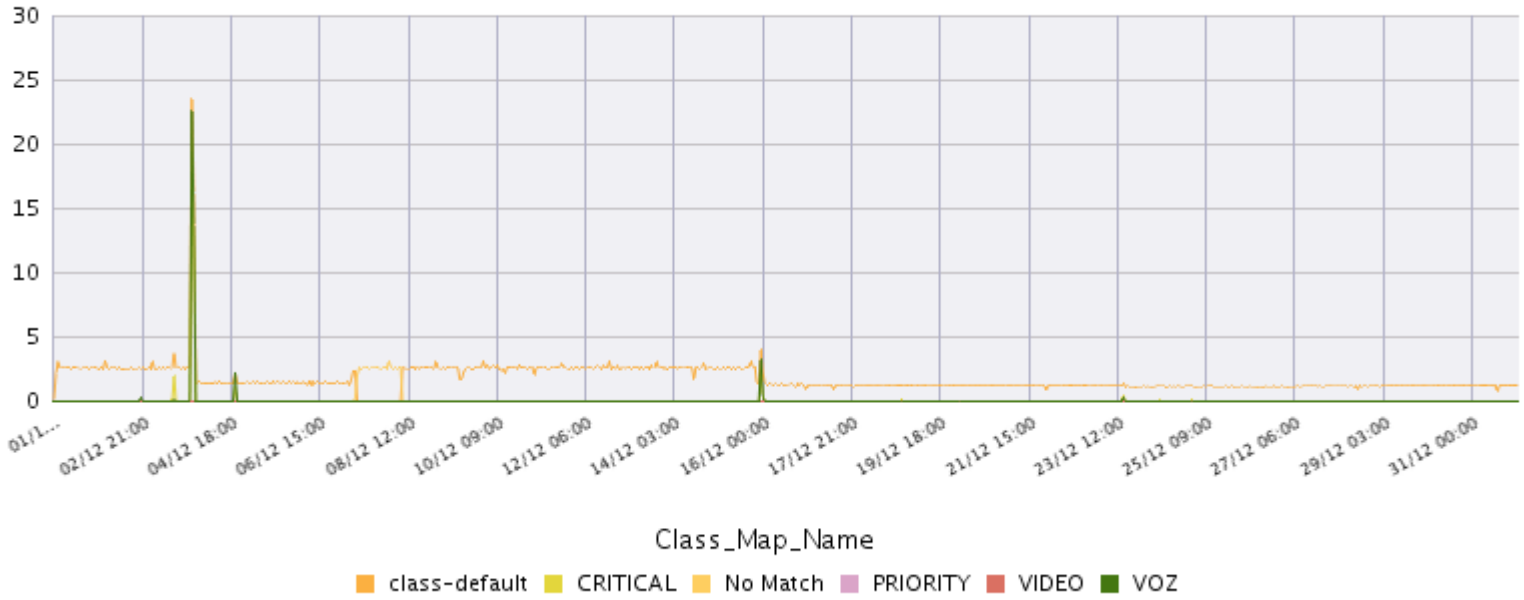


Drops (kbps)



Interface: **GigabitEthernet0/1**

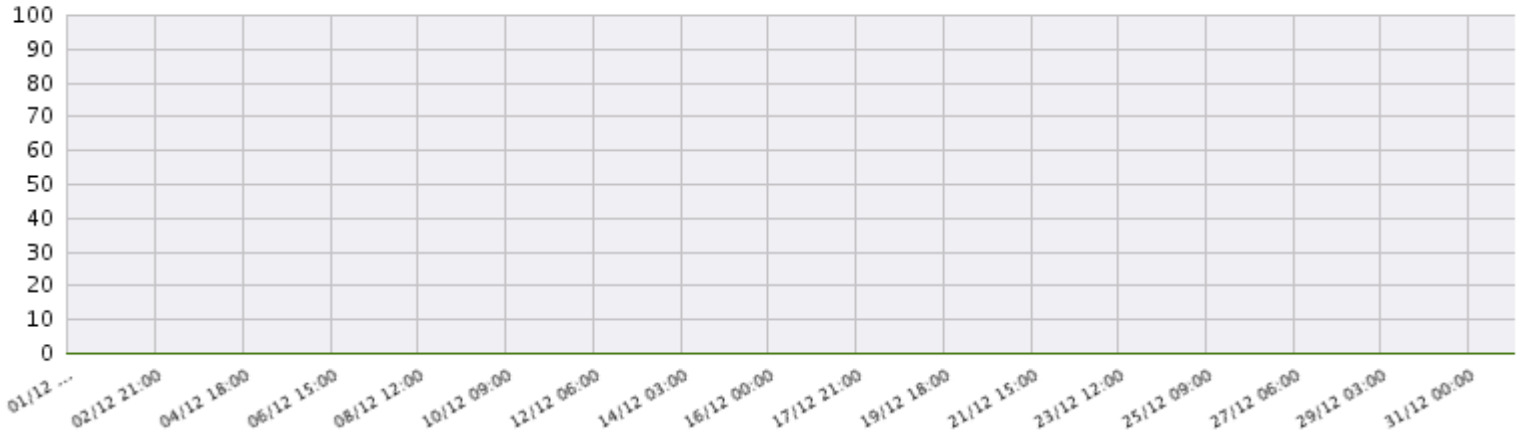
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



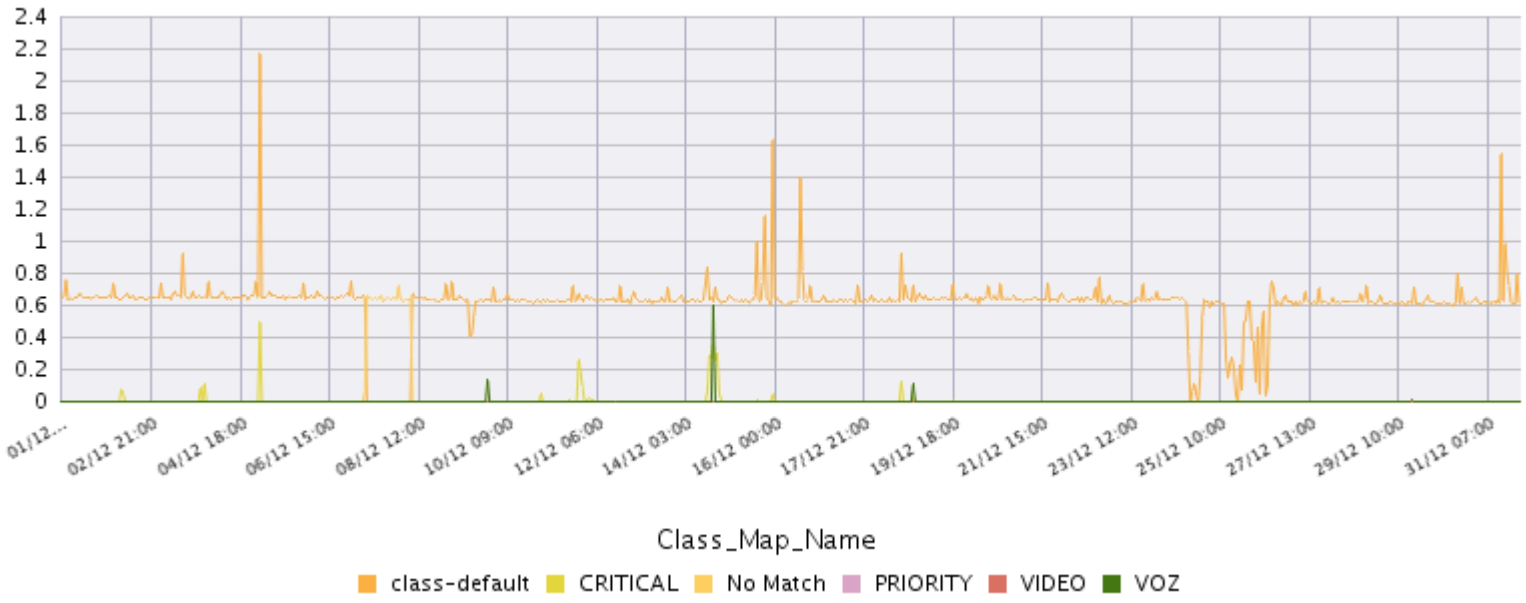
Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

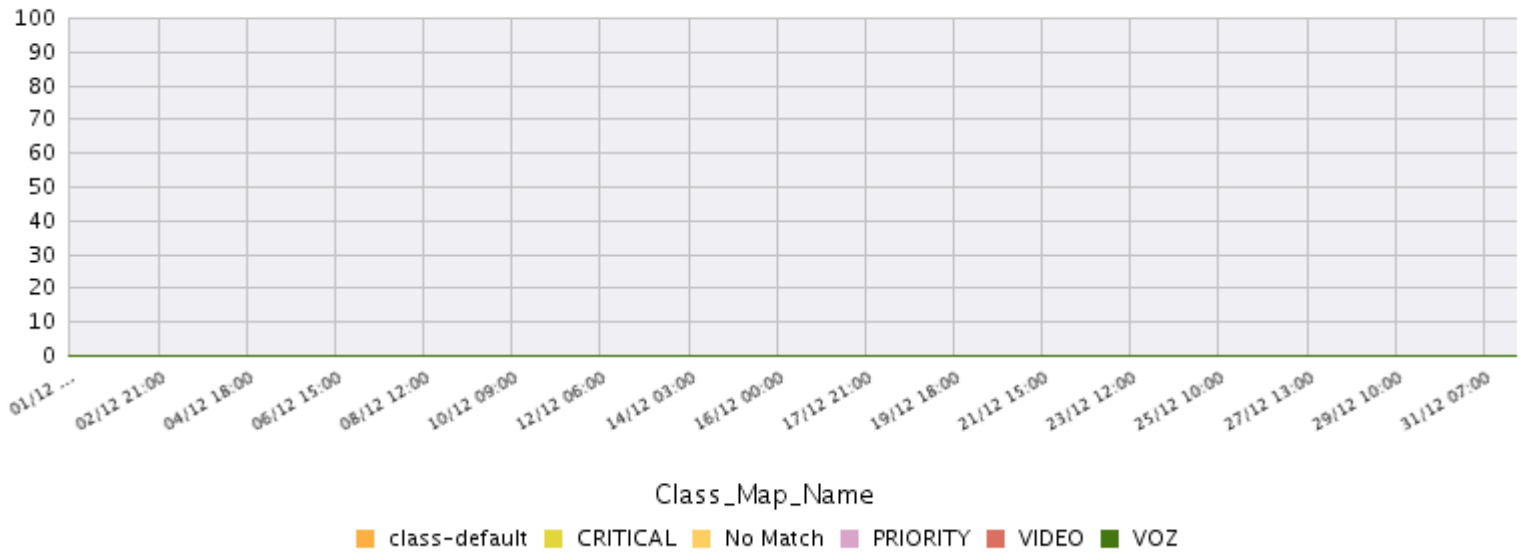
Sede	**OACI - VENEZUELA**
Equipo	**ICAO_VENEZUELA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.202)**
Ciudad	**Maiquetía**

Interface: **GigabitEthernet0/0**

Policy Map (kbps)

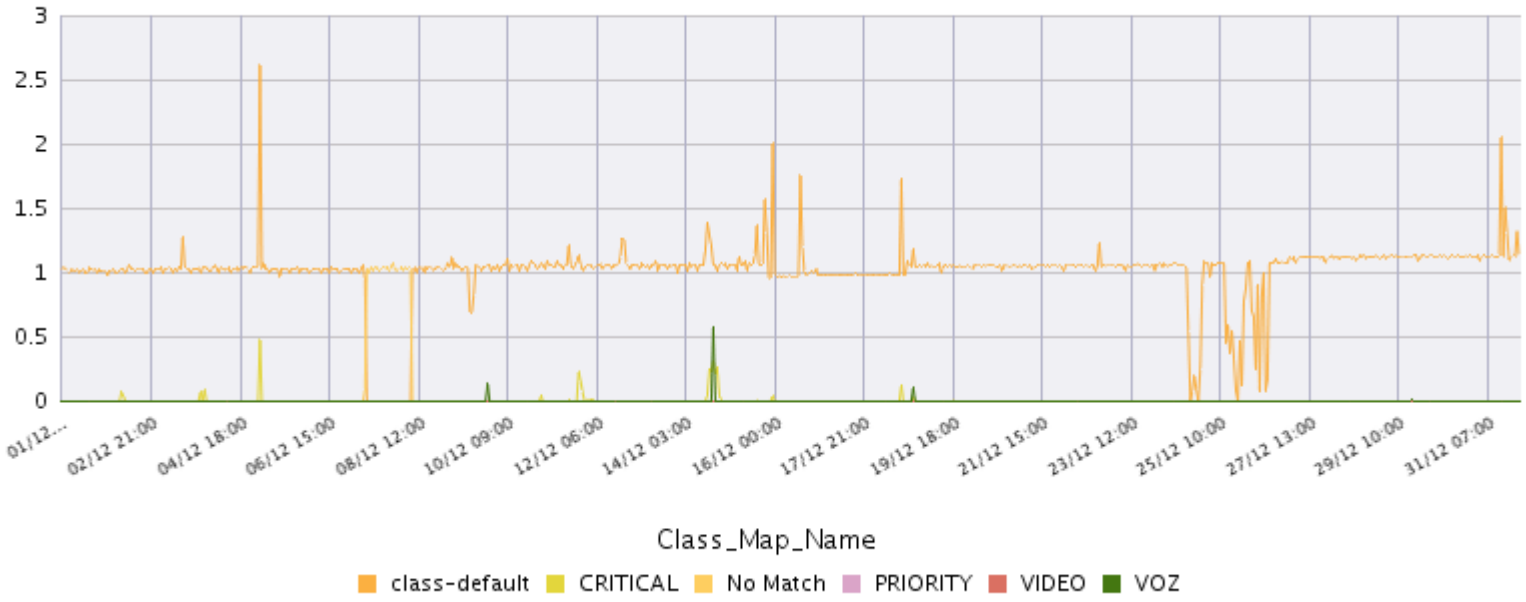


Drops (kbps)



Interface: **GigabitEthernet0/1**

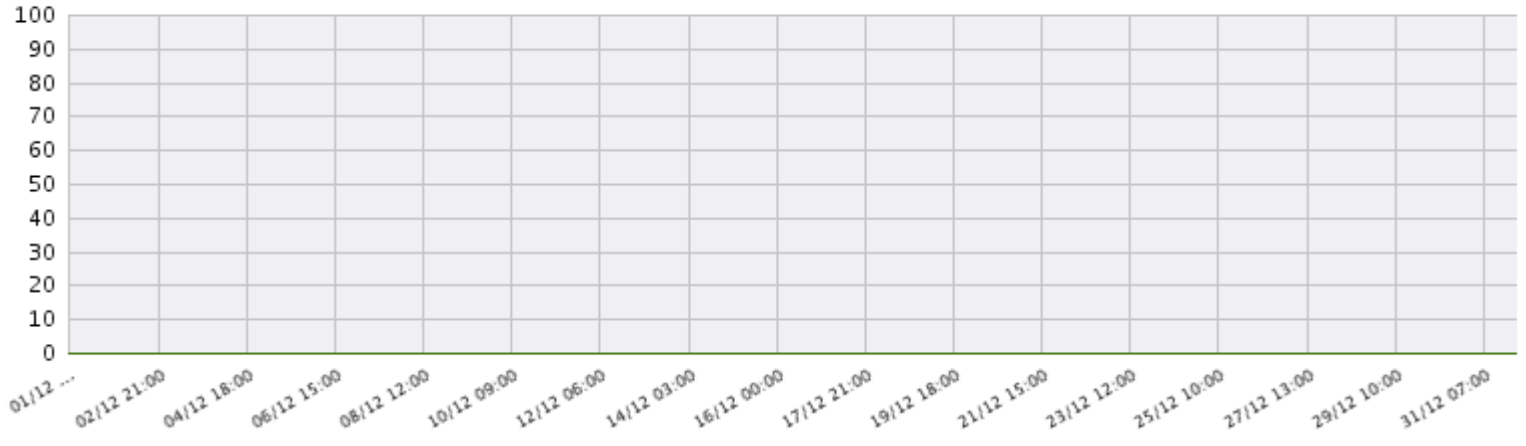
Policy Map (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Drops (kbps)



Class_Map_Name

class-default CRITICAL No Match PRIORITY VIDEO VOZ

Reporte de Calidad de Servicio, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS

Connecting and Protecting the Networked World℠

NETWORK MANAGEMENT

CAPACIDAD Y RENDIMIENTO

Tráfico Entrada/Salida y Errores

INTERNATIONAL CIVIL AVIATION ORGANIZATION
1-7GO-1873

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Diciembre 2015

Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
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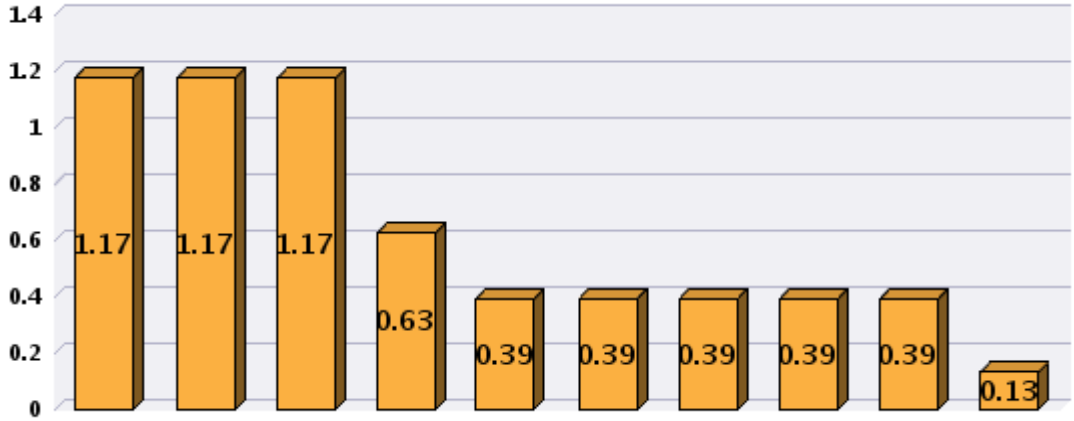
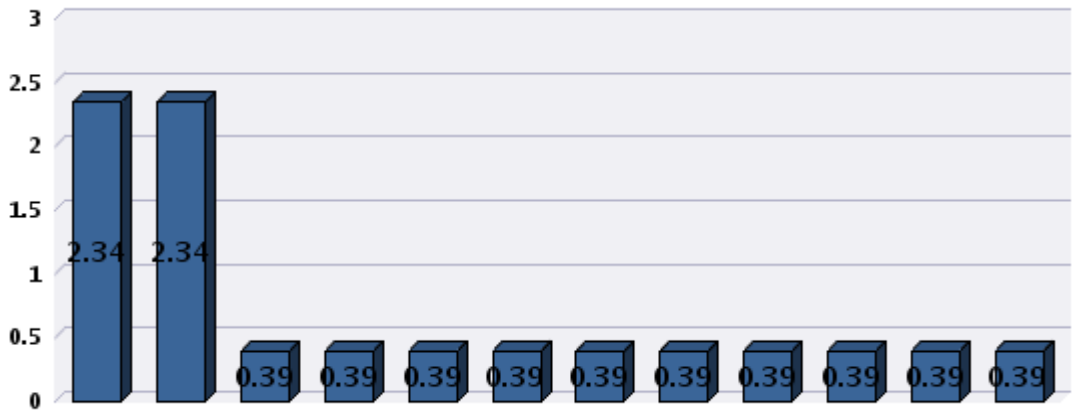
Top Percentil 95 IN (%)

OACI - BOLIVIA // ICAO_BOLIVIA.tigo.net.bo // GigabitEthernet0/1	OACI - COLOMBIA // ICAO_COLOMBIA // GigabitEthernet0/1	OACI - GUYANA FRANCESA // ICAO_FR_GUYANA.eq.ignetworks.com // GigabitEthernet0/1	OACI - BRASIL MANAUS // ICAO_MANAUSBRASIL // Multilink1	OACI - ARGENTINA // ICAO_ARGENTINA / / GigabitEthernet0/0	OACI - BOLIVIA // ICAO_BOLIVIA.tigo.net.bo // GigabitEthernet0/0	OACI - GUYANA FRANCESA // ICAO_FR_GUYANA.eq.ignetworks.com // GigabitEthernet0/0	OACI - LIMA // ICAO_PERU // GigabitEthernet0/0.2428	OACI - URUGUAY // ICAO_URUGUAY // GigabitEthernet0/0	OACI - BRASIL MANAUS // ICAO_MANAUSBRASIL // Serial0/0/0
1.17	1.17	1.17	0.63	0.39	0.39	0.39	0.39	0.39	0.13



Top Percentil 95 OUT (%)

OACI - BRASIL MANAUS // ICAO_MANAUSBRASIL // Multilink1	OACI - ECUADOR // ICAO_ECUADOR // GigabitEthernet0/0.1367	OACI - ARGENTINA // ICAO_ARGENTINA / / GigabitEthernet0/0	OACI - BOLIVIA // ICAO_BOLIVIA.tigo.net.bo // GigabitEthernet0/0	OACI - BOLIVIA // ICAO_BOLIVIA.tigo.net.bo // GigabitEthernet0/1	OACI - CHILE // ICAO_CHILE.yourdomain.com / / GigabitEthernet0/0	OACI - COLOMBIA // ICAO_COLOMBIA // GigabitEthernet0/0	OACI - GUYANA FRANCESA // ICAO_FR_GUYANA.eq.ignetworks.com // GigabitEthernet0/1	OACI - LIMA // ICAO_PERU // GigabitEthernet0/0.2428	OACI - PARAGUAY // ICAO_PARAGUAY.ineo.com.py // GigabitEthernet0/0	OACI - TRINIDAD & TOBAGO // ICAO_TRINIDAD.yourdomain.com // GigabitEthernet0/0	OACI - URUGUAY // ICAO_URUGUAY // GigabitEthernet0/0
2.34 %	2.34 %	0.39 %	0.39 %	0.39 %	0.39 %	0.39 %	0.39 %	0.39 %	0.39 %	0.39 %	0.39 %



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level 3 COMMUNICATIONS
Connecting and Protecting the Networked World

Resumen:

						Tráfico Entrada					Tráfico Salida				
Sede	**IP Loopback**	**Nombre de Interfaz**	**Alias**	**BW [Kbps]**	**Errores Prom**	**Min [%]**	**ROM [%]**	**Pe95 [%]**	**Max [%]**	**# Picos > 75%**	**Min [%]**	**ROM [%]**	**Pe95 [%]**	**Max [%]**	**# Picos > 75%**
OACI - ARGENTINA ICAO_ARGENTINA	172.21.6.193	GigabitEthernet0/0	WAN	256	0	0.00	0.09	0.39	9.77	0.00	0.00	0.25	0.39	4.30	0.00
		GigabitEthernet0/1	LAN	100000	0	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00
OACI - BOLIVIA ICAO_BOLIVIA.tigo.net.bo	172.21.6.204	GigabitEthernet0/0	---- WAN CLIENTE HACIA BBIP ----	256	0	0.00	0.08	0.39	0.39	0.00	0.00	0.04	0.39	0.78	0.00
		GigabitEthernet0/0/0	Iface Fisica Acceso	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		GigabitEthernet0/0/0.1000	Iface trafico	1000000		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		GigabitEthernet0/0/0.500	Iface O&M	1000000		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		GigabitEthernet0/1	--- LAN INTERNA ---	256	0	0.78	0.90	1.17	1.56	1.00	0.00	0.13	0.39	0.78	0.00
OACI - BRASIL CURITIBA ICAO_CURITIBA	172.20.26.63	GigabitEthernet0/0	LAN	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Multilink1	WAN	256	0	0.00	0.01	0.00	0.39	0.00	0.00	0.01	0.00	0.78	0.00
		Serial0/0/0	WAN	256	0	0.00	0.01	0.00	0.78	0.00	0.00	0.01	0.00	0.78	0.00
OACI - BRASIL MANAUS ICAO_MANAUSBRASIL	172.21.6.192	GigabitEthernet0/0	LAN	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
		Multilink1	WAN_P24941_1BRAA01D.0007	256	0	0.00	0.56	0.63	26.17	1.00	0.00	2.34	2.34	2.73	2.00
		Serial0/0/0	WAN_P24941_1BRAA01D.0007	1544	0	0.00	0.09	0.13	4.60	0.00	0.00	0.39	0.39	0.45	0.00
OACI - BRASIL RECIFE ICAO_RECIFE	172.20.26.62	GigabitEthernet0/0	LAN	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Multilink1	WAN_P24944_1BRAA01D.0006	256	0	0.00	0.04	0.00	3.52	0.00	0.00	0.00	0.00	0.78	0.00
		Serial0/0/0	WAN_P24944_1BRAA01D.0006	256	0	0.00	0.04	0.00	3.91	0.00	0.00	0.00	0.00	0.78	0.00

Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level 3 COMMUNICATIONS
Connecting and Protecting the Networked World

						Tráfico Entrada					Tráfico Salida				
Sede	**IP Loopback**	**Nombre de Interfaz**	**Alias**	**BW [Kbps]**	**Errores Prom**	**Min [%]**	**ROM [%]**	**Pe95 [%]**	**Max [%]**	**# Picos > 75%**	**Min [%]**	**ROM [%]**	**Pe95 [%]**	**Max [%]**	**# Picos > 75%**
OACI - CHILE ICAO_CHILE.yourdomain.com	172.21.6.197	GigabitEthernet0/0	WAN_Movistar	256	0	0.00	0.01	0.00	1.17	0.00	0.39	0.39	0.39	1.17	0.00
		GigabitEthernet0/1	LAN PRINCIPAL	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OACI - COLOMBIA ICAO_COLOMBIA	172.21.6.196	GigabitEthernet0/0	---- WAN CLIENTE HACIA BBIP ----	256	0	0.00	0.01	0.00	0.78	0.00	0.39	0.39	0.39	0.78	0.00
		GigabitEthernet0/1	--- LAN INTERNA ---	256	0	0.78	0.97	1.17	1.56	1.00	0.00	0.01	0.00	1.17	0.00
OACI - ECUADOR ICAO_ECUADOR	172.21.6.195	GigabitEthernet0/0.1367	WAN	256		0.00	0.03	0.00	2.34	0.00	0.00	0.95	2.34	34.77	1.00
OACI - GUYANA ICAO_GUYANA.yourdomain.com	172.21.6.200	GigabitEthernet0/0	WAN	100000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		GigabitEthernet0/1	LAN	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OACI - GUYANA FRANCESA ICAO_FR_GUYANA.eq.ignetworks.com	172.21.6.201	GigabitEthernet0/0	---- WAN CLIENTE HACIA BBIP ----	256	0	0.00	0.08	0.39	0.78	0.00	0.00	0.00	0.00	0.78	0.00
		GigabitEthernet0/1	--- LAN INTERNA ---	256	0	0.00	0.80	1.17	1.56	1.00	0.00	0.21	0.39	0.78	0.00
OACI - LIMA ICAO_PERU	172.20.26.50	GigabitEthernet0/0.2428	WAN	256		0.39	0.48	0.39	11.72	1.00	0.39	0.55	0.39	25.78	1.00
OACI - PARAGUAY ICAO_PARAGUAY.ineo.com.py	172.21.6.199	GigabitEthernet0/0	a psr1.ats1.eze interface ae2.501	256	0	0.00	0.01	0.00	1.56	0.00	0.39	0.40	0.39	3.52	0.00
		GigabitEthernet0/1	Customer_LAN	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OACI - SURINAME ICAO_SURINAME.yourdomain.com	172.21.6.203	GigabitEthernet0/0	WAN	256	0	0.00	0.01	0.00	0.39	0.00	0.00	0.00	0.00	0.39	0.00
		GigabitEthernet0/1	LAN	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OACI - TRINIDAD & TOBAGO ICAO_TRINIDAD.yourdomain.com	172.21.6.194	GigabitEthernet0/0	a rpar1.sfd1.sfd GigabitEthernet0/1.210	256	0	0.00	0.00	0.00	0.39	0.00	0.39	0.40	0.39	2.34	0.00
		GigabitEthernet0/1	Customer_LAN	100000	0	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
OACI - URUGUAY ICAO_URUGUAY	172.21.6.198	GigabitEthernet0/0	WAN a psr1.ats1.eze ae0.2324	256	0	0.39	0.42	0.39	12.11	0.00	0.00	0.28	0.39	17.58	0.00

Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

						Tráfico Entrada					Tráfico Salida				
Sede	**IP Loopback**	**Nombre de Interfaz**	**Alias**	**BW [Kbps]**	**Errores Prom**	**Min [%]**	**ROM [%]**	**Pe95 [%]**	**Max [%]**	**# Picos > 75%**	**Min [%]**	**ROM [%]**	**Pe95 [%]**	**Max [%]**	**# Picos > 75%**
OACI - URUGUAY ICAO_URUGUAY	172.21.6.198	GigabitEthernet0/1	LAN de DATOS	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OACI - VENEZUELA ICAO_VENEZUELA	172.21.6.202	GigabitEthernet0/0.2196	"CONEXION WAN"	256		0.00	0.01	0.00	0.78	0.00	0.00	0.01	0.00	0.39	0.00
		GigabitEthernet0/1	"CONEXION LAN"	1000000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

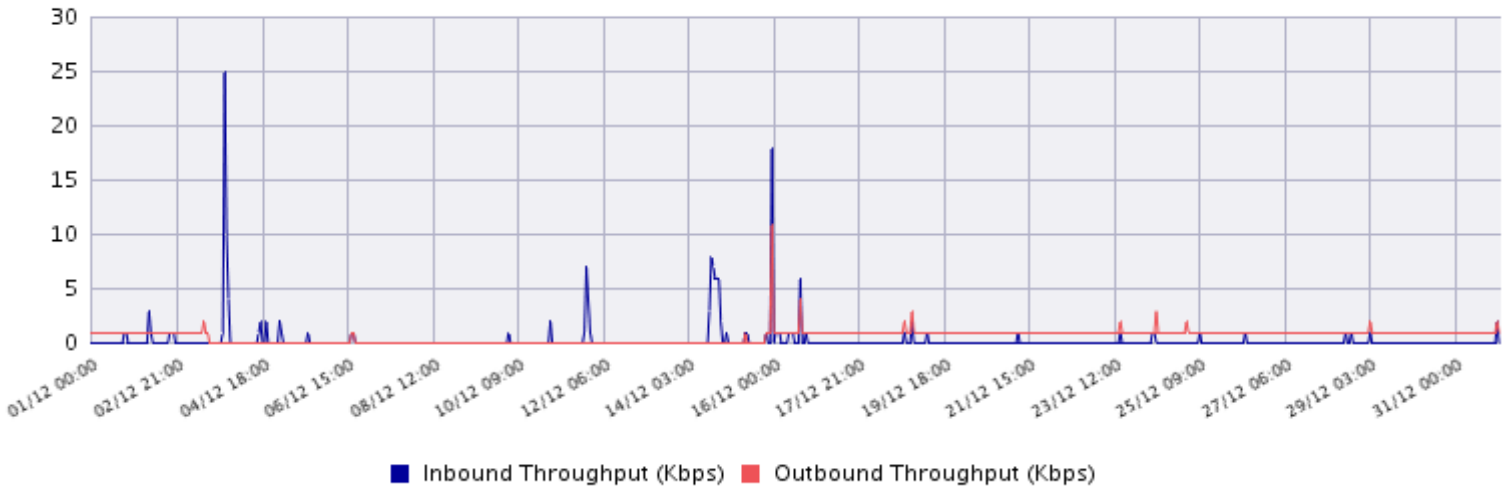
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

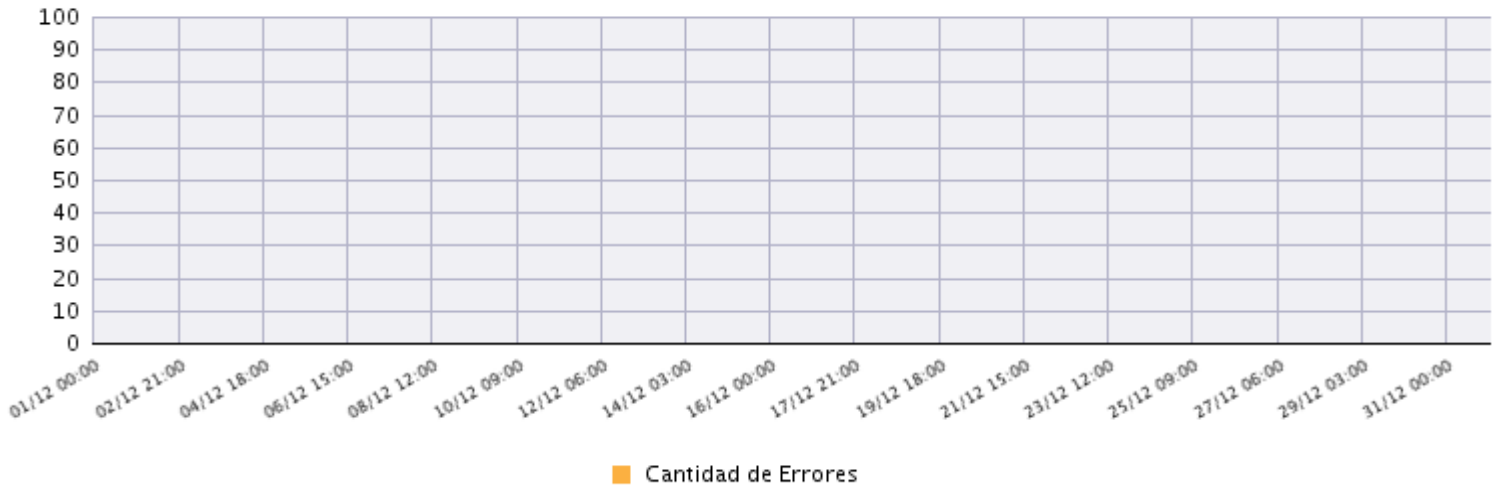
Sede	**OACI - ARGENTINA**
Equipo	**ICAO_ARGENTINA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.193)**
Ciudad	**Ezeiza**

Interface: GigabitEthernet0/0 - WAN - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.22 | Out: 0.64) - MAX (In: 25 | Out: 11) - MIN (In: 0 | Out: 0) - PE95 (In: 1 | Out: 1)



Cantidad de Errores: 0



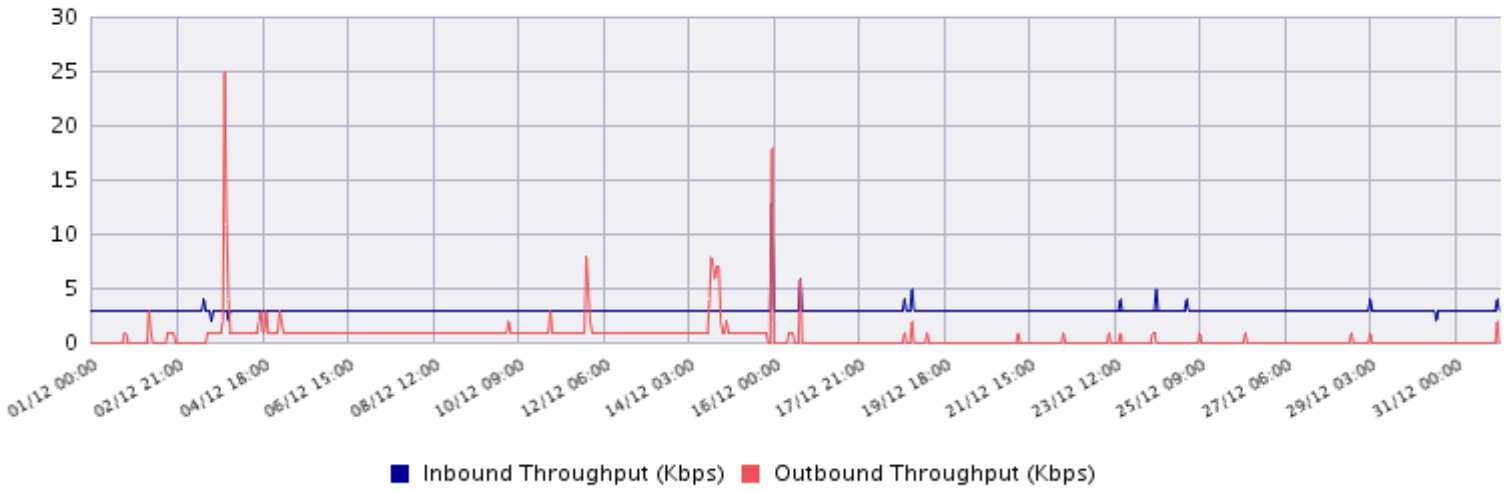
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

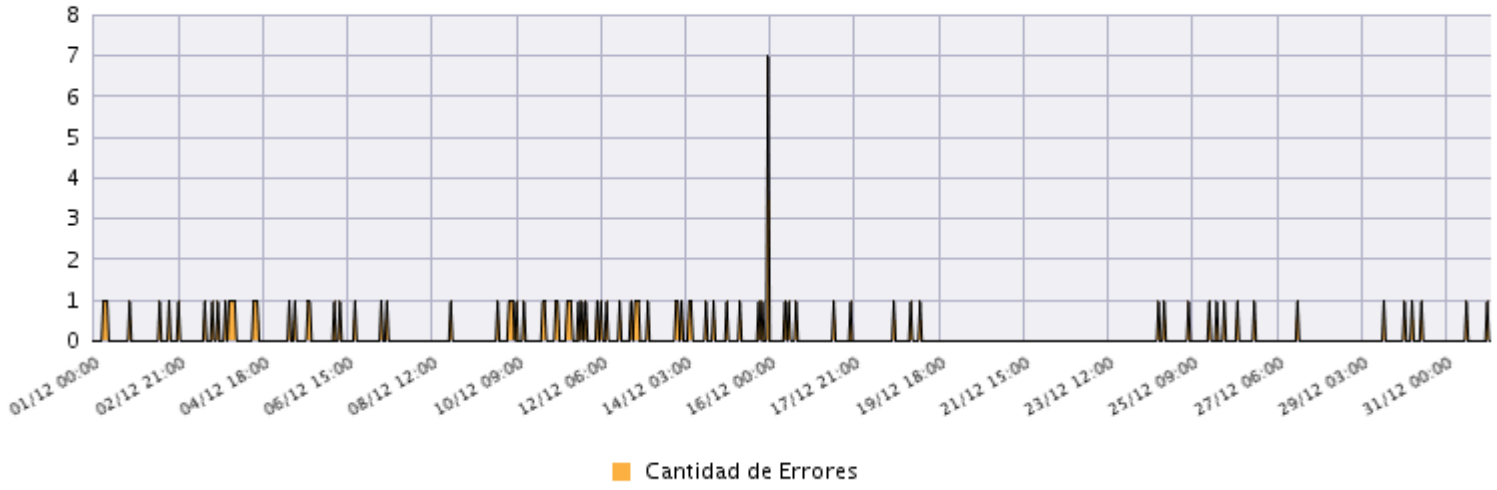
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - LAN - Bandwidth: 100,000 Kbps

VALUES [Kbps]: PROM: (In: 3.03 | Out: 0.6) - MAX (In: 13 | Out: 25) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 1)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

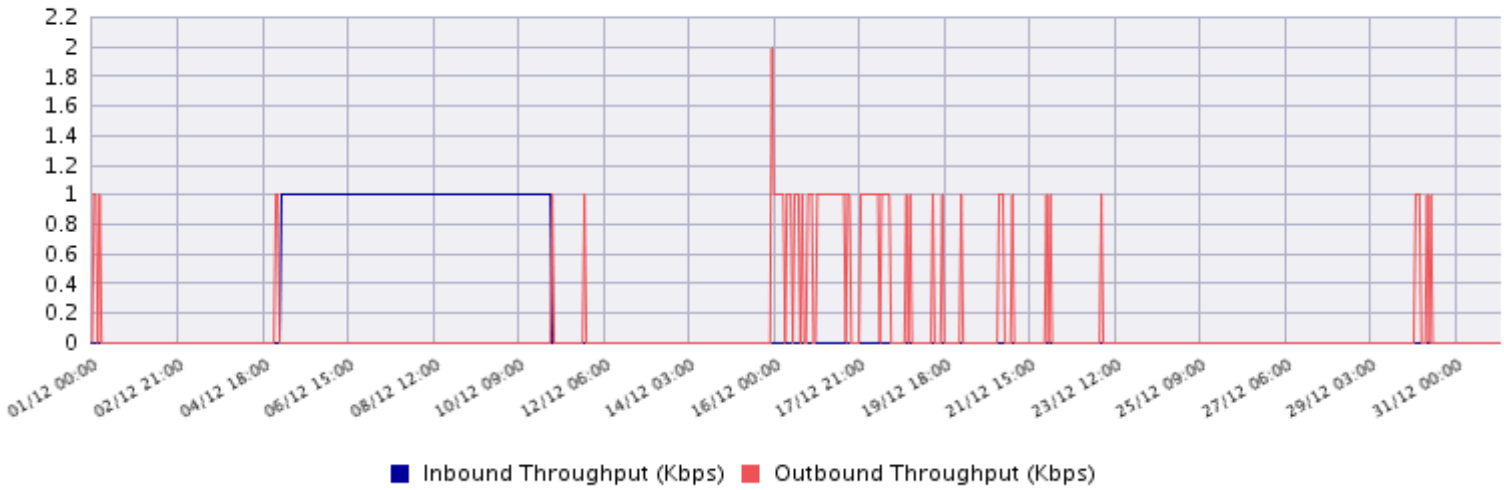
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

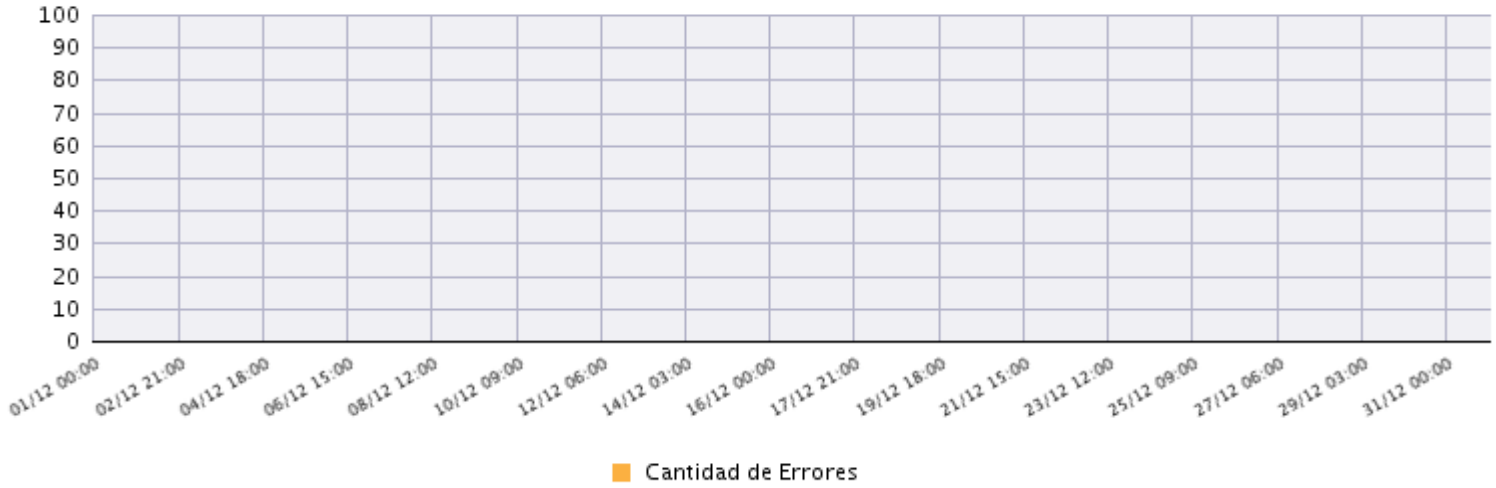
Sede	**OACI - BOLIVIA**
Equipo	**ICAO_BOLIVIA.tigo.net.bo**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.204)**
Ciudad	**La Paz**

Interface: GigabitEthernet0/0 - ---- WAN CLIENTE HACIA BBIP ---- - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.19 | Out: 0.1) - MAX (In: 1 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 1 | Out: 1)



Cantidad de Errores: 0



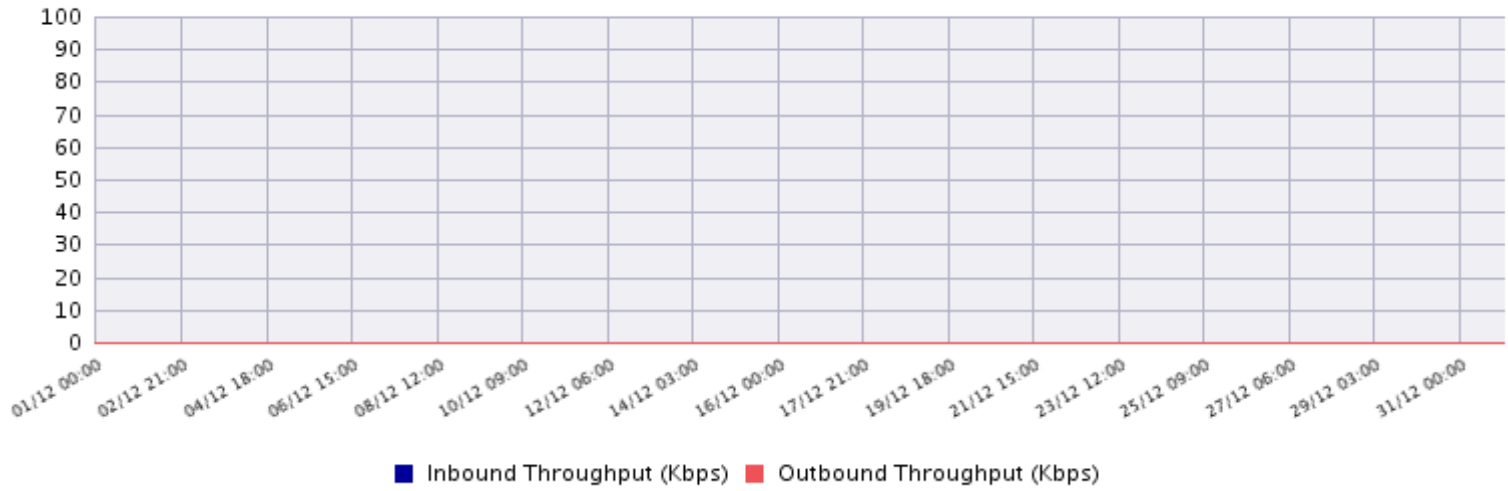
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

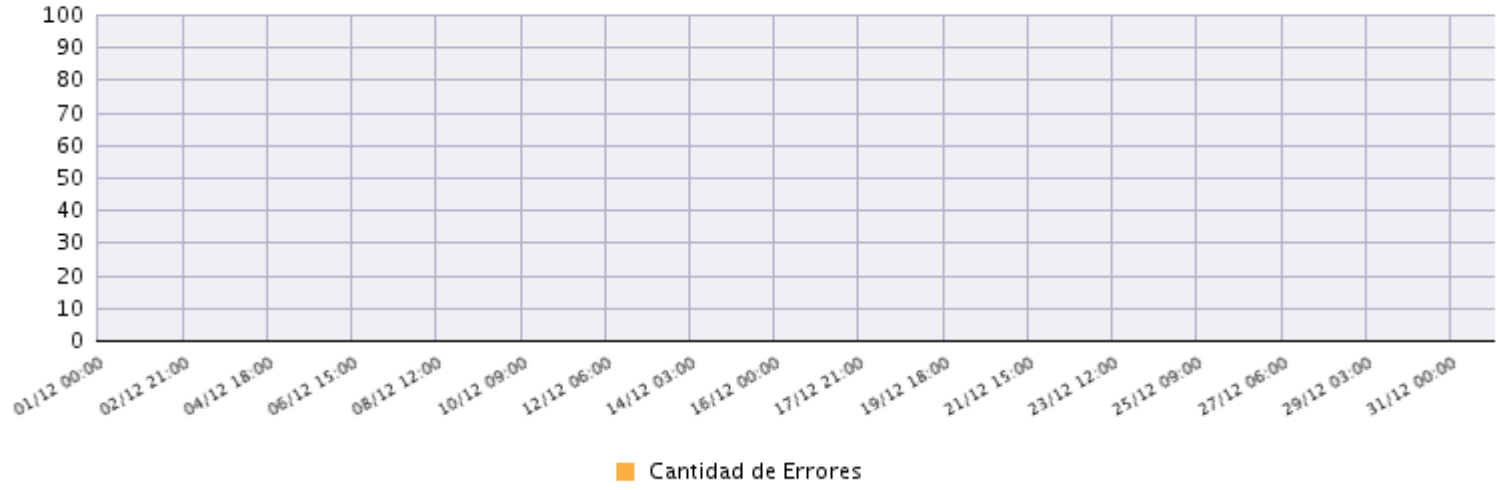
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/0/0 - Iface Fisica Acceso - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 0 | Out: 0) - MAX (In: 0 | Out: 0) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Cantidad de Errores: 0



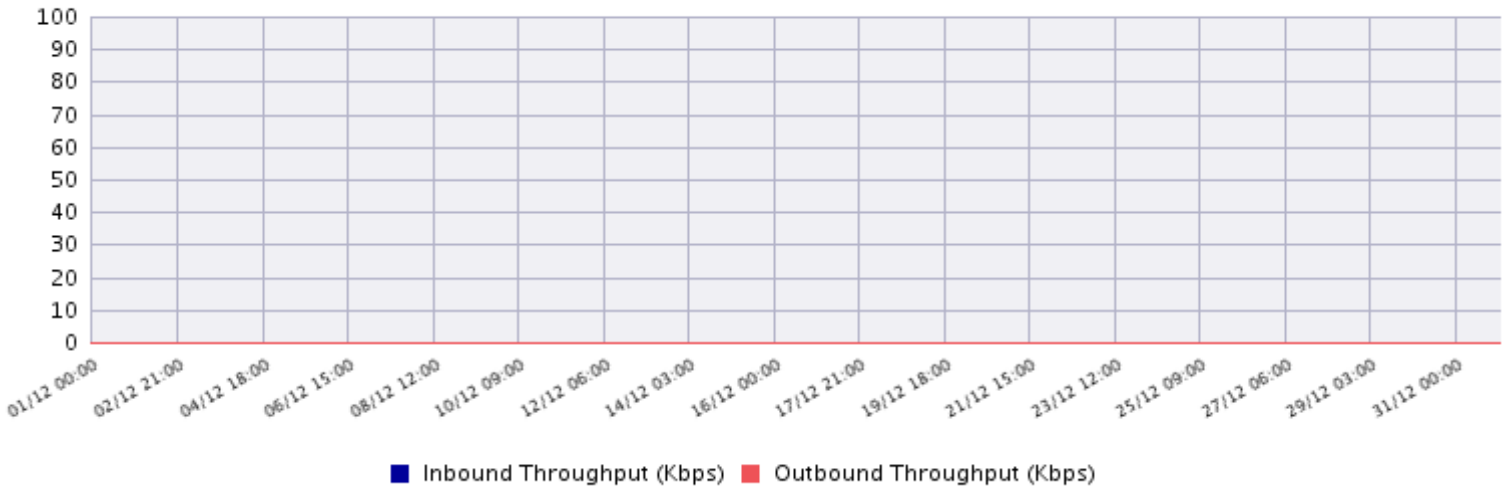
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

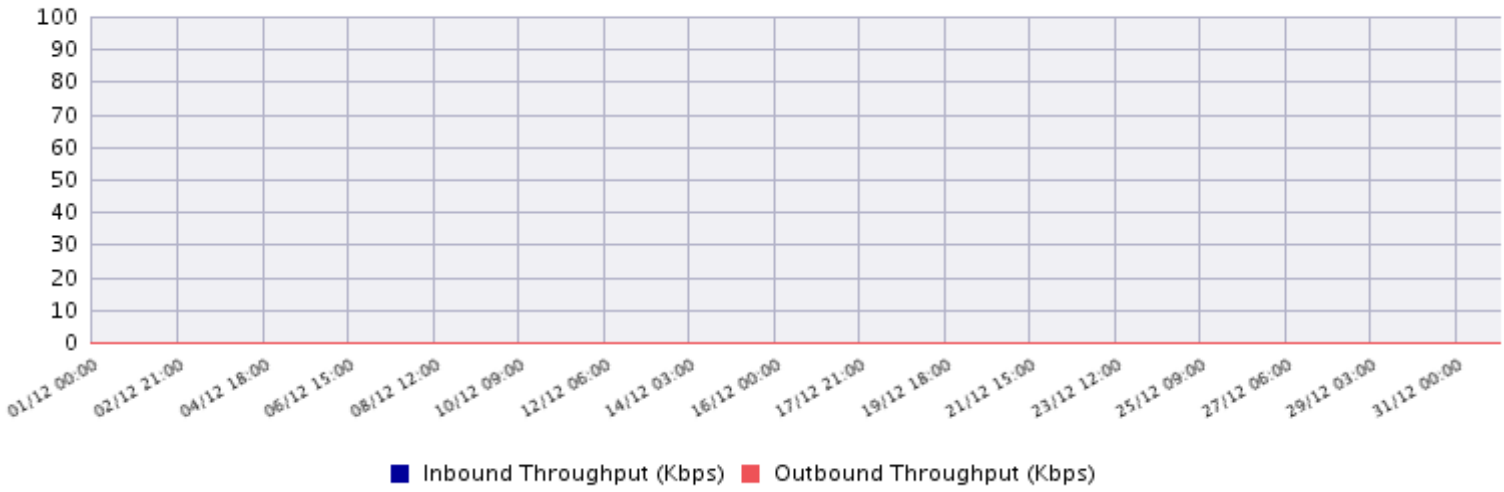
Interface: GigabitEthernet0/0/0.1000 - Iface trafico - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 0 | Out: 0) - MAX (In: 0 | Out: 0) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Interface: GigabitEthernet0/0/0.500 - Iface O&M - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 0 | Out: 0) - MAX (In: 0 | Out: 0) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



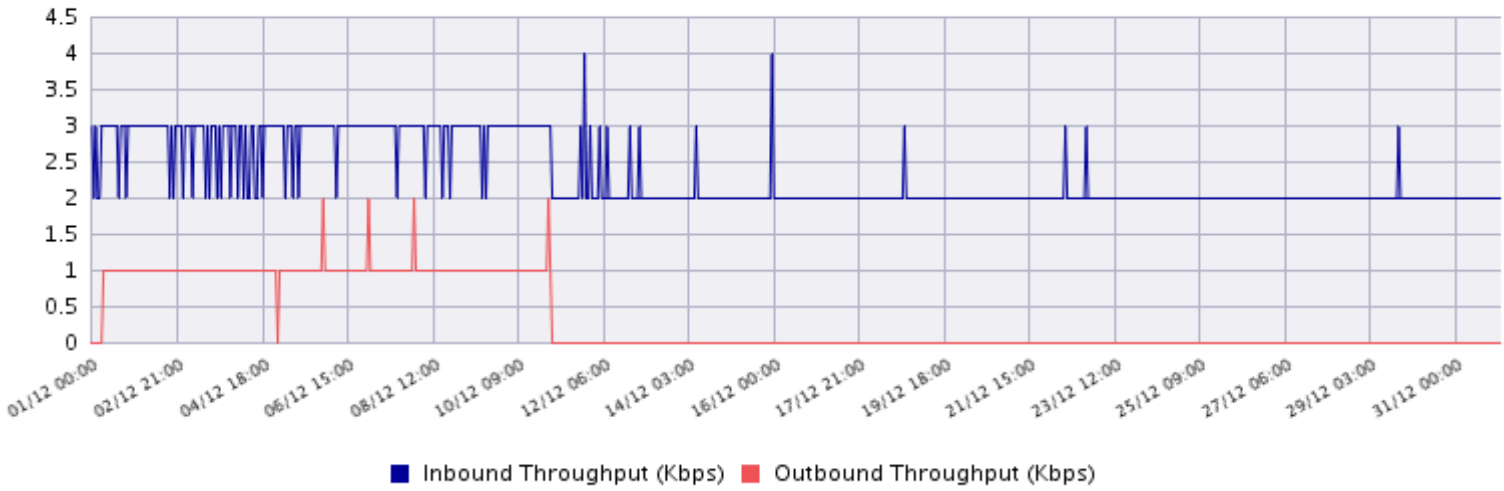
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

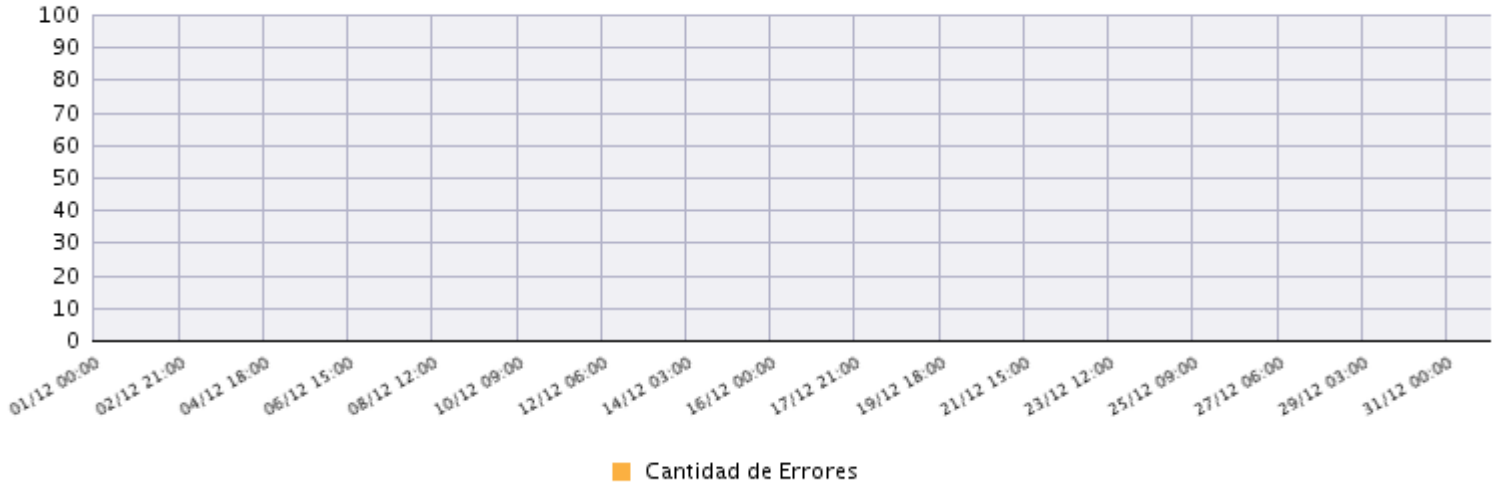
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - --- LAN INTERNA --- - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 2.31 | Out: 0.32) - MAX (In: 4 | Out: 2) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 1)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

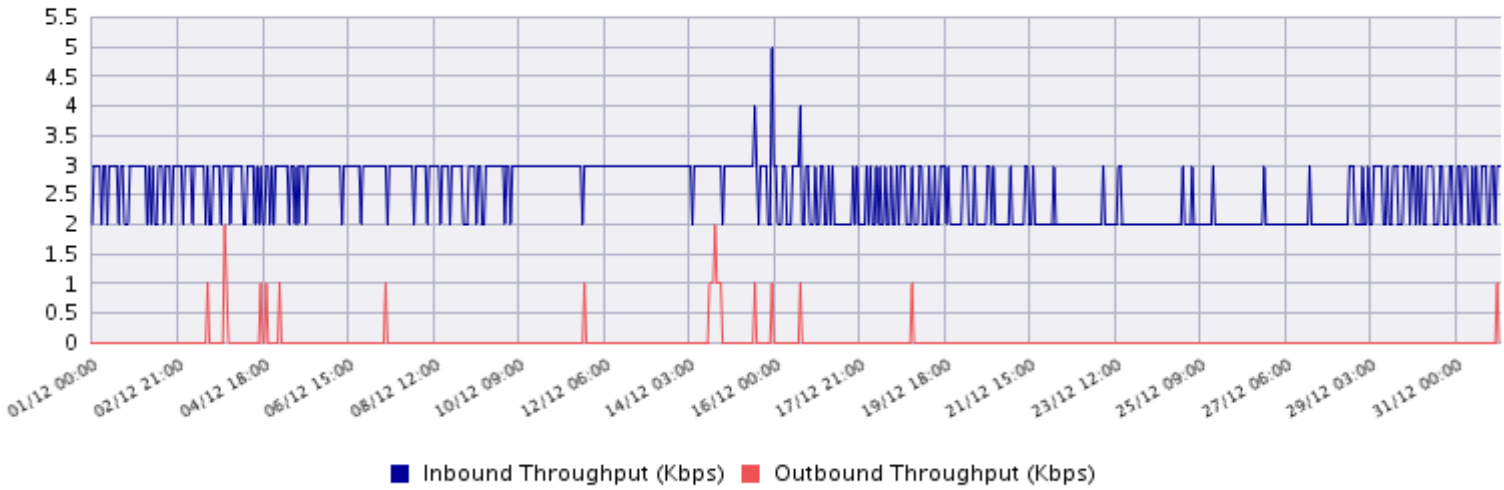
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

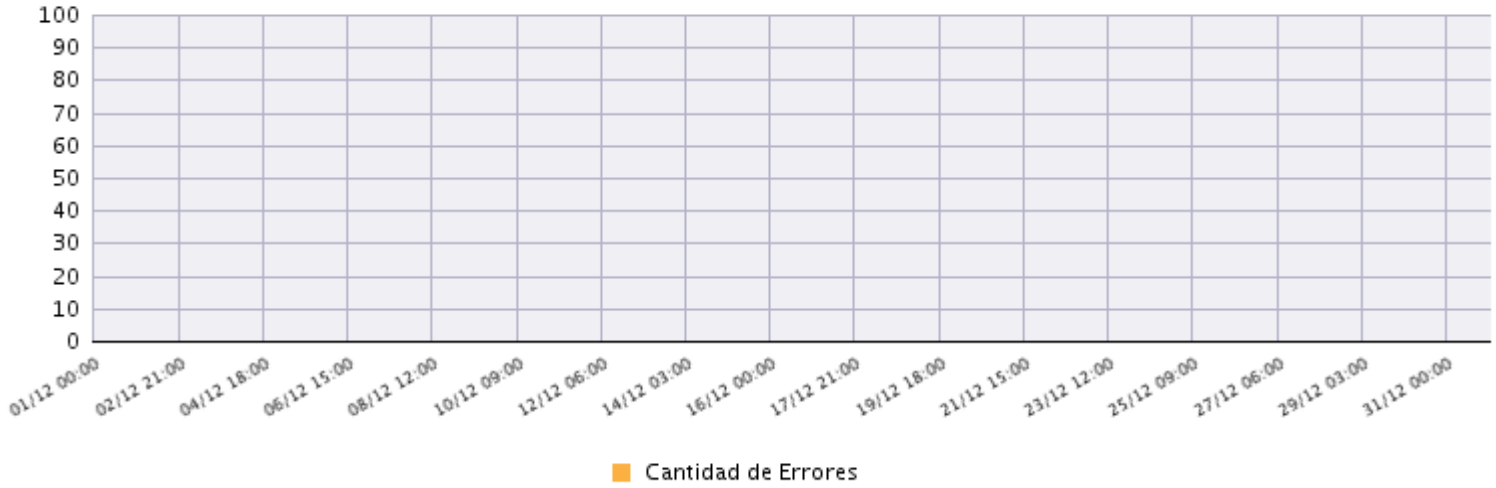
Sede	**OACI - BRASIL CURITIBA**
Equipo	**ICAO_CURITIBA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.20.26.63)**
Ciudad	**Curitiba**

Interface: GigabitEthernet0/0 - LAN - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 2.55 | Out: 0.03) - MAX (In: 5 | Out: 2) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 0)



Cantidad de Errores: 0



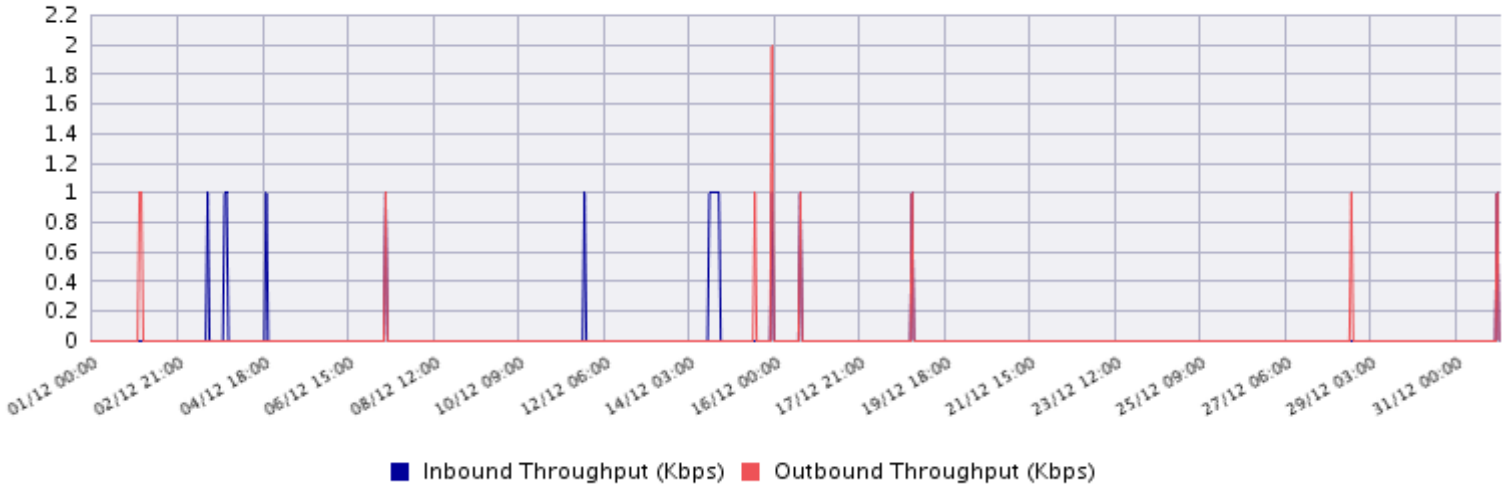
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

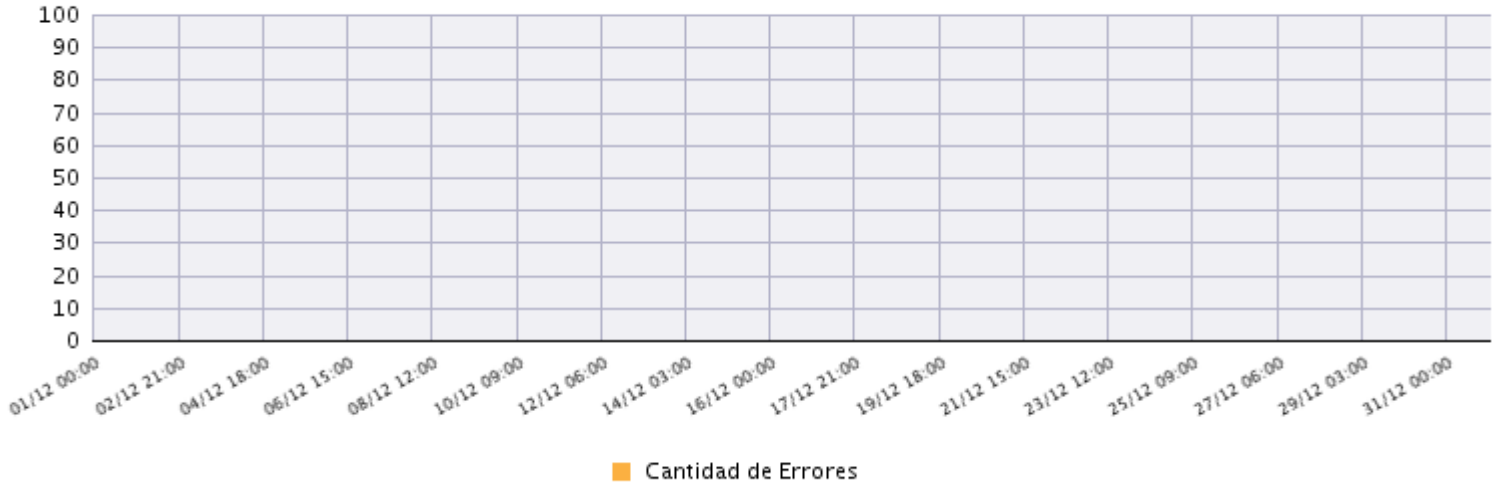
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: Multilink1 - WAN - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.02 | Out: 0.01) - MAX (In: 1 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Cantidad de Errores: 0



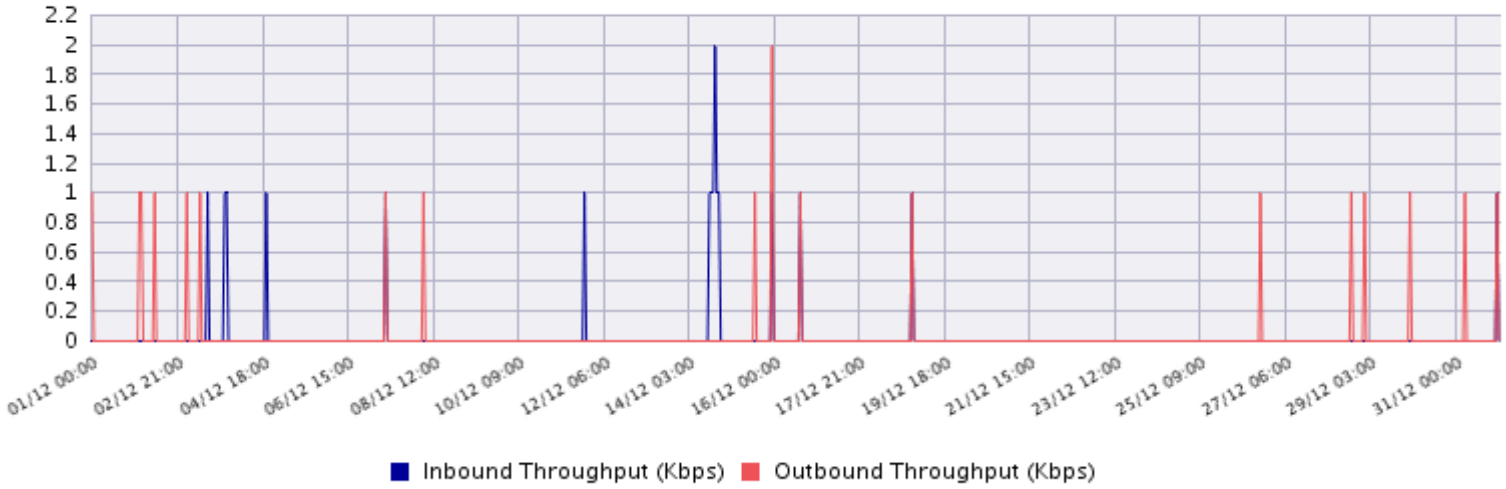
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

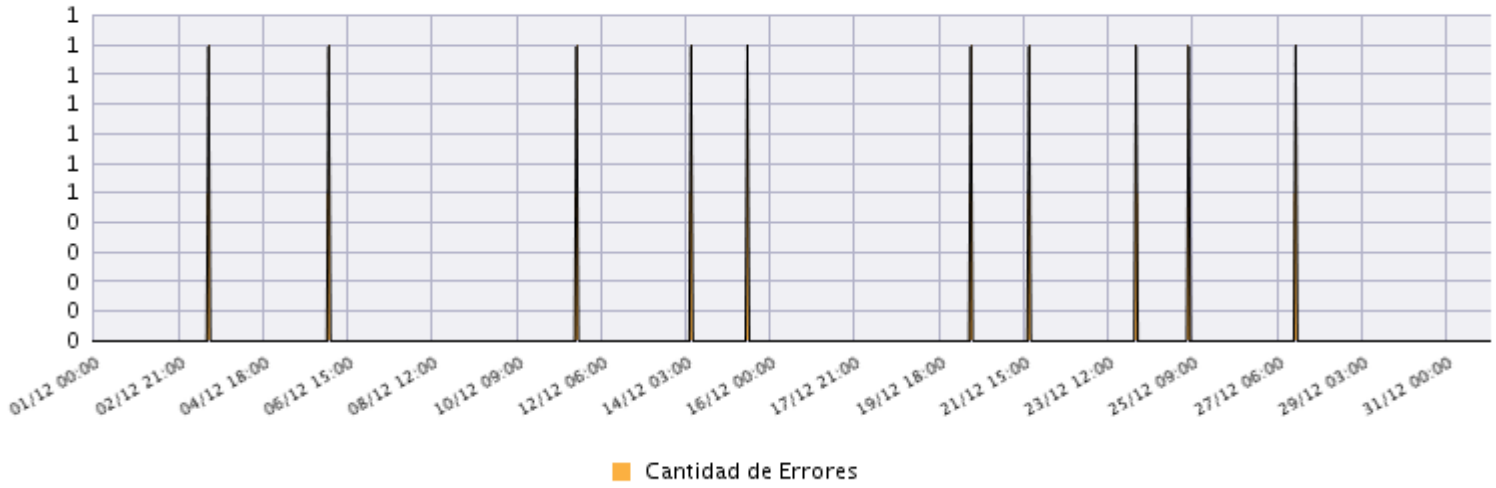
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: Serial0/0/0 - WAN - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.02 | Out: 0.03) - MAX (In: 2 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

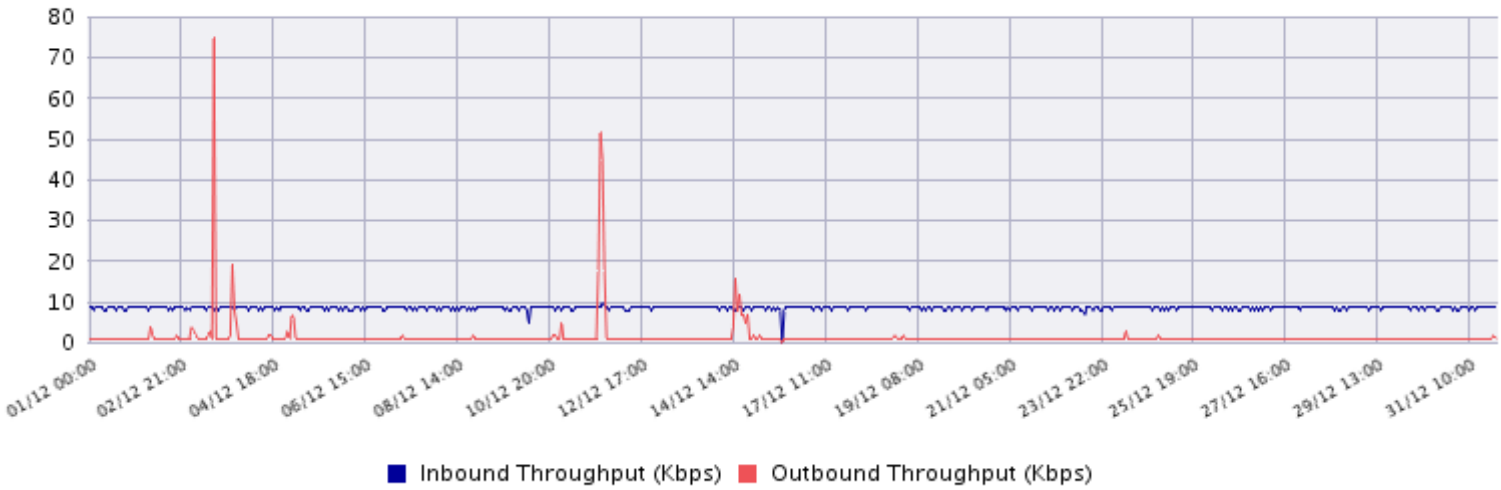
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

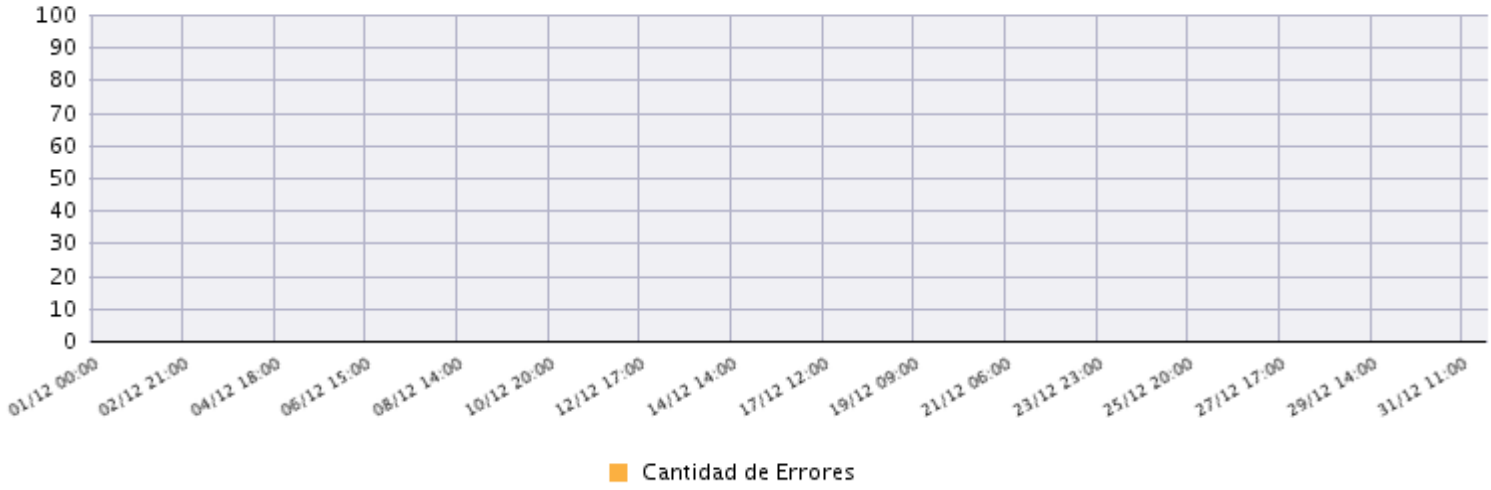
Sede	**OACI - BRASIL MANAUS**
Equipo	**ICAO_MANAUSBRASIL**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.192)**
Ciudad	**Manaus**

Interface: GigabitEthernet0/0 - LAN - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 8.79 | Out: 1.49) - MAX (In: 10 | Out: 75) - MIN (In: 0 | Out: 0) - PE95 (In: 9 | Out: 2)



Cantidad de Errores: 0



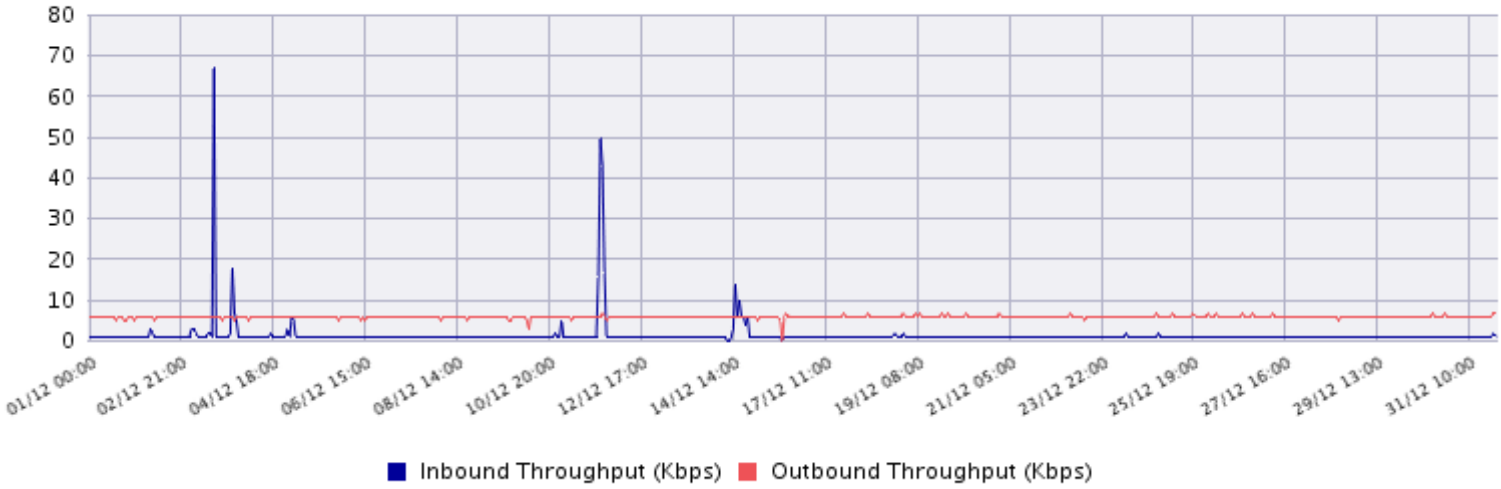
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

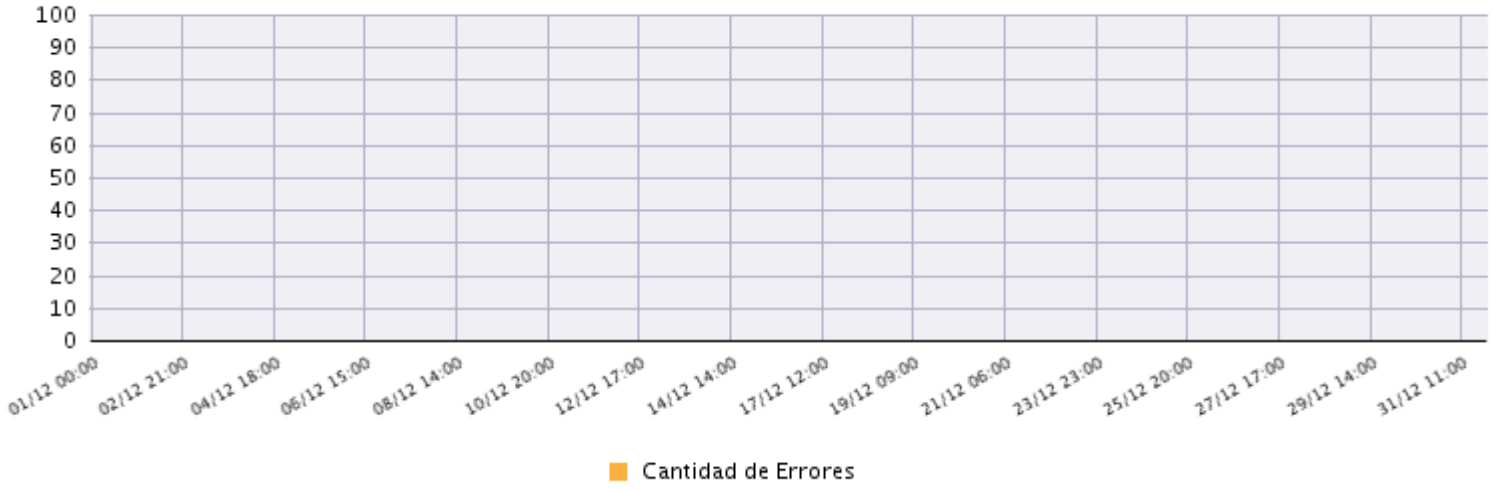
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: Multilink1 - WAN_P24941_1BRAA01D.0007 - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 1.42 | Out: 5.99) - MAX (In: 67 | Out: 7) - MIN (In: 0 | Out: 0) - PE95 (In: 1.6 | Out: 6)



Cantidad de Errores: 0



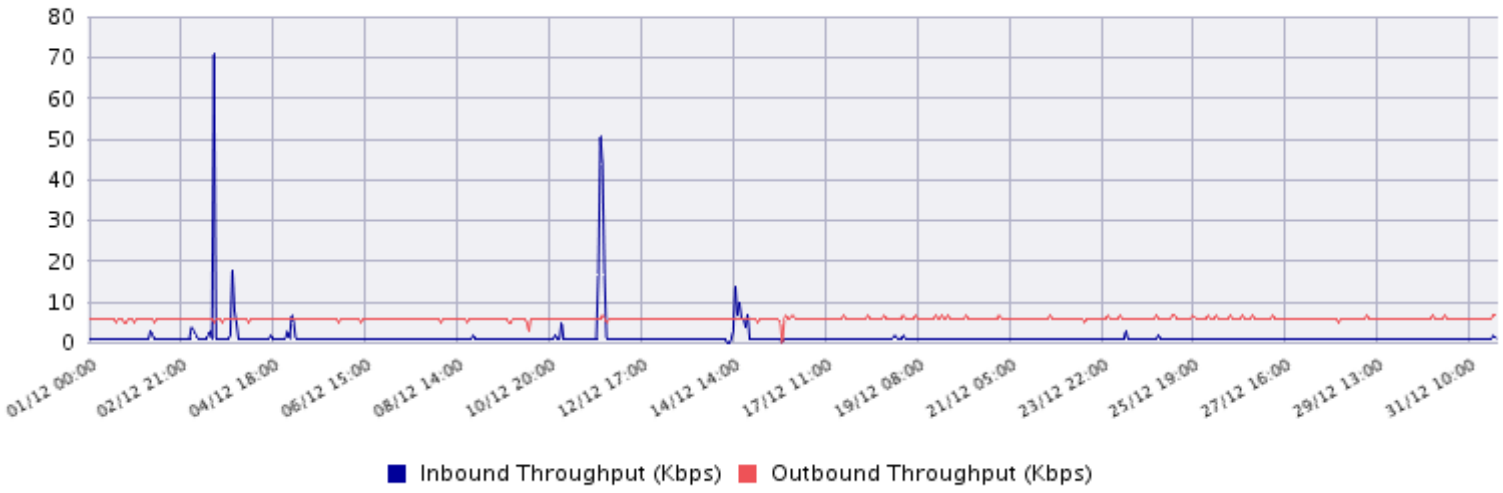
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

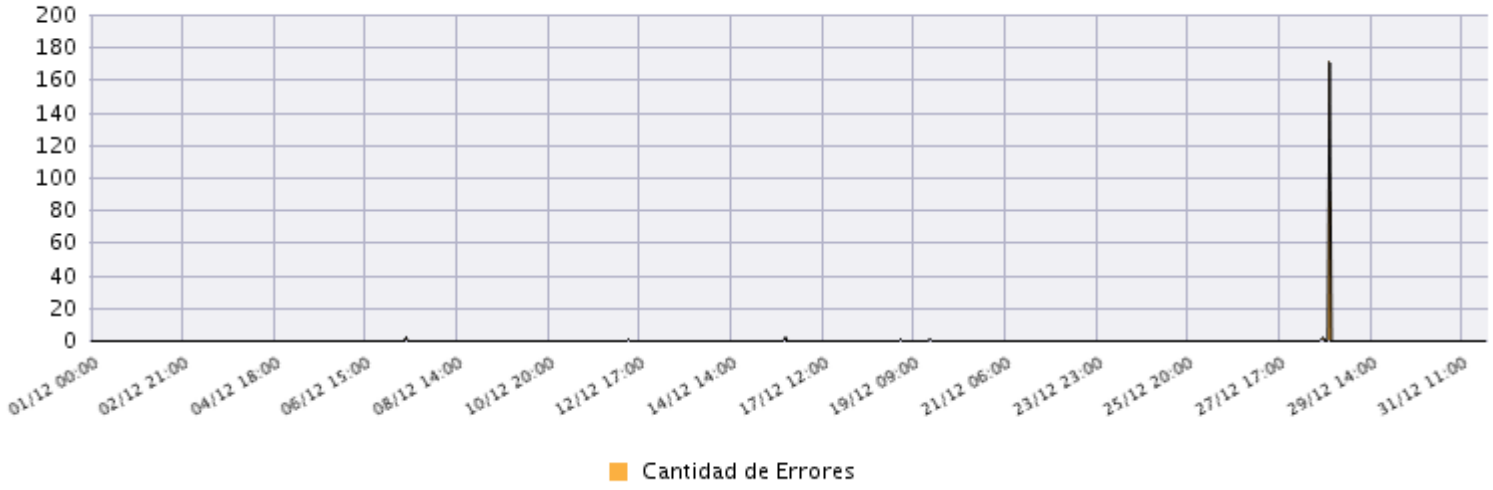
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: Serial0/0/0 - WAN_P24941_1BRAA01D.0007 - Bandwidth: 1,544 Kbps

VALUES [Kbps]: PROM: (In: 1.45 | Out: 6) - MAX (In: 71 | Out: 7) - MIN (In: 0 | Out: 0) - PE95 (In: 2 | Out: 6)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

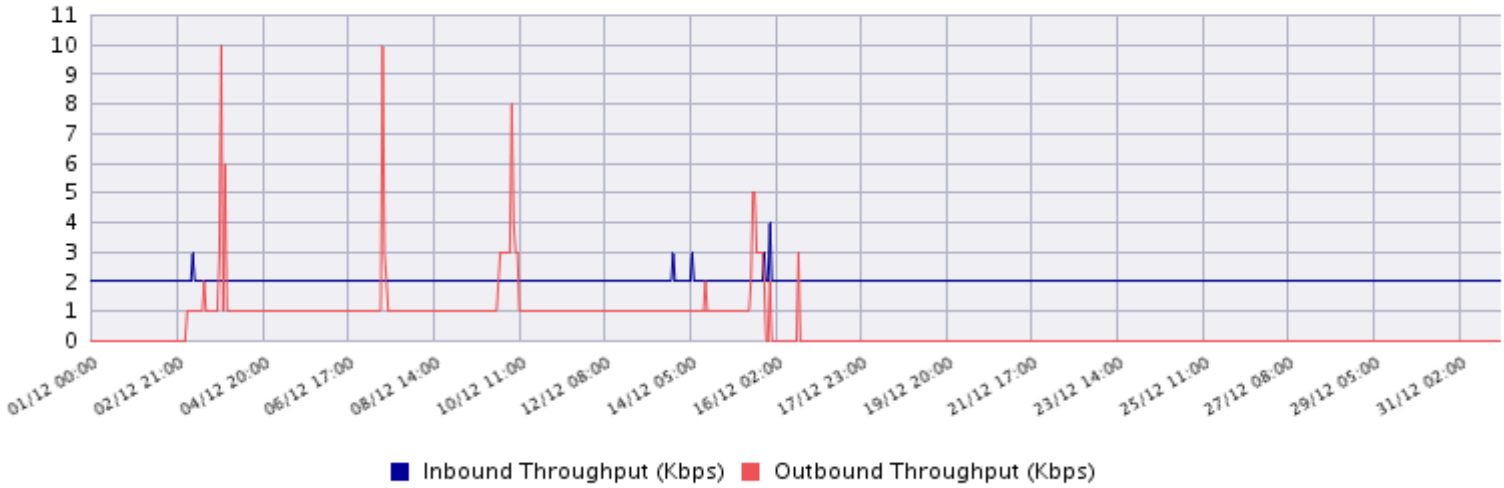
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

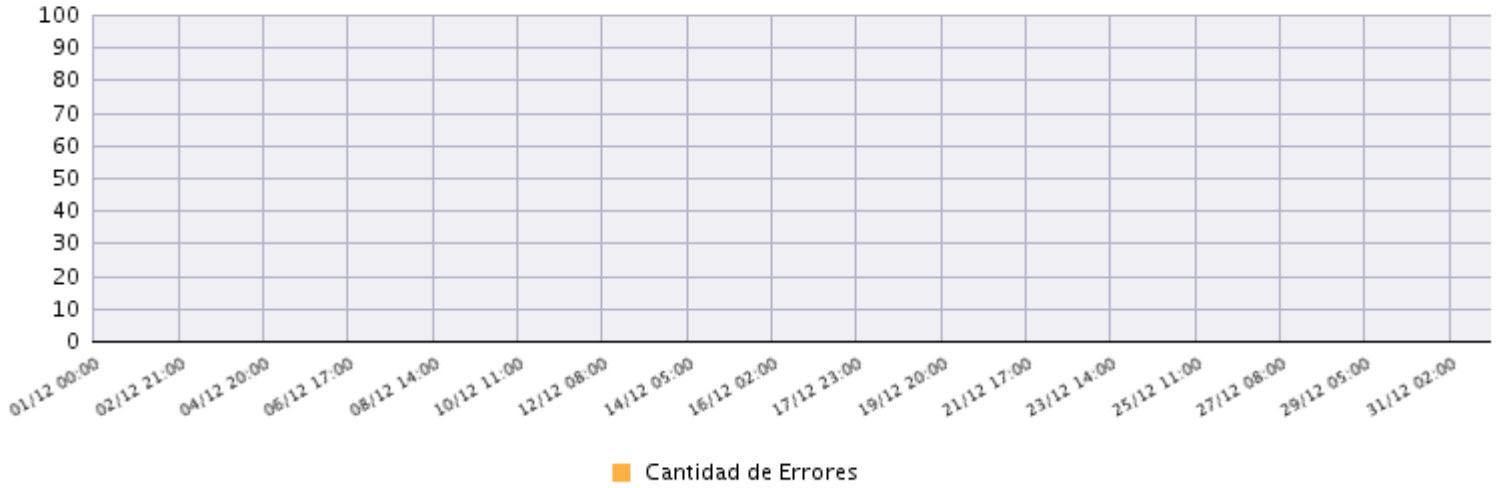
Sede	**OACI - BRASIL RECIFE**
Equipo	**ICAO_RECIFE**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.20.26.62)**
Ciudad	**Recife**

Interface: GigabitEthernet0/0 - LAN - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 2.01 | Out: 0.52) - MAX (In: 4 | Out: 10) - MIN (In: 2 | Out: 0) - PE95 (In: 2 | Out: 1)



Cantidad de Errores: 0



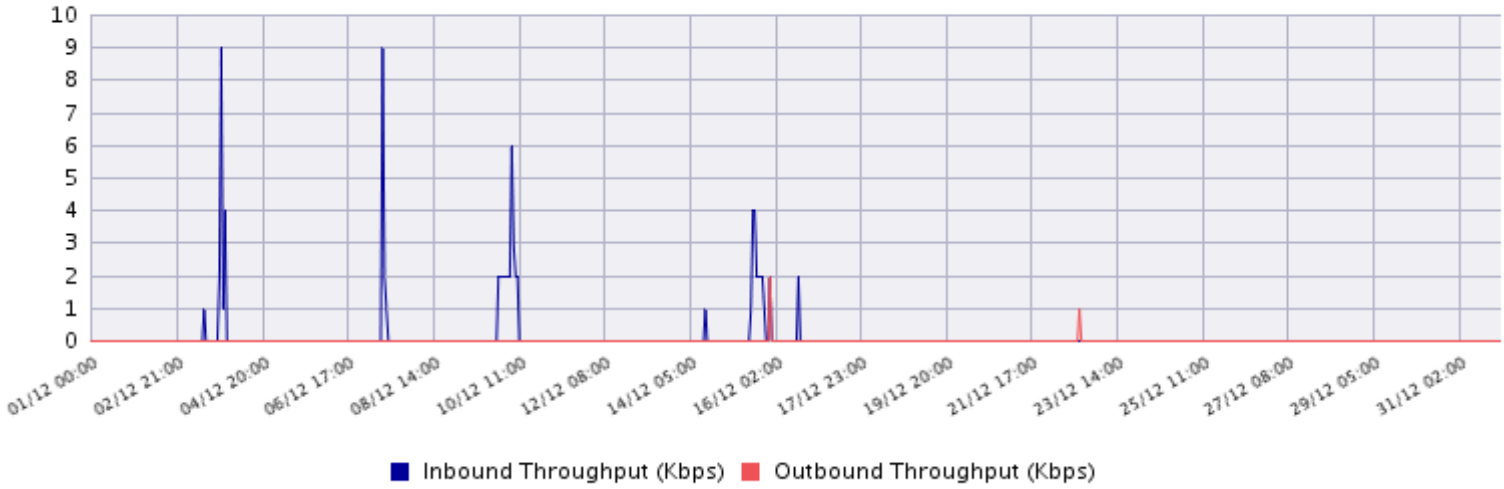
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

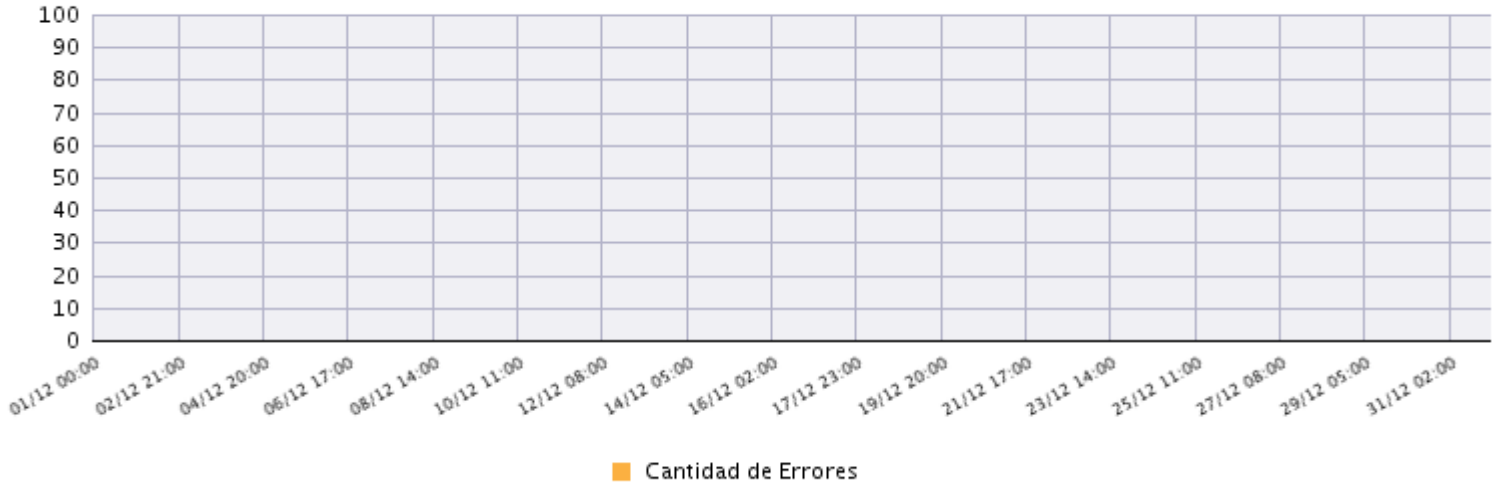
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: Multilink1 - WAN_P24944_1BRAA01D.0006 - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.11 | Out: 0) - MAX (In: 9 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Cantidad de Errores: 0



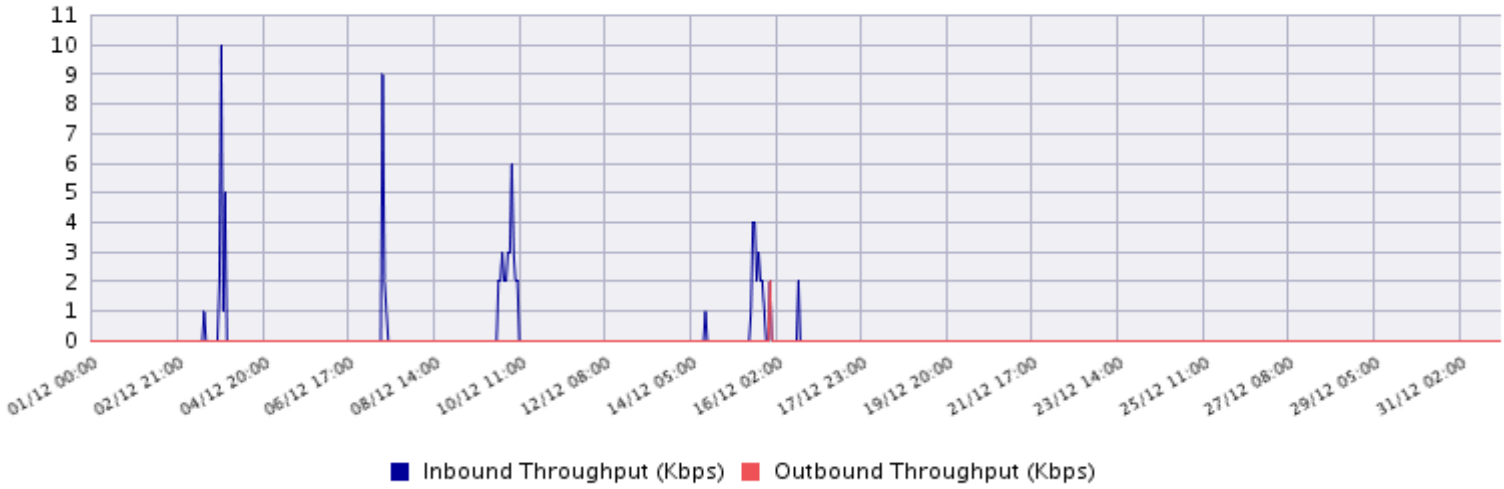
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

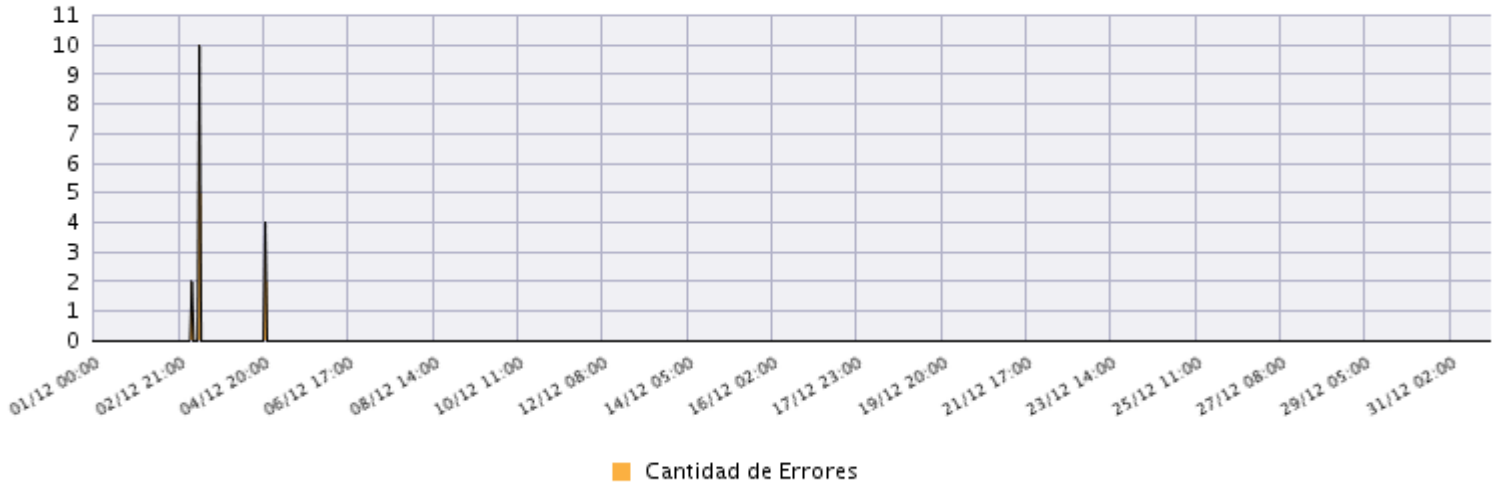
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: Serial0/0/0 - WAN_P24944_1BRAA01D.0006 - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.11 | Out: 0) - MAX (In: 10 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

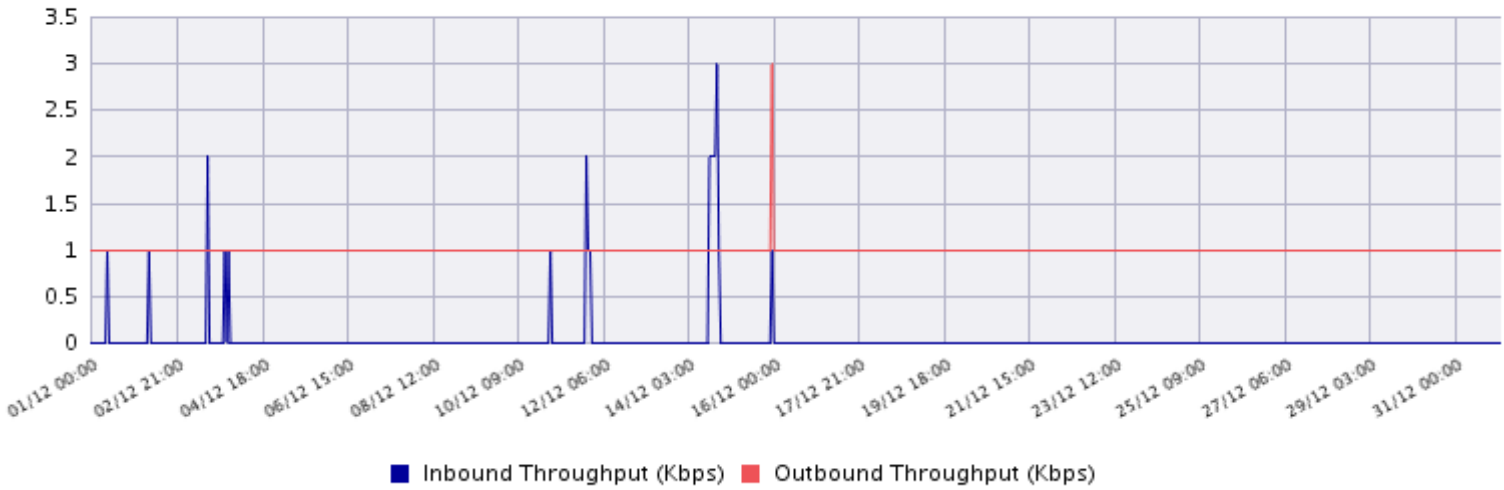
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

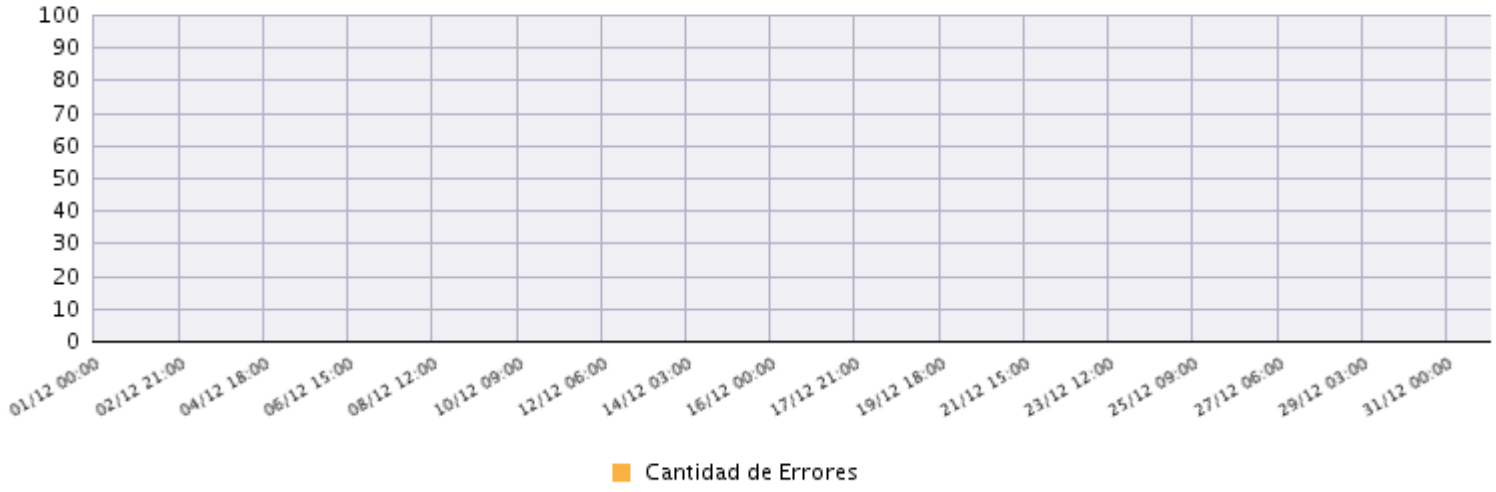
Sede	**OACI - CHILE**
Equipo	**ICAO_CHILE.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.197)**
Ciudad	**Santiago de Chile**

Interface: GigabitEthernet0/0 - WAN_Movistar - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.03 | Out: 1) - MAX (In: 3 | Out: 3) - MIN (In: 0 | Out: 1) - PE95 (In: 0 | Out: 1)



Cantidad de Errores: 0



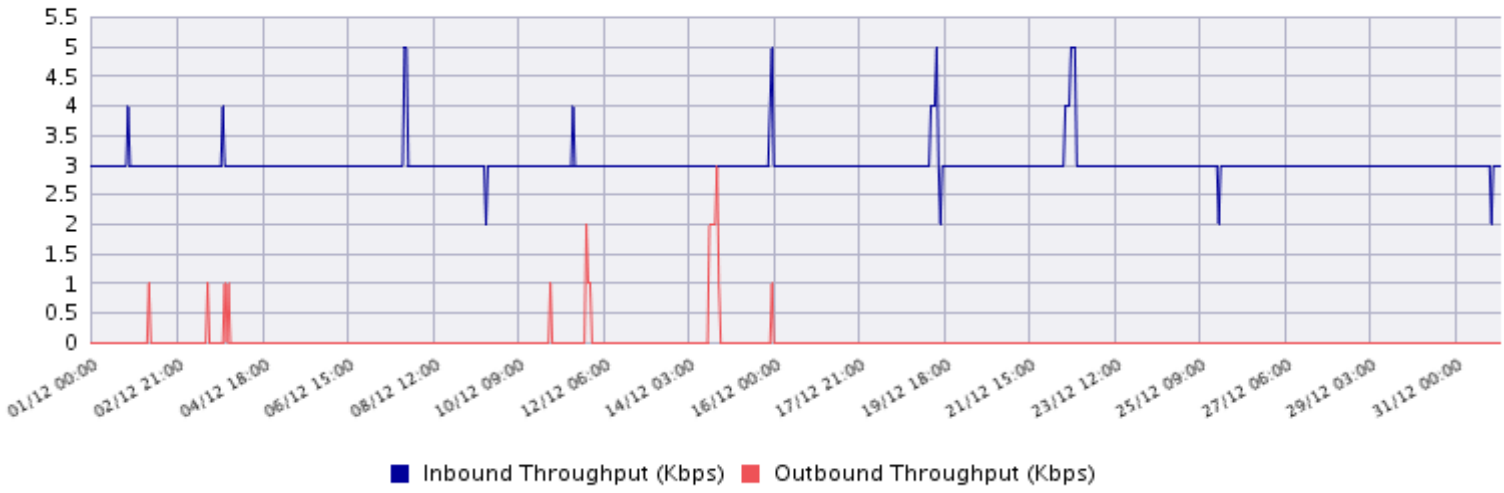
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

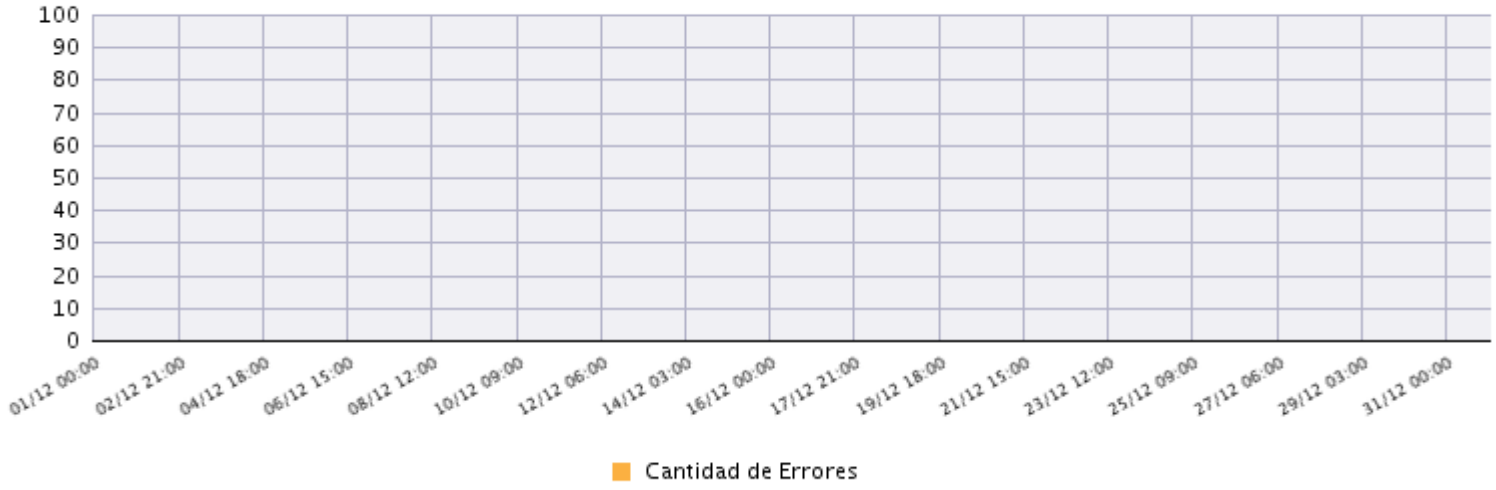
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - LAN PRINCIPAL - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 3.03 | Out: 0.03) - MAX (In: 5 | Out: 3) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 0)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

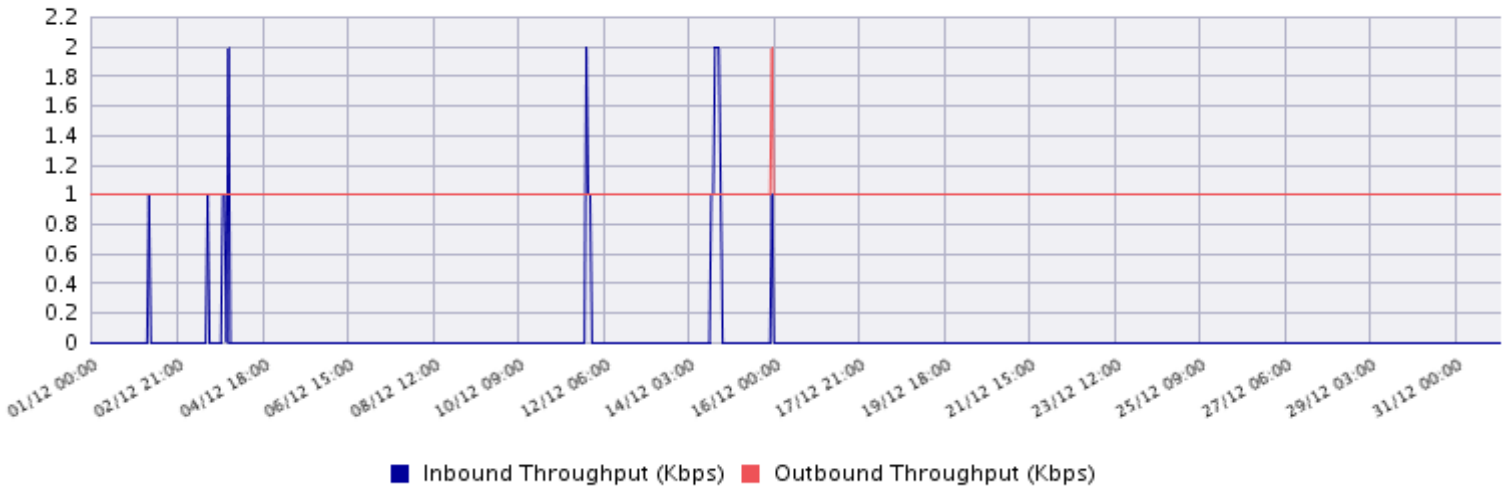
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

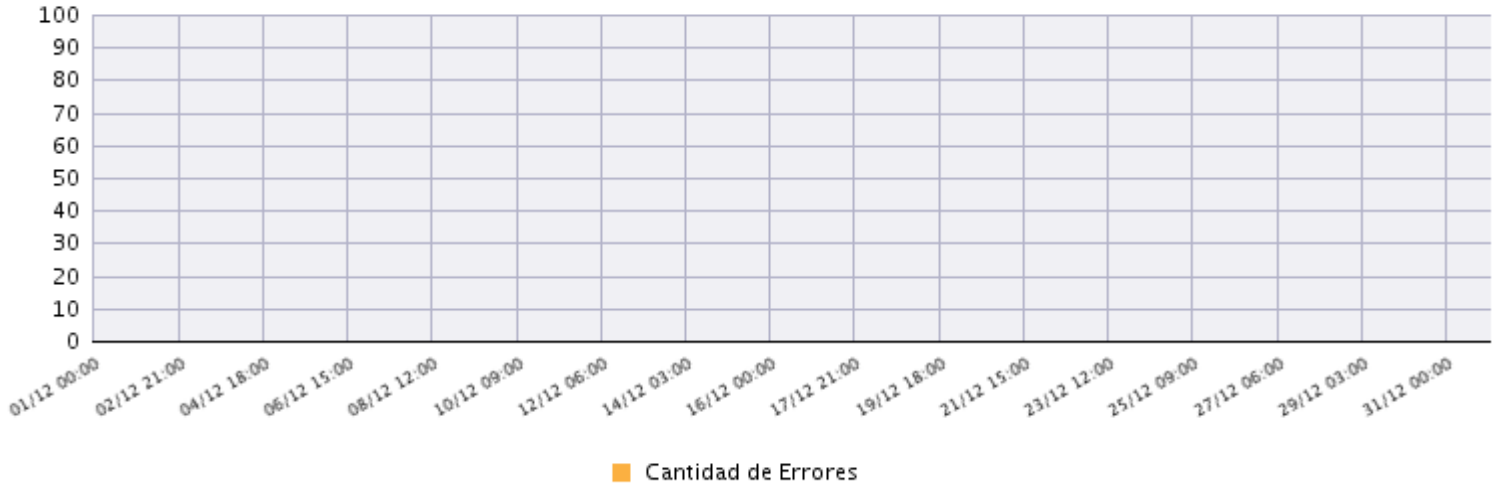
Sede	**OACI - COLOMBIA**
Equipo	**ICAO_COLOMBIA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.196)**
Ciudad	**Bogotá**

Interface: GigabitEthernet0/0 - ---- WAN CLIENTE HACIA BBIP ---- - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.03 | Out: 1) - MAX (In: 2 | Out: 2) - MIN (In: 0 | Out: 1) - PE95 (In: 0 | Out: 1)



Cantidad de Errores: 0



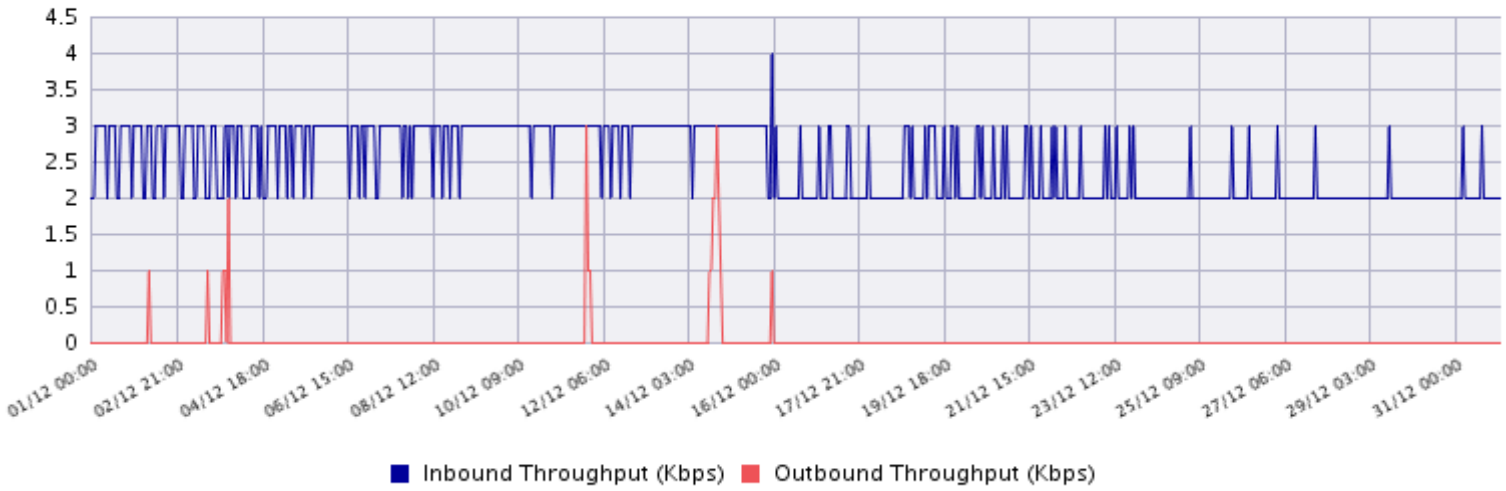
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

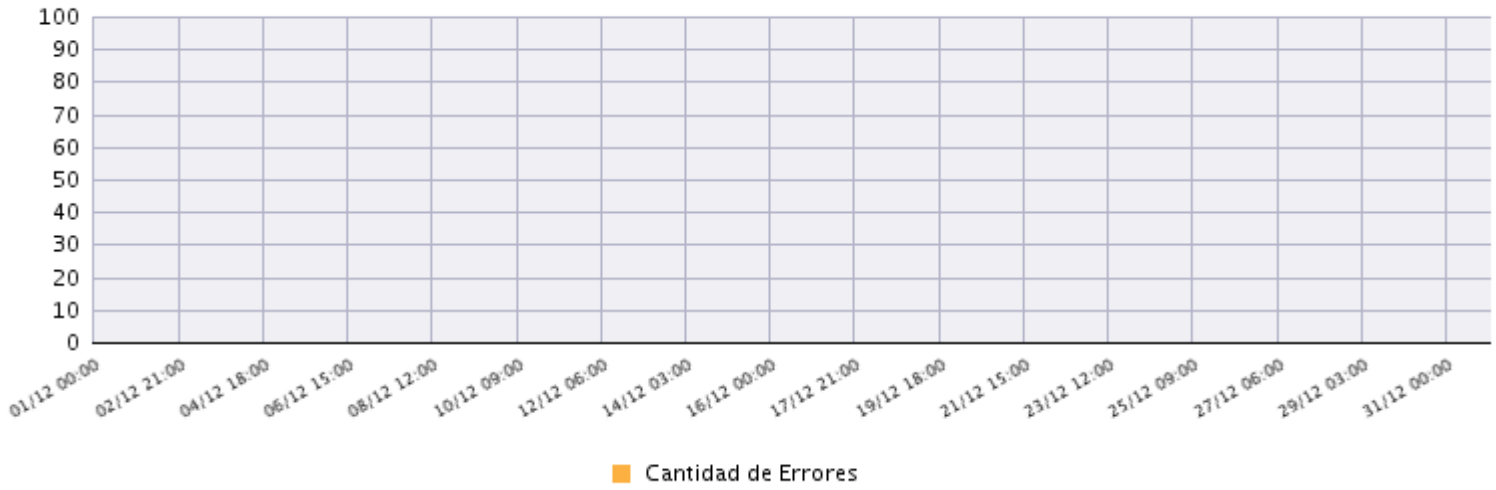
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - --- LAN INTERNA --- - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 2.47 | Out: 0.03) - MAX (In: 4 | Out: 3) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 0)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

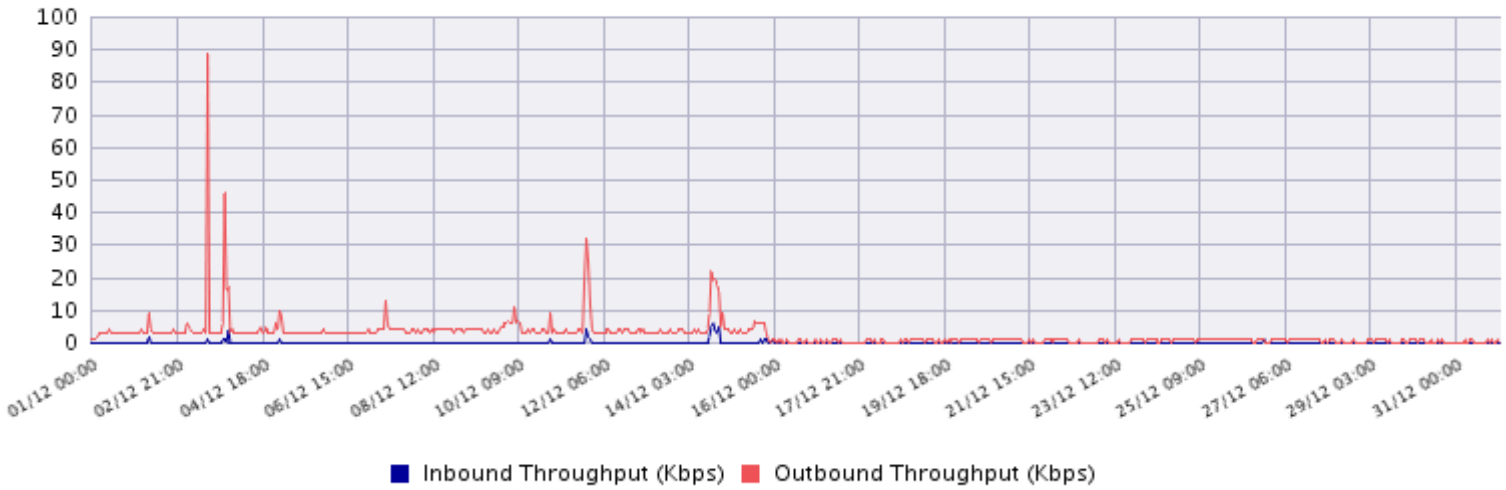
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - ECUADOR**
Equipo	**ICAO_ECUADOR**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.195)**
Ciudad	**Guayaquil**

Interface: GigabitEthernet0/0.1367 - WAN - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.06 | Out: 2.44) - MAX (In: 6 | Out: 89) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 6)



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

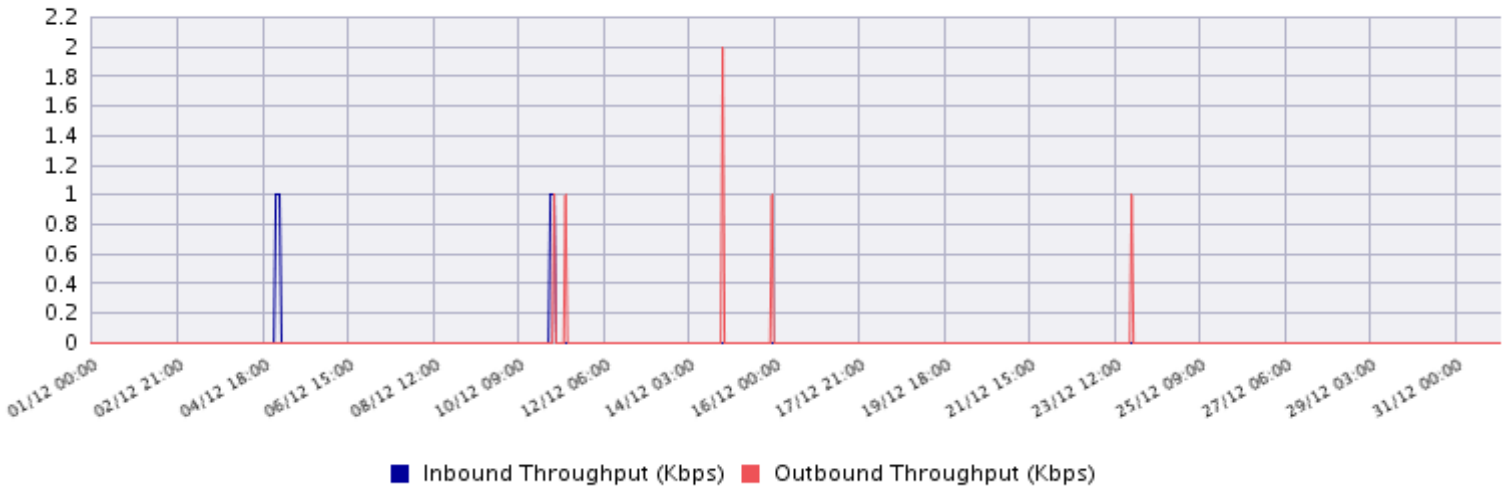
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

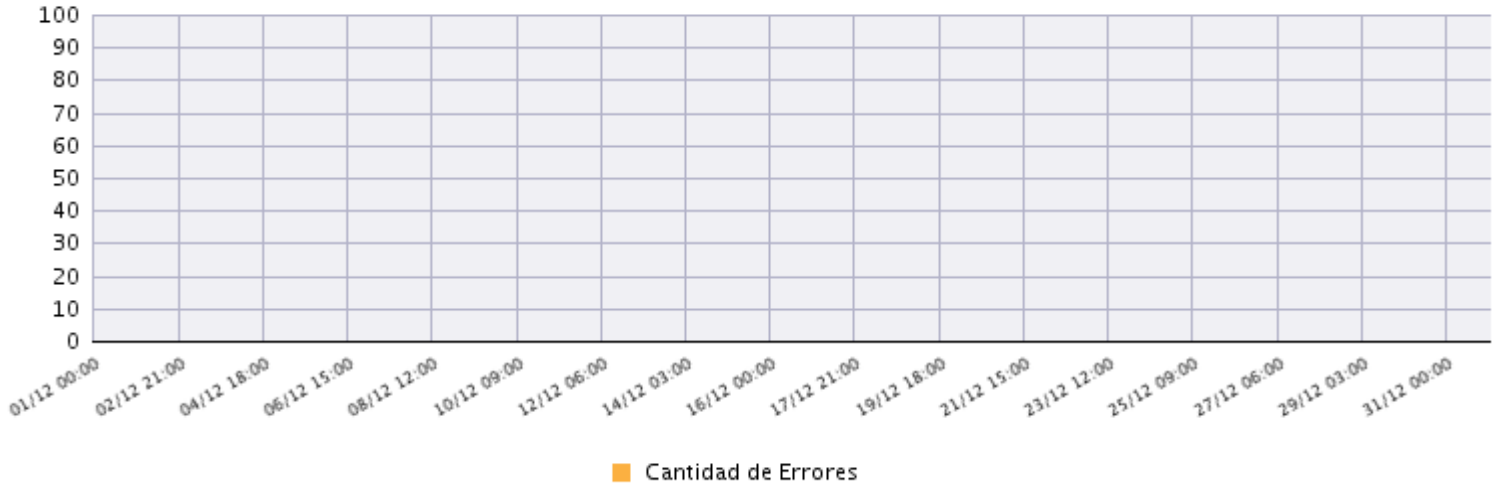
Sede	**OACI - GUYANA**
Equipo	**ICAO_GUYANA.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.200)**
Ciudad	**Georgetown**

Interface: GigabitEthernet0/0 - WAN - Bandwidth: 100,000 Kbps

VALUES [Kbps]: PROM: (In: 0.01 | Out: 0.01) - MAX (In: 1 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Cantidad de Errores: 0



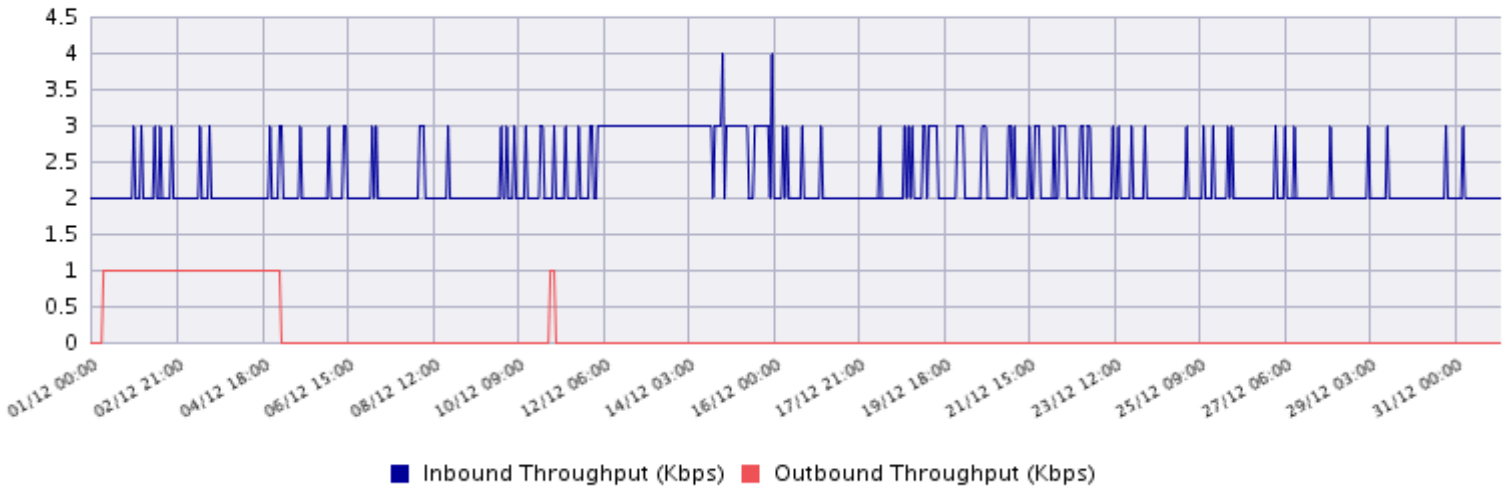
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

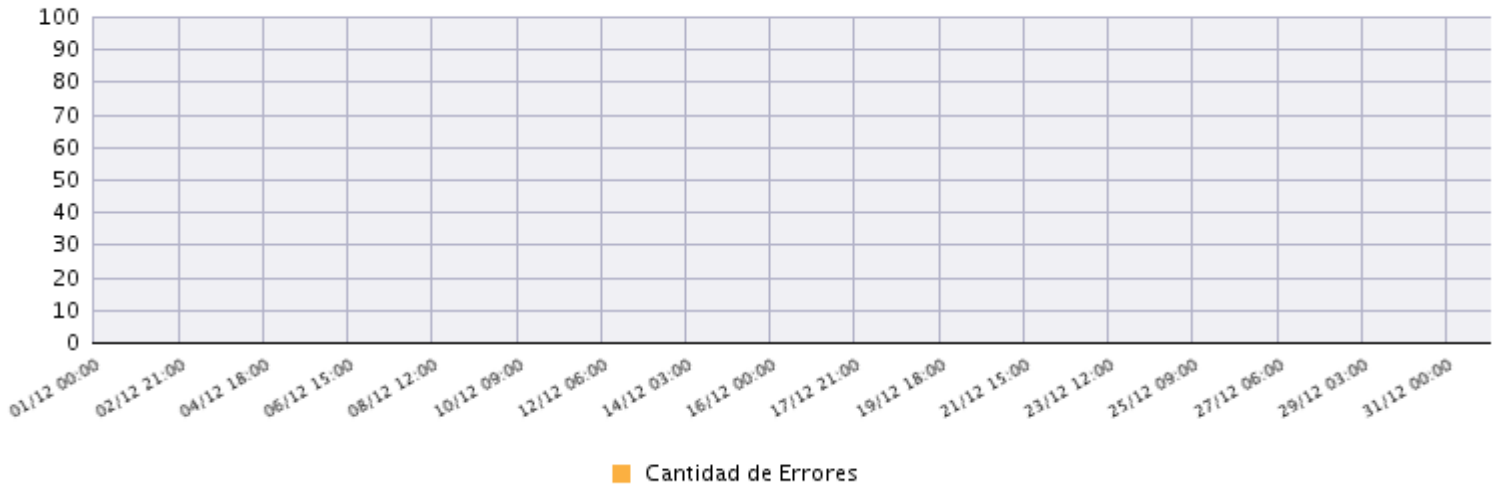
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - LAN - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 2.24 | Out: 0.13) - MAX (In: 4 | Out: 1) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 1)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

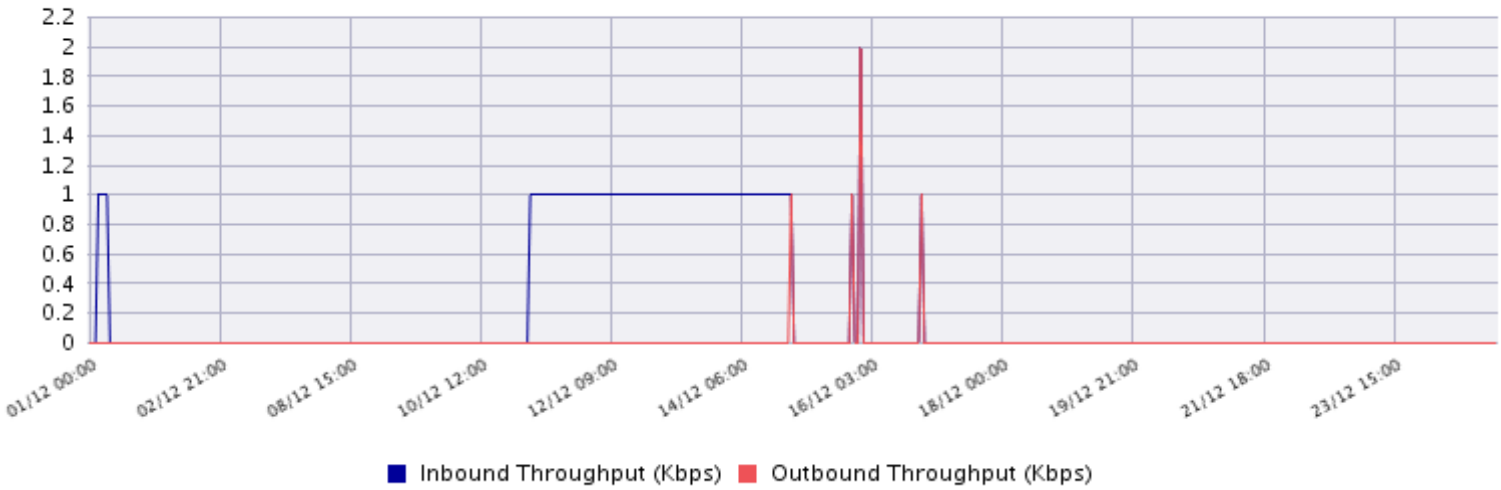
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

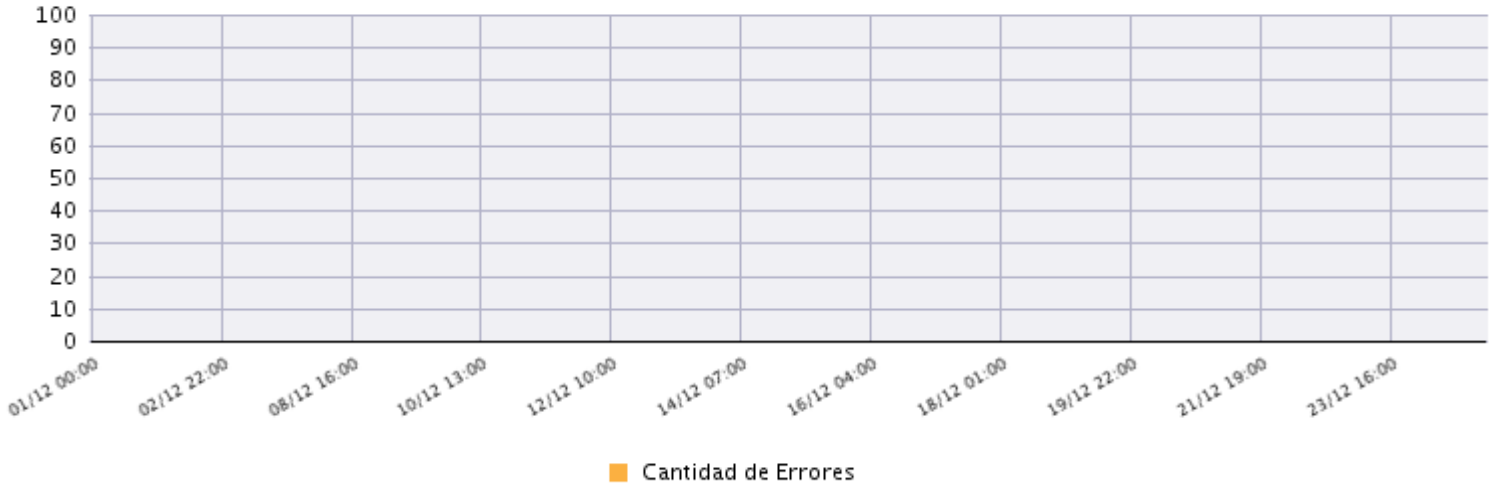
Sede	**OACI - GUYANA FRANCESA**
Equipo	**ICAO_FR_GUYANA.eq.ignetworks.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.201)**
Ciudad	**Cayena**

Interface: GigabitEthernet0/0 - ---- WAN CLIENTE HACIA BBIP ---- - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.2 | Out: 0.01) - MAX (In: 2 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 1 | Out: 0)



Cantidad de Errores: 0



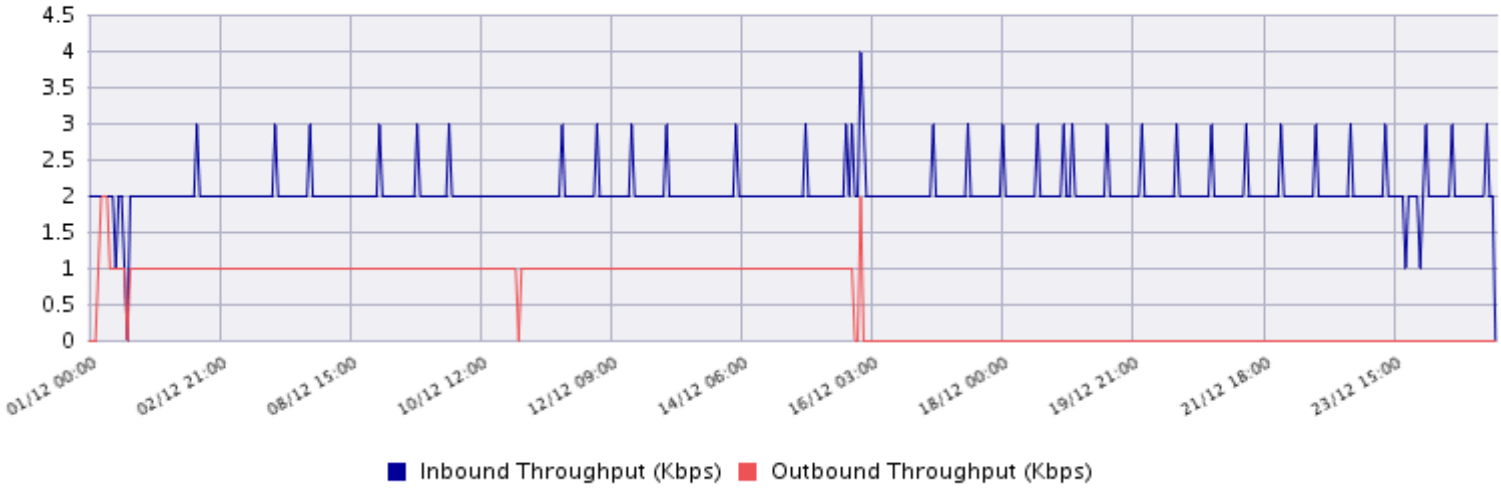
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

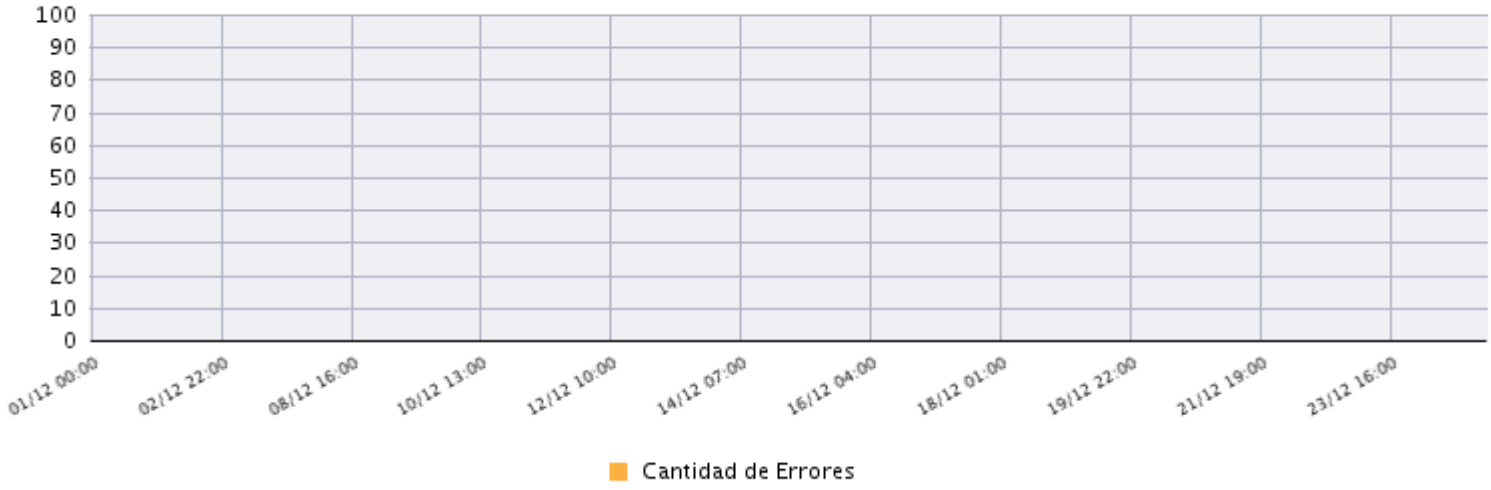
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - --- LAN INTERNA --- - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 2.06 | Out: 0.54) - MAX (In: 4 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 3 | Out: 1)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

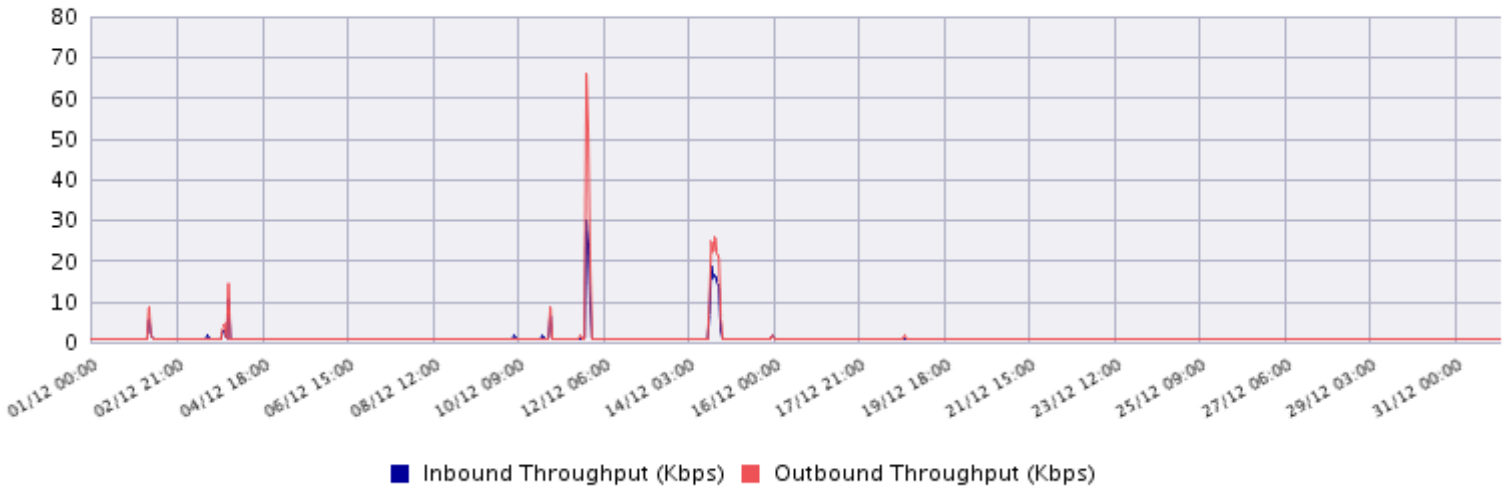
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - LIMA**
Equipo	**ICAO_PERU**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.20.26.50)**
Ciudad	**Callao**

Interface: GigabitEthernet0/0.2428 - WAN - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 1.24 | Out: 1.4) - MAX (In: 30 | Out: 66) - MIN (In: 1 | Out: 1) - PE95 (In: 1 | Out: 1)



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

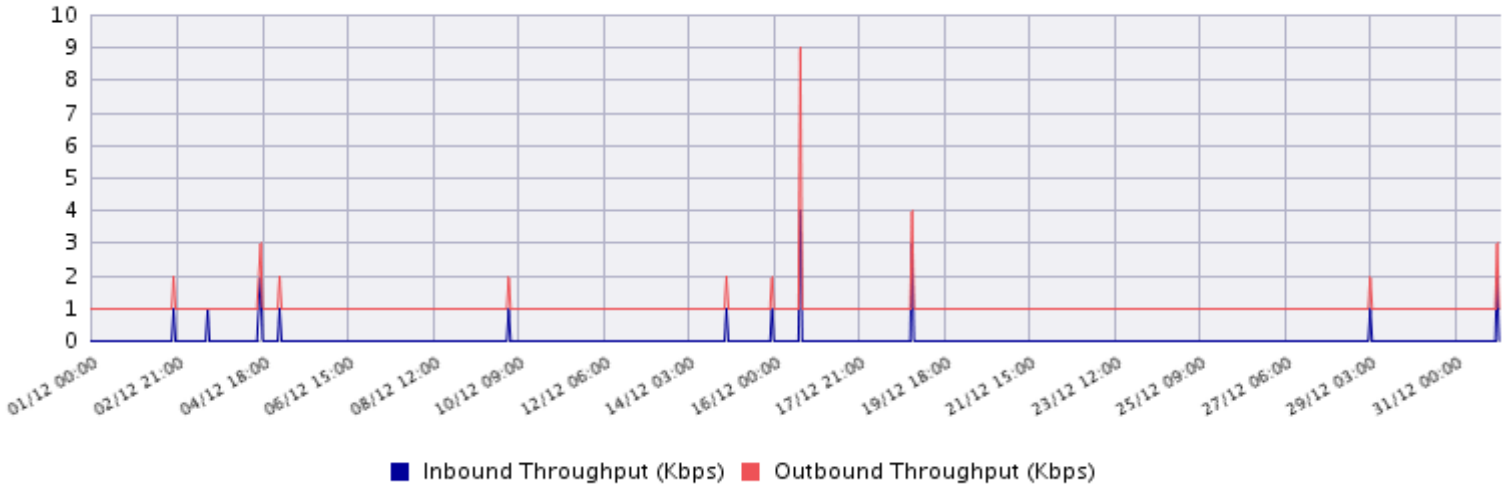
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

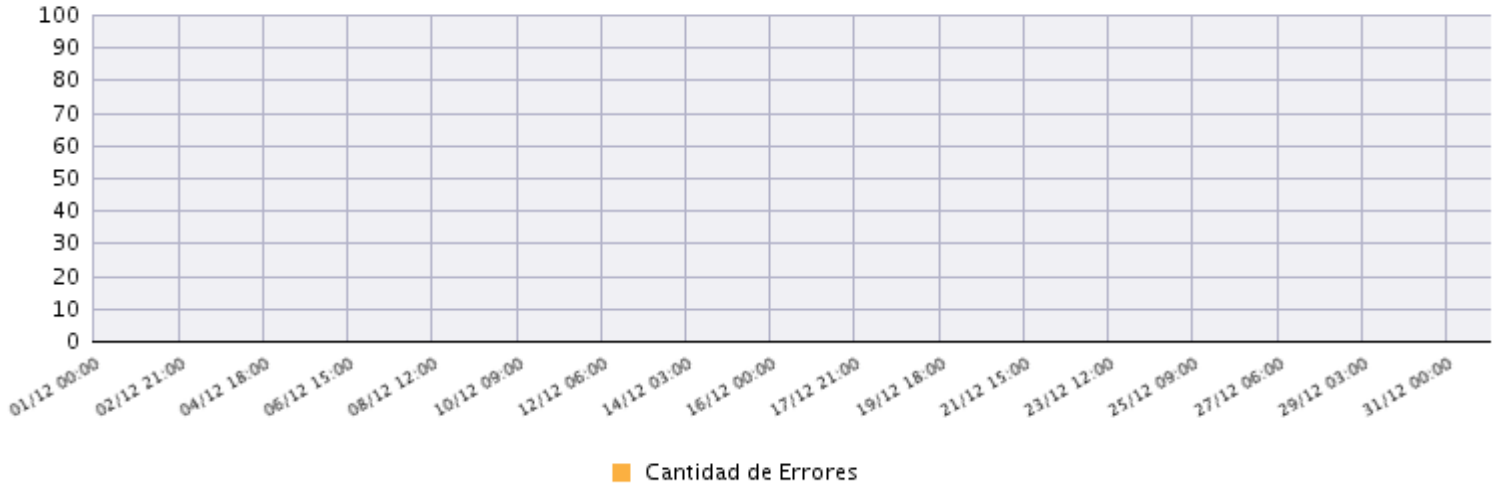
Sede	**OACI - PARAGUAY**
Equipo	**ICAO_PARAGUAY.ineo.com.py**
Modelo	**Cisco1941**
IP de Gestión	**(172.21.6.199)**
Ciudad	**Asunción**

Interface: GigabitEthernet0/0 - a psr1.ats1.eze interface ae2.501 - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.03 | Out: 1.03) - MAX (In: 4 | Out: 9) - MIN (In: 0 | Out: 1) - PE95 (In: 0 | Out: 1)



Cantidad de Errores: 0



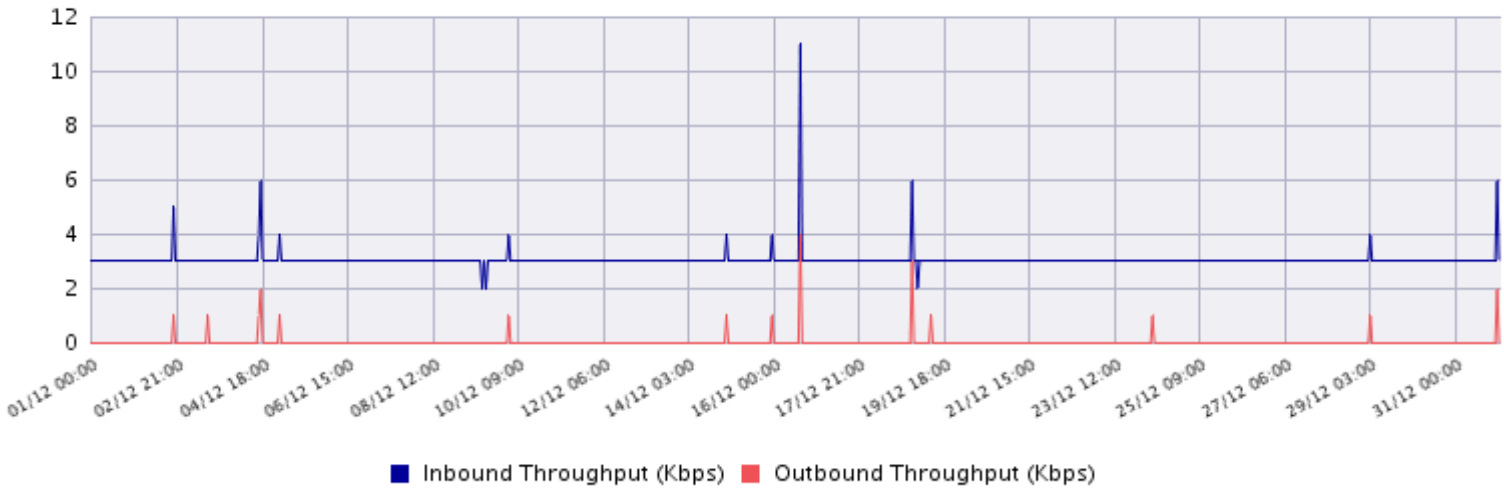
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

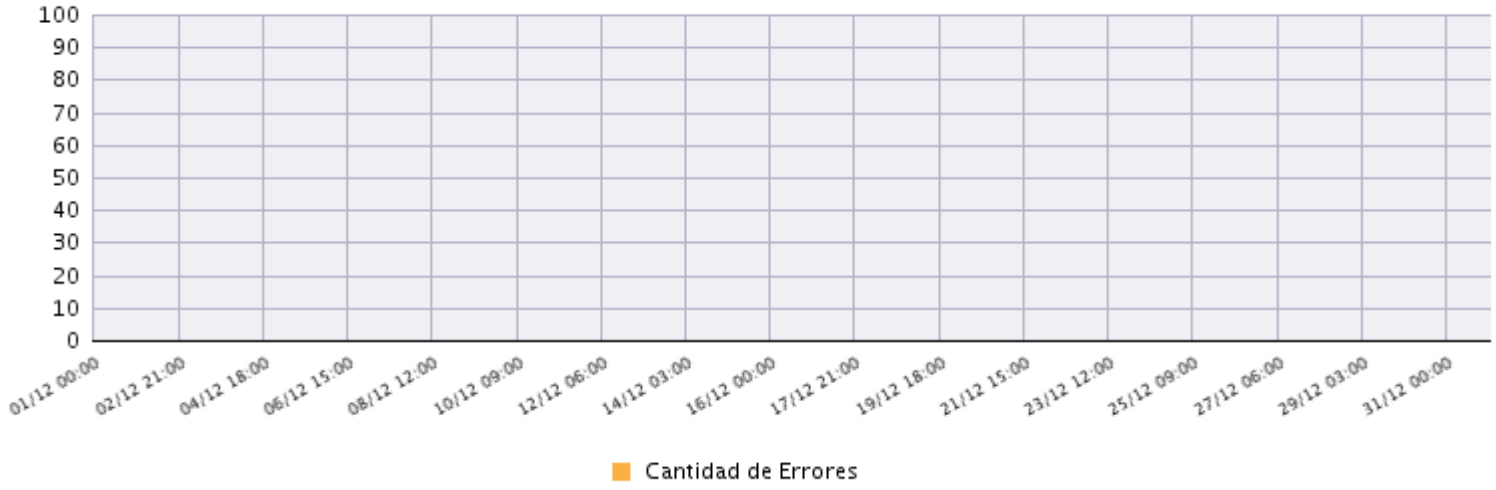
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - Customer_LAN - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 3.03 | Out: 0.03) - MAX (In: 11 | Out: 4) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 0)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

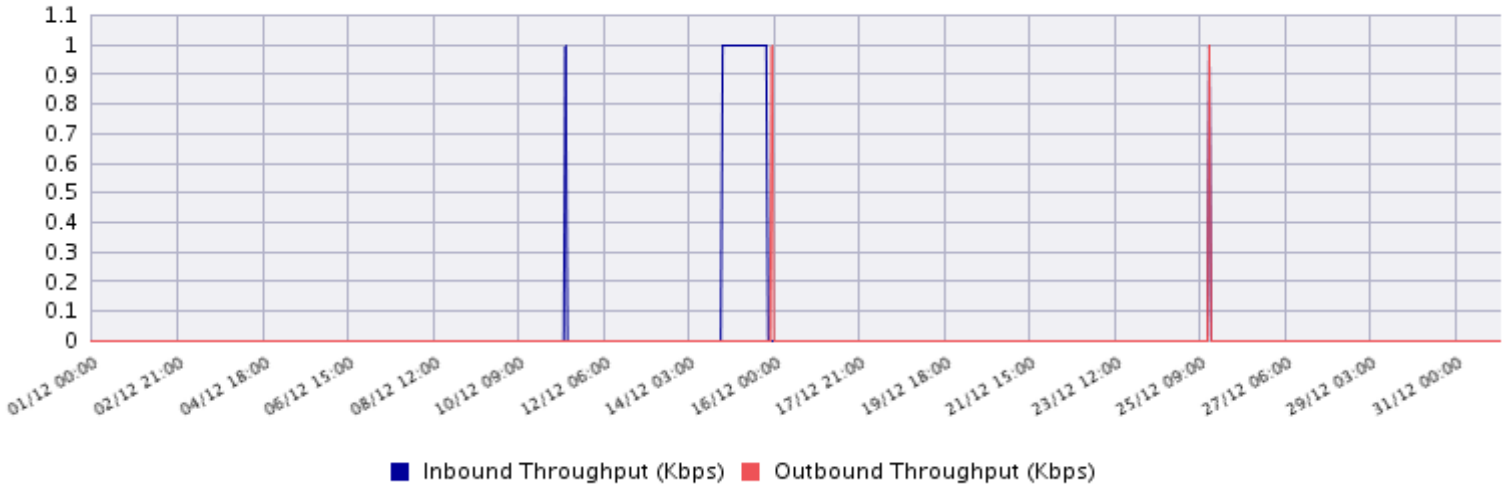
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

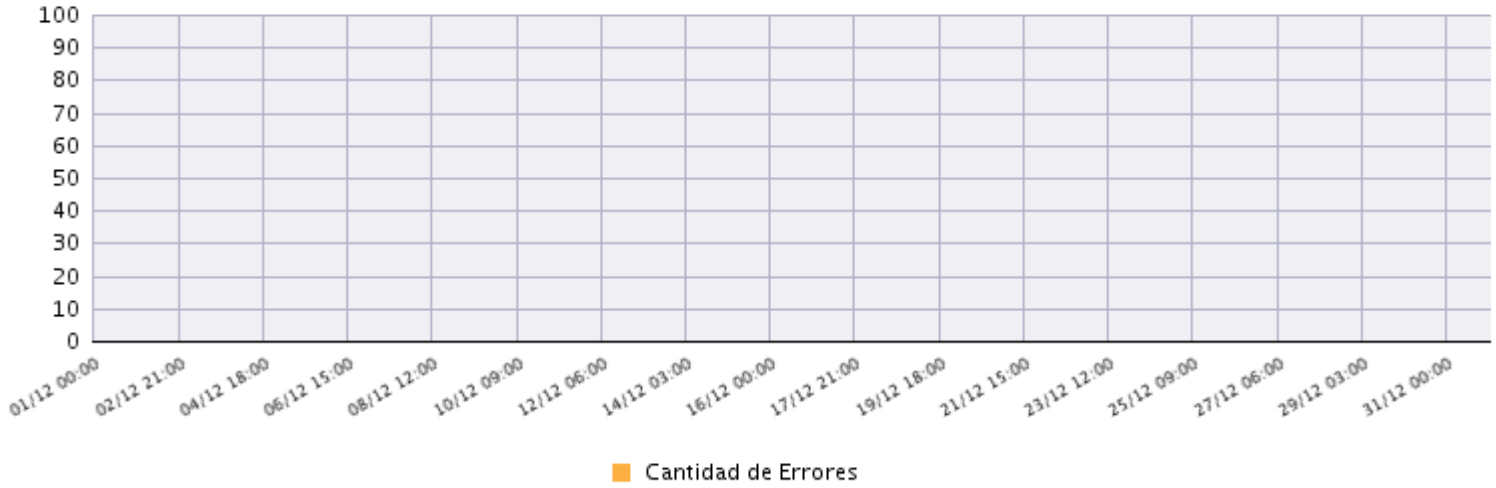
Sede	**OACI - SURINAME**
Equipo	**ICAO_SURINAME.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.203)**
Ciudad	**Paramaribo**

Interface: GigabitEthernet0/0 - WAN - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.03 | Out: 0) - MAX (In: 1 | Out: 1) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



Cantidad de Errores: 0



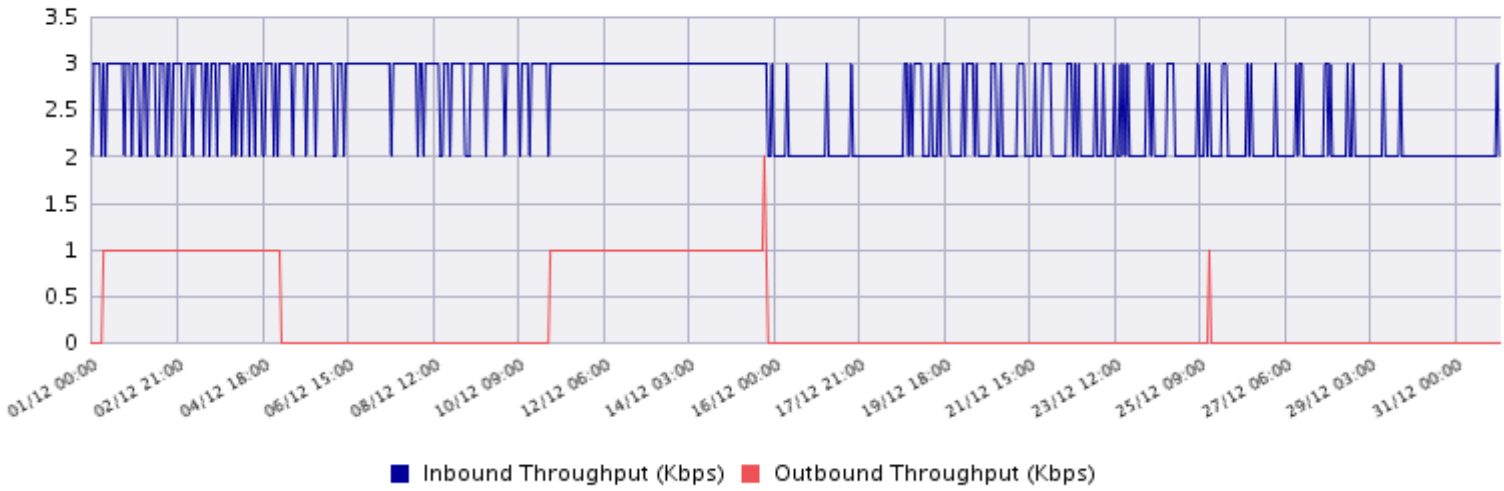
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

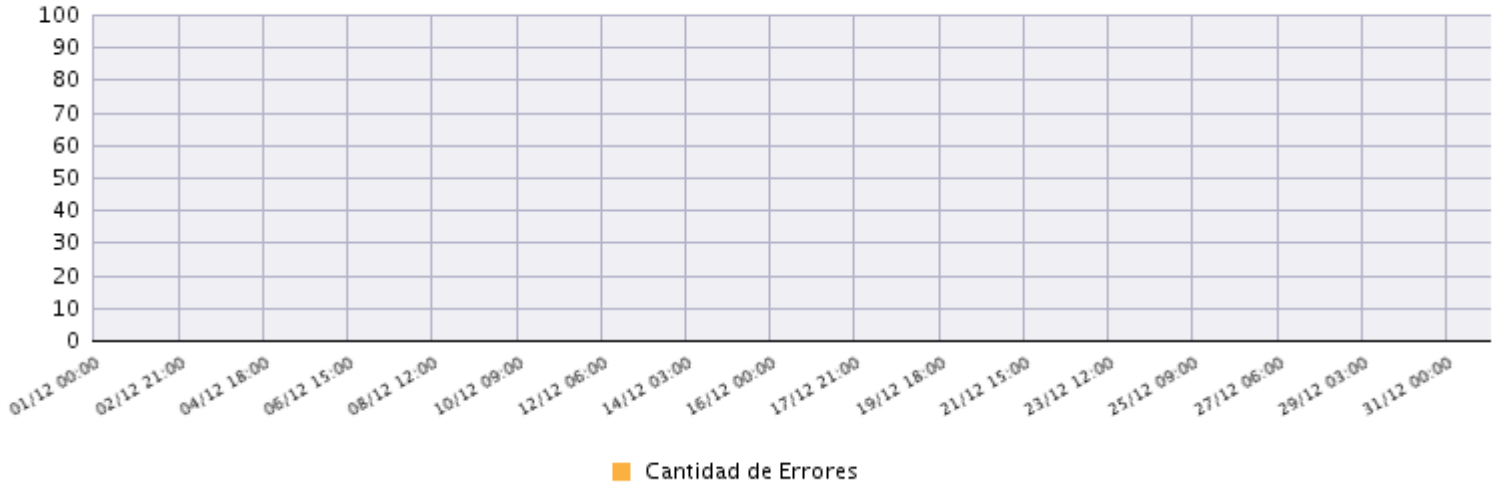
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - LAN - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 2.52 | Out: 0.28) - MAX (In: 3 | Out: 2) - MIN (In: 2 | Out: 0) - PE95 (In: 3 | Out: 1)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

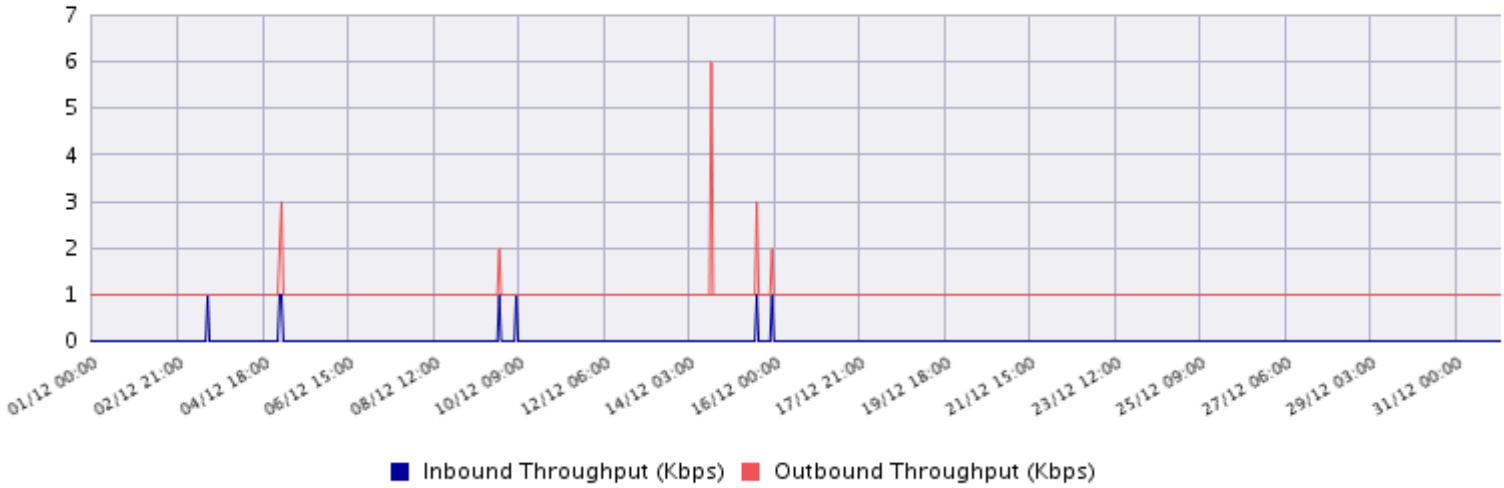
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

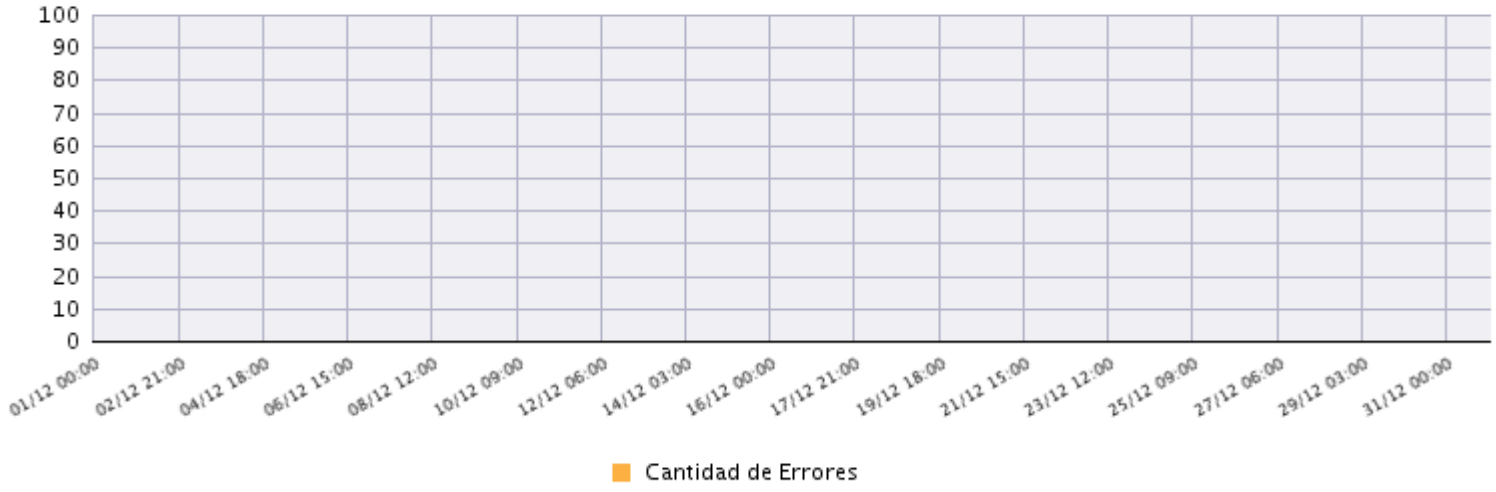
Sede	**OACI - TRINIDAD & TOBAGO**
Equipo	**ICAO_TRINIDAD.yourdomain.com**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.194)**
Ciudad	**Port of Spain**

Interface: GigabitEthernet0/0 - a rpar1.sfd1.sfd GigabitEthernet0/1.210 - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.01 | Out: 1.02) - MAX (In: 1 | Out: 6) - MIN (In: 0 | Out: 1) - PE95 (In: 0 | Out: 1)



Cantidad de Errores: 0



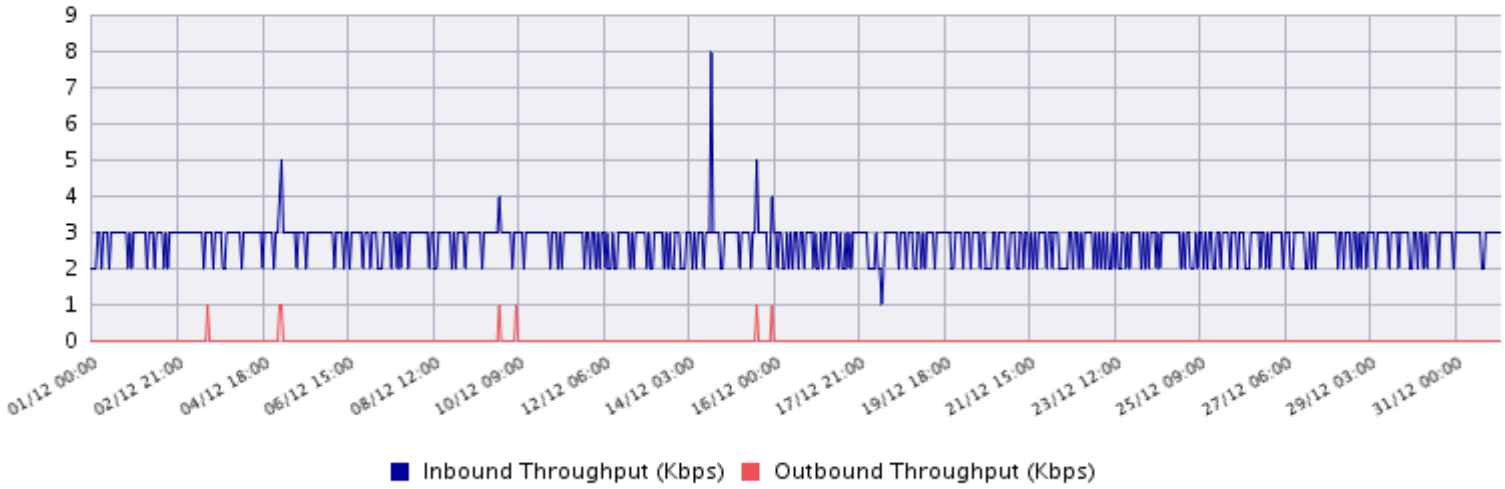
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

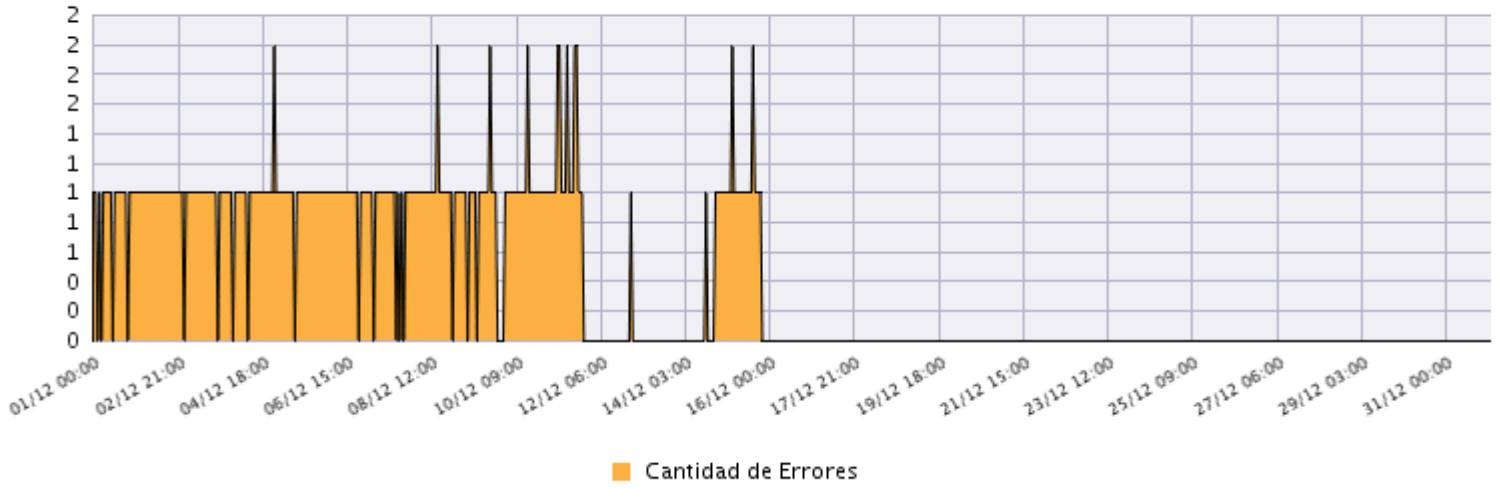
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - Customer_LAN - Bandwidth: 100,000 Kbps

VALUES [Kbps]: PROM: (In: 2.75 | Out: 0.01) - MAX (In: 8 | Out: 1) - MIN (In: 1 | Out: 0) - PE95 (In: 3 | Out: 0)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

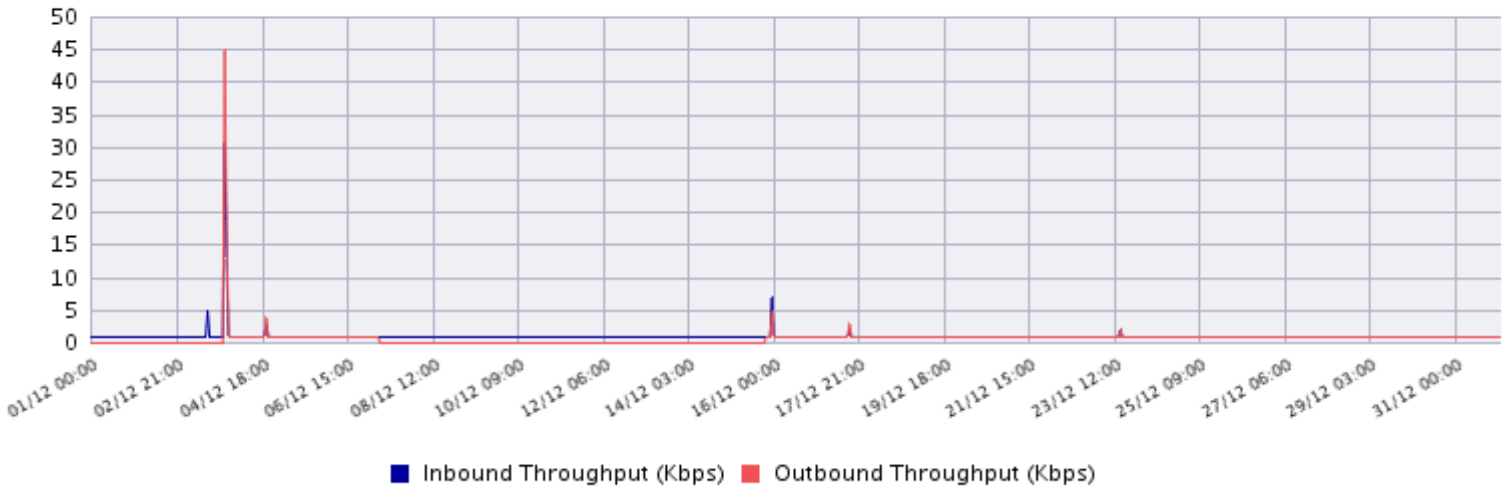
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

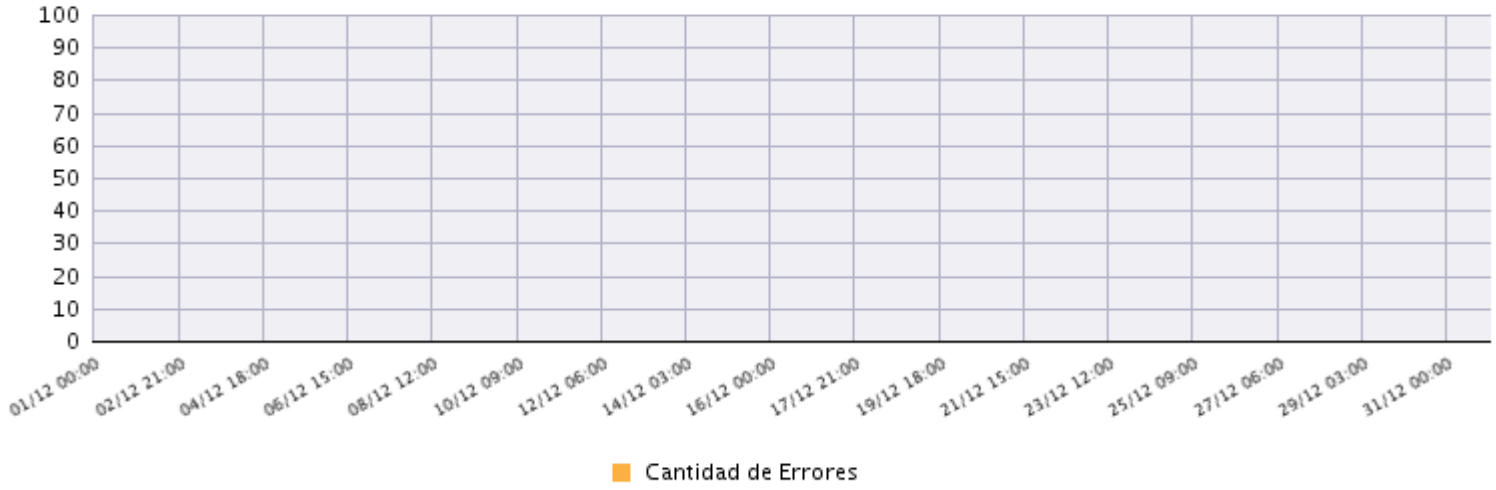
Sede	**OACI - URUGUAY**
Equipo	**ICAO_URUGUAY**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.198)**
Ciudad	**Montevideo**

Interface: GigabitEthernet0/0 - WAN a psr1.ats1.eze ae0.2324 - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 1.08 | Out: 0.73) - MAX (In: 31 | Out: 45) - MIN (In: 1 | Out: 0) - PE95 (In: 1 | Out: 1)



Cantidad de Errores: 0



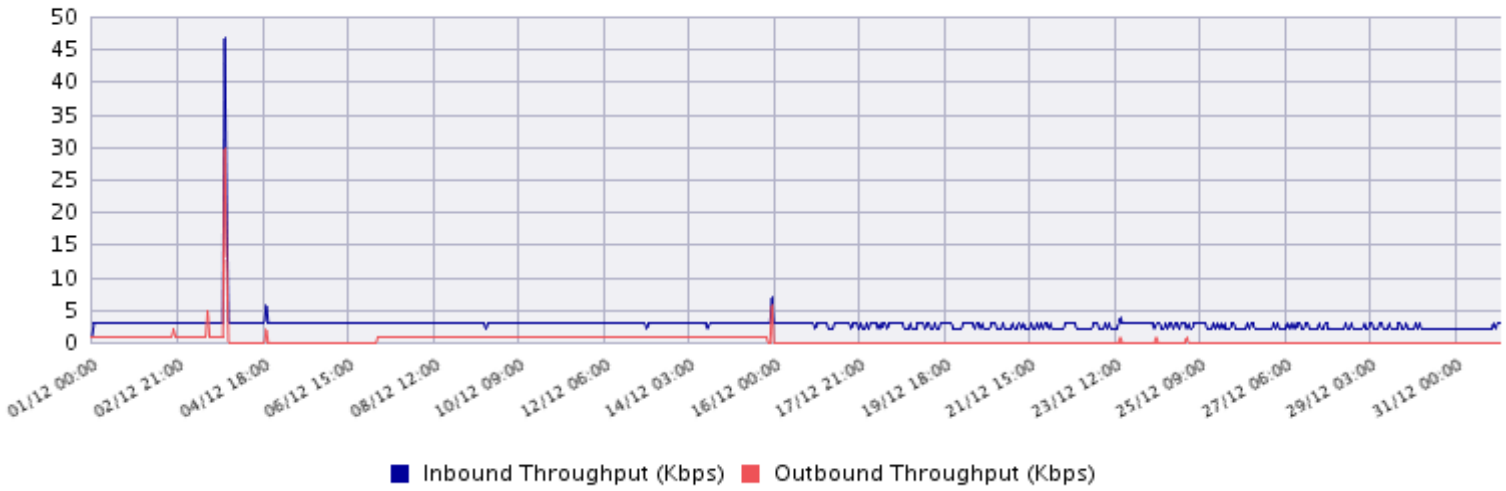
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

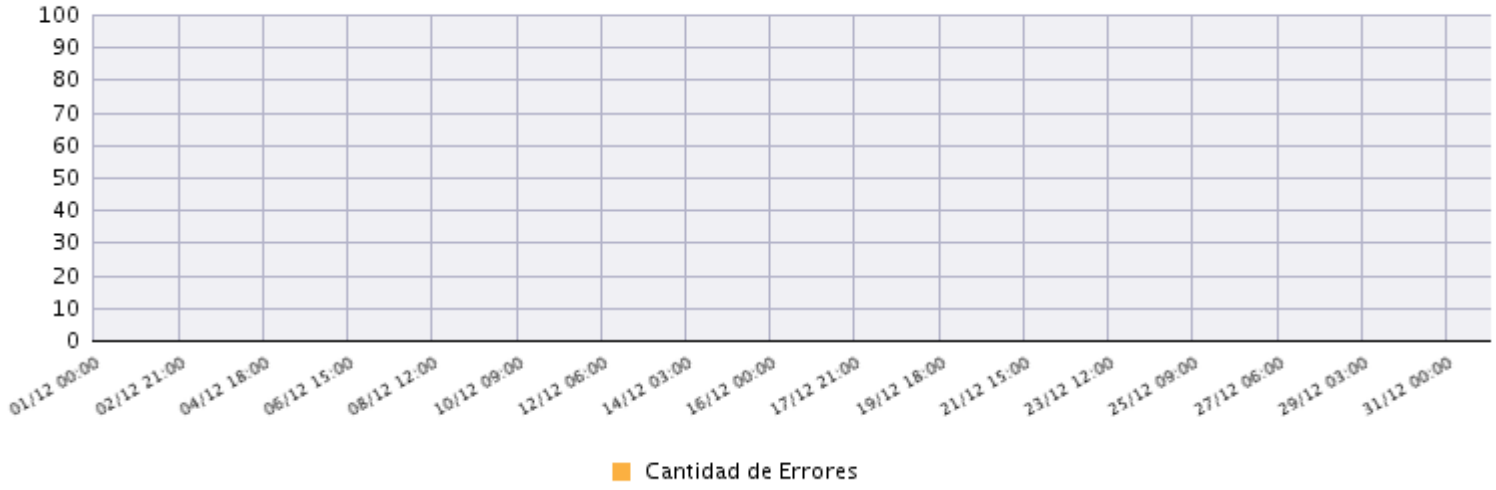
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - LAN de DATOS - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 2.82 | Out: 0.45) - MAX (In: 47 | Out: 30) - MIN (In: 1 | Out: 0) - PE95 (In: 3 | Out: 1)



Cantidad de Errores: 0



Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

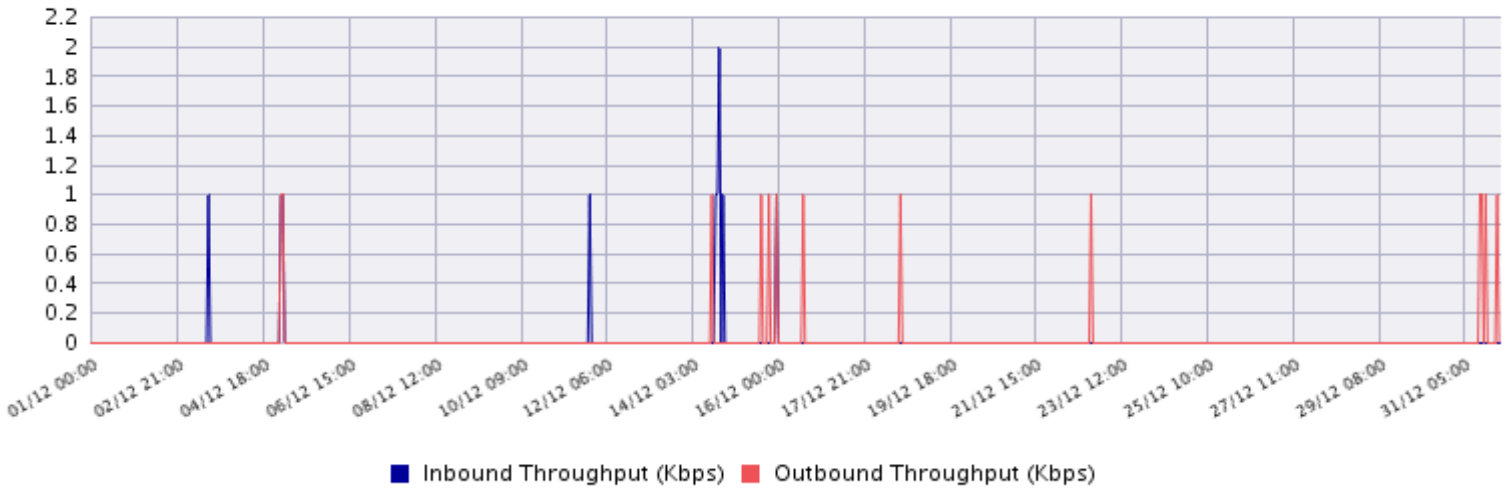
INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Sede	**OACI - VENEZUELA**
Equipo	**ICAO_VENEZUELA**
Modelo	**Cisco1921k9**
IP de Gestión	**(172.21.6.202)**
Ciudad	**Maiquetía**

Interface: GigabitEthernet0/0.2196 - "CONEXION WAN" - Bandwidth: 256 Kbps

VALUES [Kbps]: PROM: (In: 0.01 | Out: 0.02) - MAX (In: 2 | Out: 1) - MIN (In: 0 | Out: 0) - PE95 (In: 0 | Out: 0)



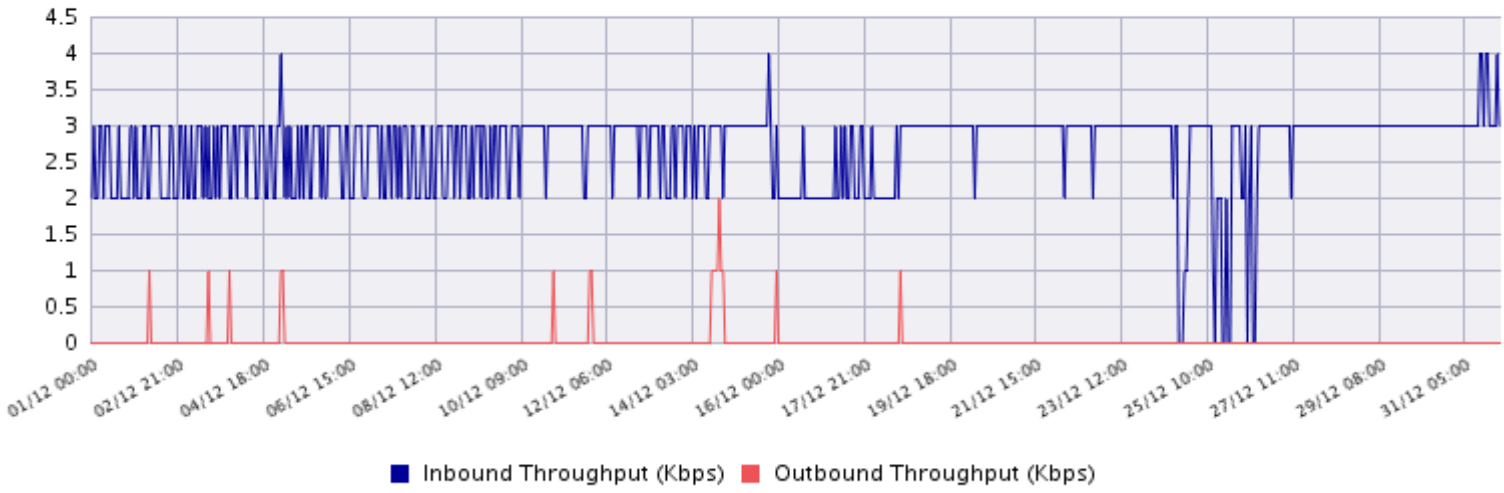
Reporte de Tráfico Entrada/Salida y Errores, Diciembre 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION 1-7GO-1873

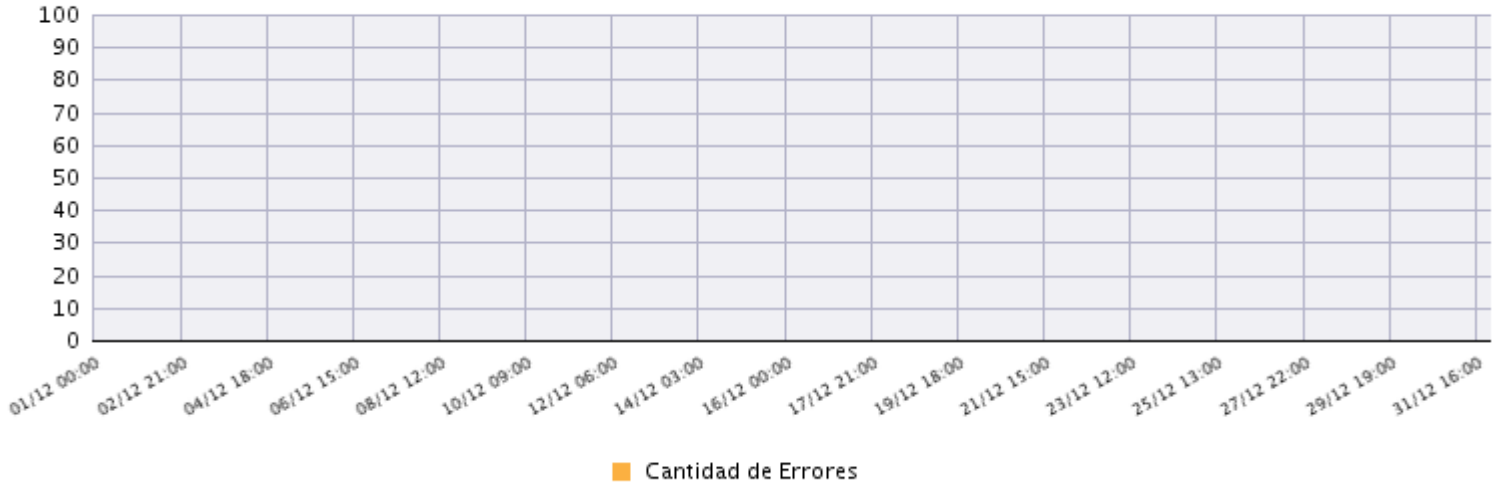
Level (3) COMMUNICATIONS
Connecting and Protecting the Networked World℠

Interface: GigabitEthernet0/1 - "CONEXION LAN" - Bandwidth: 1,000,000 Kbps

VALUES [Kbps]: PROM: (In: 2.7 | Out: 0.02) - MAX (In: 4 | Out: 2) - MIN (In: 0 | Out: 0) - PE95 (In: 3 | Out: 0)



Cantidad de Errores: 0



AMHS INTERCONNECTION REQUIREMENT AND DATE OF IMPLEMENTATION

STATE	AMHS INTERCONNECTION REQUIREMENT/	DATE OF IMPLEMENTATION/	REMARKS
Argentina	Bolivia	Mar 2016	
	Brazil	Dec 2015	Operational implementation pending.
	Chile	Dec 2016	
	Paraguay	Mar 2012	Implemented
	Peru	Nov 2015	
	Uruguay	Jun 2016	
Bolivia	Argentina	Mar 2016	
	Brazil	Apr 2016	
	Peru	May 2016	
Brazil	Argentina	Dec 2015	Operational implementation pending
	Bolivia	Apr 2016	
	Colombia	Jul 2016	Depending upon progress of Bogota REDDIG II node transferring
	Guyana	Mar 2016	
	French Guiana	TBD	AMHS implementation pending
	Paraguay	Jun 2016	
	Peru	Nov 2015	
	Suriname	Dec 2016	
	Uruguay	Dec 2015	
	Venezuela	Dec 2016	
Chile	Argentina	Dec 2016	
	Peru	Dec 2015	
Colombia	Brazil	Jul 2016	Depending upon progress of Bogota REDDIG II node transferring
	Ecuador	Jul 2016	Depending upon progress of Bogota REDDIG II node transferring
	Panama	Dec 2016	Depending upon progress of Bogota REDDIG II node transferring
	Peru	Sep 2010	Implemented
	Venezuela	Jun 2016	Depending upon progress of Bogota REDDIG II node transferring
Ecuador	Colombia	Jul 2016	Depending upon progress of Bogota REDDIG II node transferring
	Peru	Jul 2012	Implemented
	Venezuela	Dec 2016	
French Guiana (France)	Brazil	TBD	AMHS implementation pending
	Venezuela	TBD	AMHS implementation pending
Guyana	Brazil	Mar 2016	

STATE	AMHS INTERCONNECTION REQUIREMENT/	DATE OF IMPLEMENTATION/	REMARKS
	Suriname	Jun 2011	Implemented
	Venezuela	Dec 2016	
Panama	Colombia	Dec 2016	Depending upon progress of Bogota REDDIG II node transferring
Paraguay	Argentina	Mar 2012	Implemented
	Brazil	Jun 2016	
Peru	Argentina	Nov 2015	
	Bolivia	May 2016	
	Brazil	Nov 2015	Operational implementation pending.
	Chile	Dec 2015	
	Colombia	Sep 2010	Implemented
	Ecuador	Jul 2012	Implemented
	Venezuela	Jun 2016	
Suriname	Brazil	Dec 2016	
	Guyana	Jun 2011	Implemented
	Venezuela	Jun 2016	
Uruguay	Argentina	Jun 2016	
	Brazil	Dec 2015	
Venezuela	Brazil	Dec 2016	
	Colombia	Jun 2016	Depending upon progress of Bogota REDDIG II node transferring
	Ecuador	Dec 2016	
	Guyana	Dec 2016	
	French Guiana	TBD	AMHS implementation pending.
	Peru	Jun 2016	
	Suriname	Jun 2016	

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 2015.

Summary of expenditures incurred by Project RLA/03/901 between 2003 and 2015

5.2 Table # 1 shows the expenditures incurred by project RLA/03/901. The Project spent **USD 4,343,838** in 2015 (expenditures corresponding to 2015 are subject to confirmation based on financial statements), and a total of **USD 12,725,351** from 2003 to 2015.

5.3 Table # 2 contains a bar chart with the distribution of project expenditures by year, as well as a pie chart 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 13,787,087**. Subtracting the costs of **USD 12,725,351**, there is a positive balance of **USD 1,061,737**.

5.5 With regard to the pending contributions, Agenda Item 2 dealt with the contribution situation with Suriname. On the other hand, Peru informed that had made the payment of its pending quota. The above indicated Tables 1, 2 and 3 are shown in **Appendix A.**

5.6 Subsequently, the Meeting took note on the proposed project RLA/03/901 budget Revision, aimed mainly to update the expenses as of 2015.

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

Conclusion RCC/19-5 Approval of the project RLA/03/901 budget Revision

> That, the Nineteenth Meeting of the Coordination Committee of Project RLA/03/901 approves Revision S to project RLA/03/901 budget, as shown in **Appendix B** to the Report on Agenda Item 5.

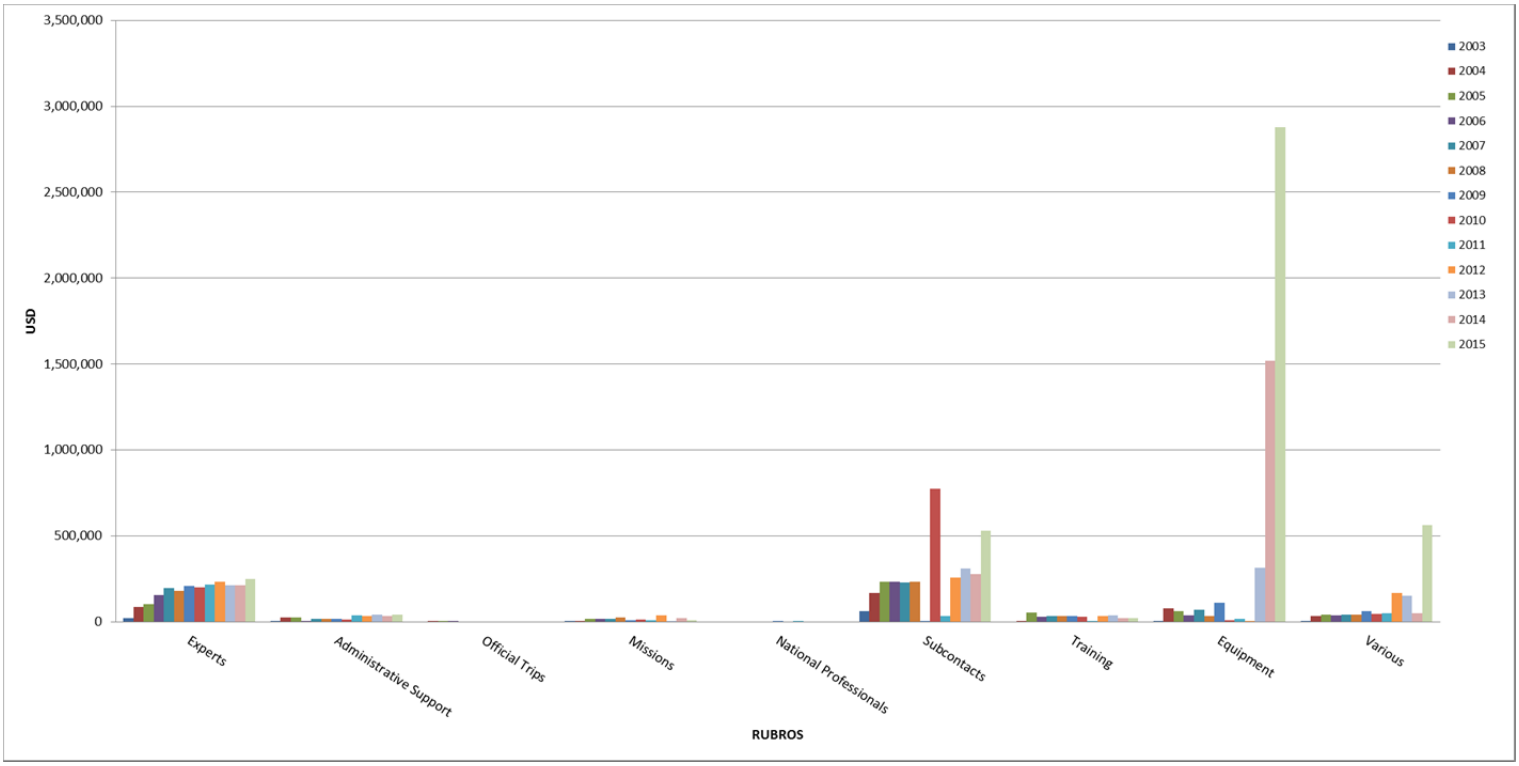
APPENDIX A

Table # 1 - Detailed breakdown of expenditures up to 31 December 2015

(Expenditures in 2015 are subject to confirmation with the final financial statements)

	CONCEPT	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
BL 11	**Experts**														
	REDDIG Adminsitrator	22,359	93,953	101,296	156,503	197,784	177,449	207,289	201,030	209,250	232,544	212,112	211,011	250,000	**2,272,580**
	Consultants		(6,303)				1,499			9,200	0	0	0		**4,396**
BL 13	**Administrative support**														**0**
13-01	Bilingual secretary	354	12,185	12,551		15,968	11,471	16,497	14,066	19,086	19,443	17,183	17,571	27,000	**183,375**
13-02	REDDIG technician		12,000	12,108	711										**24,819**
13-04	Bilingual secretary (severance)						7,516								**7,516**
13-05	Administrative and financial assistant									10,670	12,831	15,508	9,254	14,500	**62,763**
13-06	Information technology assistant									8,931	107	11,425	7,798	0	**28,261**
BL 15	**Official travels**		321	925	499						0	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	20,306	9,400	**193,566**
BL 17	**National professionals**							2,080		961			0	1,769	**4,810**
BL 20	**Subcontracos**														**20**
21-01	Pan Am sat (P.O. 40670)														**0**
21-01	P.O. 30473(1 Oct 2003 to 31 Dic 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	2009-2011 lease								462,528						**462,528**
21-01	2012-2014 lease										233,826	231,264	231,264		**696,354**
21-01	2015-2018 lease													233,274	**233,274**
21-02	Network Access									32,831	24,650	77,518	45,039	46,201	**226,239**
21-07	Non recurrent MEVA/REDDIG								75,071				0	485,000	**560,071**
21-98	Professional responsibility insurance		845	1,156	3,469		1,156	1,156	2,161		0	0	0		**9,943**
BL 39	**Training**		**3,014**	**53,862**	**30,553**	**34,044**	**32,852**	**34,413**	**35,842**	**5,130**	**33,591**	**38,422**	**23,731**	**22,471**	**347,924**
45-01	**Spare parts**		**-12,752**	**59,541**	**36,311**	**71,637**	**33,997**	**108,509**	**12,507**	**2,896**	**635**	**2,307**	**5,057**		**320,645**
45-02	**Office equipment**	**82**	**0**	**2,083**	**-30**	**0**	**0**	**0**	**0**	**3,402**	**757**	**4,421**	**0**	**1,796**	**12,511**
45-03	Operaction / Maintenance of office equipment		1,716						0	2,009		0			**3,725**
45-03	PO 50522 VIASAT Modem SYGC repair			1,603											**1,603**
45-03	CB LIMA			179											**179**
45-04	Transfer of NCC 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	Extensiion of SEEE contract (P.O. 40489)		50,000												**50,000**
45-06	SEEE backup network (P.O. 04090)		24,820												**24,820**
45-09	MEVA-REDDIG interconnection equipment									9,439					**9,439**
45-10	REDDIG II purchase											285,455	1,518,534	2,874,808	**4,678,797**
45-98	Professional responsibility insurance		444	284	246		130	1,109	0		0	0	0		**2,213**
50	**MISCELLANEOUS**														**0**
53-01	Miscellaneous expenses	643	4,726	4,475	1,150	8,688	4,632	3,703	9,157	13,351	11,518	29,889	10,698	10,245	**112,875**
53-02	PNUD charges		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	140,757	41,566	367,374	**1,014,970**
	TOTAL	**96,108**	**399,341**	**534,381**	**517,027**	**612,343**	**567,187**	**444,309**	**859,829**	**373,945**	**763,878**	**1,071,336**	**2,141,829**	**4,343,838**	**12,725,351**

Table # 2
Distribution of project expenditures per year



Percentage of implementation by each budget component

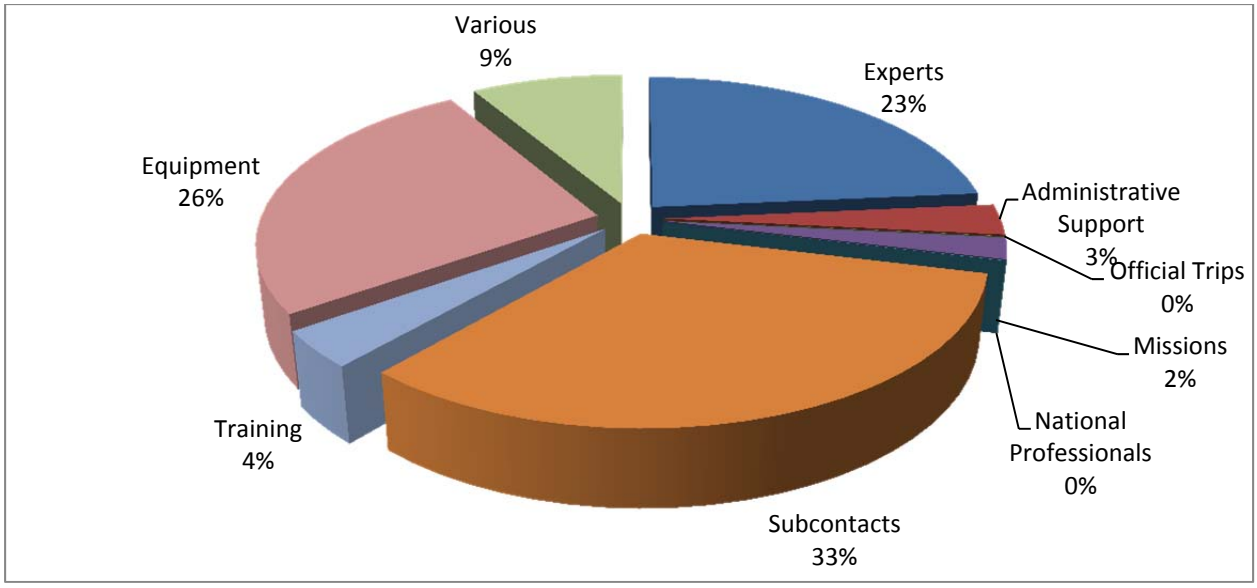


Table # 3 - Status of cost-sharing contributions to Project RLA/03/901

	2003-2009		1 Julio 2010		1 Julio 2011		1 Julio 2012		1 Julio 2013		1 Julio 2014		1 Julio 2015		Totales (hasta 2015)		
	Cuota	Pagado	Cuota	Pagado	Cuota	Pagado	Cuota	Pagado	Cuota	Pagado	Cuota	Pagado	Cuota	Pagado	Cuotas	Pagado	Deben
Argentina	394,826	**396,125**	86,201	**0**	82,500	**167,402**	363,218	**0**	123,934	**487,132**	73,193	**0**	49,025	**122,218**	1,172,897	**1,172,877**	20
Bolivia	231,198	**231,198**	48,039	**48,039**	43,924	**43,924**	324,355	**43,105**	74,603	**344,060**	63,265	**63,265**	52,959	**52,959**	838,343	**826,550**	11,793
Brasil	647,488	**647,373**	137,644	**142,700**	148,003	**148,003**	993,893	**993,893**	193,683	**235,239**	193,683	**147,186**	150,145	**150,672**	2,464,539	**2,465,066**	-527
Chile	266,223	**266,223**	1,000	**1,000**	45,000	**45,000**	44,791	**44,791**	346,919	**354,930**	59,361	**52,360**	51,603	**50,593**	814,897	**814,897**	0
Colombia	343,804	**343,804**	0	**0**	67,201	**67,201**	346,822	**412,394**	65,572	**0**	73,166	**73,166**	60,388	**60,388**	956,953	**956,953**	0
Ecuador	222,167	**222,167**	35,000	**35,000**	35,000	**35,000**	328,951	**328,951**	63,882	**65,598**	63,882	**62,116**	58,880	**58,880**	807,762	**807,712**	50
Francia	215,539	**215,529**	24,092	**24,092**	42,203	**42,178**	323,622	**323,572**	62,981	**0**	62,981	**62,951**	51,677	**114,683**	783,095	**783,005**	90
Guyana	180,957	**156,838**	30,000	**43,870**	30,000	**63,148**	314,398	**328,347**	57,193	**21,696**	57,193	**57,173**	60,077	**66,041**	729,818	**737,114**	-7,296
Paraguay	225,685	**225,685**	47,056	**0**	40,162	**87,148**	323,098	**41,848**	68,543	**349,658**	60,562	**0**	47,266	**107,978**	812,372	**812,317**	55
Peru	343,305	**343,305**	78,271	**0**	77,000	**155,271**	349,287	**349,287**	76,474	**76,474**	76,474	**0**	58,961	**135,435**	1,059,772	**1,059,772**	0
Suriname	188,377	**107,198**	30,000	**0**	30,000	**111,164**	318,461	**29,983**	62,017	**281,233**	60,407	**0**	58,183	**0**	747,445	**529,577**	217,868
Uruguay	301,446	**290,239**	30,000	**29,970**	30,000	**29,971**	325,269	**333,134**	63,551	**66,541**	63,551	**63,516**	57,836	**58,240**	871,653	**871,612**	41
Venezuela	325,151	**325,151**	88,967	**88,967**	80,000	**80,000**	368,283	**87,033**	85,800	**382,230**	85,800	**70,580**	56,119	**56,119**	1,090,120	**1,090,080**	40
Trinidad y Tabago	147,467	**147,447**	30,000	**29,980**	30,000	**0**	318,571	**318,528**	45,913	**91,605**	63,355	**47,731**	52,454	**52,454**	687,760	**687,745**	15
COCESNA	0	**0**	46,000	**0**	19,193	**65,145**	19,193	**19,178**	19,193	**19,178**	19,193	**19,185**	49,124	**49,124**	171,896	**171,810**	86
Sub-Totales	**4,033,633**	**3,918,282**	**712,270**	**443,618**	**800,186**	**1,140,555**	**5,062,212**	**3,654,044**	**1,410,258**	**2,775,574**	**1,076,066**	**719,229**	**914,697**	**1,135,785**	**14,009,322**	**13,787,087**	**222,235**
Intereses	59,772	**59,772**	785	**785**	468	**468**	2,776	**2,776**	6,760	**6,760**	6,620	**6,620**	6,537	**6,537**	83,718	**83,718**	
Otros aportes	-75	**-75**	-15	**-15**	379	**379**	-164	**-164**	84,807	**84,807**	354,341	**354,341**	107	**107**	439,380	**439,380**	
Sub-Totales	**59,697**	**59,697**	**770**	**770**	**847**	**847**	**2,612**	**2,612**	**91,567**	**91,567**	**360,961**	**360,961**	**6,644**	**6,644**	**523,098**	**523,098**	
Totales	**4,093,330**	**3,977,979**	**713,040**	**444,388**	**801,033**	**1,141,402**	**5,064,824**	**3,656,656**	**1,501,825**	**2,867,141**	**1,437,027**	**1,080,190**	**921,341**	**1,142,429**	**14,532,420**	**14,310,185**	**222,235**

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

APPENDIX B

PROJECT BUDGET

(in US dollars)

Country: Regional for South America
Project: RLA/03/901/S
Title: REDDIG Management System and Satellite Segment Administration

Starting date: 1 July 2003
Termination date: 31 December 2018

		TOTAL USD	*------ M/H	2003 USD	*------ M/H	2004 USD	*------ M/H	2005 USD	*------ M/H	2006 USD	*------ M/H	2007 USD	*------ M/H	2008 USD	*------ M/H	2009 USD	*------ M/H	2010 USD
10	**PROJECT PERSONNEL**																	
11	**International Professionals**																	
11-01	Network Administrator	3,022,580	2.5	22,359	12.0	93,953	12.0	101,296	12.0	156,503	12.0	197,784	12.0	177,449	12.0	207,289	12.0	201,030
11-51	Institutional Aspects	0																
11-97	Consultants	55,396				(6,303)								1,499				
11-99	**Sub-Total**	**3,077,976**	**2.5**	**22,359**	**12.0**	**87,650**	**12.0**	**101,296**	**12.0**	**156,503**	**12.0**	**197,784**		**178,948**		**207,289**		**201,030**
13	**ADMINISTRATIVE SUPPORT**	264,375		354	6.0	12,185	6.0	12,551			6.0	15,968	6.0	11,471	6	16,497	6	14,066
13-01	Bilingual secretary	24,819			12.0	12,000	12.0	12,108		711								
13-02	REDDIG technician	0																
13-03	REDDIG technician 2	7,516												7,516				
13-04	Bilingual secretary (final)	48,263																
13-05	Administrative and financial assistant	89,261																
13-06	Information technology clerk																	
13.99	**Sub-Total**	**434,234**		**354**	**18**	**24,185**	**18**	**24,659**	**0**	**711**	**6**	**15,968**	**6**	**18,987**	**6**	**16,497**	**6**	**14,066**
15	**OFFICIAL TRAVEL**																	
15-01	Official travel	1,745				321		925		499								
15-99	**Sub-total**	**1,745**				**321**		**925**		**499**		**0**		**0**		**0**		**0**
16	**MISSIONS**																	
16-01	Mission costs	248,566		3,504		4,110		16,732		18,642		18,357		25,718		10,615		14,110
16-99	**Sub-total**	**248,566**		**3,504**		**4,110**		**16,732**		**18,642**		**18,357**		**25,718**		**10,615**		**14,110**
17	**NATIONAL PROFESSIONALS**																	
17-01	National Professionals	4,810														2,080		
17-99	**Sub-total**	**4,810**														**2,080**		**0**
19	**Component total**	**3,767,331**		**26,217**		**116,266**		**143,612**		**176,355**		**232,109**		**223,653**		**236,481**		**229,206**
20	**SUBCONTRACTS**																	
21-01	Rental of satellite segment (P.O. 40670)																	
	P.O. 30473 (1 Oct 2003 to 31 Dec 2003)	62,727		62,727														
	P.O. 40670 (1 Jan 2005 to 31 Dec 2008)	1,093,905				168,849		231,264		231,264		231,264		231,264				
	Rental 2009-2011	462,528																462,528
	Rental 2012-2014	696,354																
	Rental 2015-2017	733,274																
	Rental 2018	0																
21-02	Network Access	405,399																
21-03	MEVA/REDDIG Recurrent Brazil	8,820																
21-04	MEVA/REDDIG Recurrent Caracas	30,384																
21-05	MEVA/REDDIG Recurrent Bogota	30,060																
21-06	MEVA/REDDIG Recurrent Lima	8,820																
21-07	MEVA/REDDIG Non Recurrent	75,071																75,071
	TERRESTRIAL SERVICE-TOTAL																	
	Terrestrial service SAEZ	120,000																

PROJECT BUDGET

(in US dollars)

Country: Regional for South America
Project: RLA/03/901/S
Title: REDDIG Management System and Satellite Segment Administration

Starting date: 1 July 2003
Termination date: 31 December 2018

		TOTAL USD	*------ M/H	2003 USD	*------ M/H	2004 USD	*------ M/H	2005 USD	*------ M/H	2006 USD	*------ M/H	2007 USD	*------ M/H	2008 USD	*------ M/H	2009 USD	*------ M/H	2010 USD
	Terrestrial service SLLP	120,000																
	Terrestrial service SBCT	120,000																
	Terrestrial service SBMN	120,000																
	Terrestrial service SBRF	120,000																
	Terrestrial service SBBR	0																
	Terrestrial service SCEL	120,000																
	Terrestrial service SKED	120,000																
	Terrestrial service SEGU	120,000																
	Terrestrial service SOCA	120,000																
	Terrestrial service SYGC	120,000																
	Terrestrial service SGAS	120,000																
	Terrestrial service SPIM	120,000																
	Terrestrial service SMPM	120,000																
	Terrestrial service TTZP	120,000																
	Terrestrial service SUMU	120,000																
	Terrestrial service SVMI	120,000																
21-98	Professional liability insurance	29,943				845		1,156		3,469				1,156		1,156		2,161
29	**Component total**	**5,557,285**		**62,727**		**169,694**		**232,420**		**234,733**		**231,264**		**232,420**		**1,156**		**539,760**
30	**TRAINING**																	
31	Individual fellowships																	
31-01	SAEZ (Vittor)	883						883										
31-02	SCEL (Vergara)	859						859										
31-03	SEGU (Avellán)	857						857										
31-04	SEGU (Tapia)	857						857										
31-05	SOCA (Burtin)	870						870										
31-06	SYGC (Salisbury)	857						857										
31-07	SMPM (Maharban)	857						857										
31-08	SMPM (Martosoewito)	857						857										
31-09	SVMI (Correa)	857						857										
31-10	SOCA (Berton)	870						870										
31-11	SVMI (Padrón)	857						857										
31-12	SAEZ (Schenk)	1,422						1,422										
31-13	SBMN (Mello)	1,422						1,422										
31-14	SGAS (Torres)	857						857										
31-15	SGAS (Pereira)	857						857										
31-16	SUMU (Vera)	857						857										
31-17	SUMU (Pelayo)	857						857										
31-18	SLLP (Balderrama)	870						1,000				-130						
31-19	SLLP (Tito)	870						1,000				-130						
31-20	SVMI (Castillo)	858						858										
		0																
31-21	SYGC (Mortimer)	1,017								1,017								
31-22	SYGC (Stanley)	1,017								1,017								
31-23	SMPM (Rabindre)	876								1,017		-141						
31-24	SMPM (Wakidi)	876								1,017		-141						
31-25	SAEZ (Vittor)	1,017								1,017								
31-26	SAEZ (Alaniz)	1,017								1,017								
31-27	SKED (Ciro)	1,727								1,727								
31-28	SKED (Sanchez)	1,727								1,727								
31-29	SGAS (Torres)	1,659								1,659								

PROJECT BUDGET

(in US dollars)

Country: Regional for South America
Project: RLA/03/901/S
Title: REDDIG Management System and Satellite Segment Administration

Starting date: 1 July 2003
Termination date: 31 December 2018

		TOTAL	*------	2003	*------	2004	*------	2005	*------	2006	*------	2007	*------	2008	*------	2009	*------	2010
		USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD
31-30	SGAS (Pereira)	1,659								1,659								
31-31	SLLP (Lara)	1,017								1,017								
31-32	SLLP (Tito)	1,017								1,017								
31-33	SUMU (Vera)	2,538								2,538								
31-34	SUMU (Pelayo)	2,538								2,538								
31-35	TTZP (Gunnes)	1,017								1,017								
31-36	TTZP (Rupnarine)	1,017								1,017								
31-37	SEGU (Avellan)	988								988								
31-38	SEGU (Cepeda)	987								987								
31-39	SPIM (Cespedes)	2,142								2,142								
31-40	SPIM (Donayre)	2,142								2,142								
		0																
31-41	SYGC (Mohanram)	1,323										1,323						
31-42	SYGC (Gittens, Troy)	1,323										1,323						
31-43	SGAS (Pereira, Aldo)	4,153										4,153						
31-44	SGAS (Torres, David)	2,251										2,251						
31-45	TTZP (Mckay, Garvin)	1,323										1,323						
31-46	TTZP (Baboolal, Rupnarine)	1,323										1,323						
31-47	SUMU (Vera, Miguel)	2,460										2,460						
31-48	SUMU (Pelayo, Daniel)	2,460										2,460						
31-49	SEGU (Avellan, Raul)	2,623										2,623						
31-50	SEGU (Rugel, Arnoldo)	1,323										1,323						
31-51	SLLP (Balderrama, Barrios)	1,323										1,323						
31-52	SLLP (Huayllas, Hernan)	1,323										1,323						
31-53	SAEZ (Vittor, Cristian)	3,161										3,161						
31-54	SAEZ (Canna, Hernan)	3,161										3,161						
31-55	SPIM (Peralta, Donayre)	2,125										2,125						
31-56	SPIM (Velazquez Palomares)	2,125										2,125						
		0																
31-57	SAEZ (Carlos Adragna)	1,432												1,432				
31-58	SAEZ (Obdulio Gourarnalusse)	1,432												1,432				
31-59	SAEZ (Jaiver Schenk)	2,147												2,147				
31-60	SMPN (Rabindre Kumar)	1,119												1,119				
31-61	TTZP (Moses Brumant)	1,119												1,119				
31-62	TTZP (Garvin Mc Kay)	1,119												1,119				
31-63	SOCA (Gilles Marland)	1,119												1,119				
31-64	SOCA (Serge Diotalevi)	1,119												1,119				
31-65	SMPN (Mahabier Radjinderloemar)	1,119												1,119				
31-66	SAEZ (Carlos Adragna)	2,467												2,467				
31-67	SAEZ (O. Ferreyra)	2,467												2,467				
31-68	SGAS (J. Alarcón)	2,523												2,523				
31-69	SGAS (César Brizuela)	2,523												2,523				
31-70	SGAS (V. Morán)	2,523												2,523				
31-71	SUMU (I. Espalter)	2,272												2,272				
31-72	SUMU (E. Diaz)	2,272												2,272				
31-73	SPIM (S. Velásquez)	2,041												2,041				
31-74	SPIM (J. Wilson)	2,039												2,039				
		0																
31-75	SAEZ (C. Adragna)	1,022														1,022		
31-76	SAEZ (J. Vittor)	1,022														1,022		
31-77	SAEZ (M. Moreno)	1,022														1,022		
31-78	SGAS (A. Pereira)	1,830														1,830		

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		TOTAL	*------	2003	*------	2004	*------	2005	*------	2006	*------	2007	*------	2008	*------	2009	*------	2010
		USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD
31-79	SGAS (V. Morán)	1,830														1,830		
31-80	SGAS (G. Baez)	1,830														1,830		
31-81	SPIM (J. García)	799														799		
31-82	SPIM (J. Salazar)	799														799		
31-83	SPIM (R. Peralta)	799														799		
31-84	SKED (N. Torres)	1,022														1,022		
31-85	SKED (G. Guzmán)	1,022														1,022		
31-86	SLLP (H. Balderrama)	1,022														1,022		
31-87	SLLP (P. Huayllas)	1,022														1,022		
31-88	SUMU (M. Vera)	1,010														1,010		
31-89	SUMU (E. Diaz)	1,010														1,010		
31-90	SYGC (M. Salisbury)	1,267														1,267		
31-91	SYGC (S. Jackson)	1,267														1,267		
31-92	SOCA (G. Marland)	1,267														1,267		
31-93	SEGU (A. Cepeda)	1,022														1,022		
31-94	SEGU (W. Quinde)	1,022														1,022		
34-03	TTZP (R. Halliday)	1,289														1,289		
34-04	TTZP (S. Saroop)	1,289														1,289		
		0																
31-95	SMPM (R. Maharban)	1,482																1,482
31-96	SMPM (R. Lansdorf)	1,482																1,482
31-97	SAEZ (C. Adragna)	2,121																2,121
31-98	SAEZ (H. Canna)	1,248																1,248
31-99	SUMU (W. Pelayo)	1,482																1,482
36-01	SUMU (R. Facal)	1,482																1,482
36-02	SVMI (A. Arias)	1,482																1,482
36-03	SVMI (L. Escobar)	1,482																1,482
36-04	SGAS (J. Estigarribia)	1,482																1,482
36-05	SGAS (O. Pereira)	1,482																1,482
36-06	SYGC (M. Salisbury)	1,482																1,482
36-08	SEGU (B. Iglesias)	1,482																1,482
36-09	SEGU (E. Cepeda)	1,482																1,482
36-10	SCEL (C. Vergara)	1,482																1,482
36-11	SKED (D. Rodríguez)	1,482																1,482
31-88	SUMU (M. Vera)	-1,005																-1,005
34-05	TTZP (S. Gopaul)	1,482																1,482
31-75	SAEZ (C. Vittor)	873																873
31-77	SAEZ (M. Moreno)	873																873
	(J. Ochoa)	2,075																2,075
	(V. Fiore)	2,075																2,075
	(Various)	488																488
36-12	SMPM (R. Maharban)	1,014																
36-13	SMPM (K. Goercharan)	1,014																
36-15	SUMU (M. Vera)	1,014																
36-16	SCEL (C. Vergara)	1,014																
36-17	SVMI (J. Castillo)	1,014																
36-18	SYGC (S. Hemchan)	1,014																
36-19	SLLP (H. Huaylla)	1,014																
36-20	SMPM (S. Radjie)	1,405																
36-21	SUMU (W. Pelayo)	1,413																

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36-22	SKED (O. Alfonso Bravo)	1,416																
36-23	SVMI (O. Guilllén)	1,416																
36-24	SEGU (V. Yépez)	1,416																
36-25	SEGU (L. Pazos)	1,416																
36-26	SYGC (R. Suresh)	1,416																
36-27	SYGC (M. Barrington)	1,416																
36-28	SCEL (E. Demanet)	1,416																
36-29	SLLP (R. Cusi)	1,416																
36-30	SGAS (V. Morán)	1,416																
	SUMU (M. Vera)	1,405																
	SKED (M. Zamudio)	1,416																
	SMPM (K.Goercharan)	1,405																
	SVMI (R.Canales)	1,405																
	SYGC (M.Maycock)	1,405																
	SGAS (A.Torres)	1,405																
	SGAS (A.Noguera)	1,405																
	SGAS (W.Davalos)	1,405																
	SUMU (R.Pesce)	1,405																
	SGAS (A. Pereira)	1,336																
	SUMU (M. Vera)	1,336																
	SYGC (S. Gopaul)	1,337																
	SBCT (F. Almeida)	1,337																
	SBCT (R. Rodrigues)	1,336																
	SEGU (R. Avellana)	1,336																
	SGAS (O Pereira)	1,295																
	SPIM (A Arango)	1,295																
	E Da Paixao	1,295																
	P Pineda	1,295																
	SUMU (M Vera)	1,295																
	SCEL (C Vergara)	1,295																
	SEGU (R Avellan)	1,295																
	SAEZ (S Vallone)	1,295																
	SBCT (J Cheron)	1,295																
	SBCT (B Santos)	1,295																
36-		0																
36-	To be determinated	100,000																
31-99	**Sub Total**	**324,250**						**18,611**		**28,277**		**33,238**		**32,852**		**25,488**		**29,496**
33	**Group training**																	
33-01	Tuition fee MEMOTEC PO 50632	25,100						25,100										
33-02	Tuition fee VIASAT PO 50661	9,950						9,950										
33-03	Tuition fees COM courses	18,701																
33-04	Soft Whatsup Gold Manage and operation	0																
33-05	Basic Course Network, Enrutadores and Switch	0																
33-97	Simultaneous interpretation	71,386																
33-98	Previous years adjustments	5,956								2,276		806				7,905		
	Other charges	7,366														1,020		6,346

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		TOTAL USD	*------ M/H	2003 USD	*------ M/H	2004 USD	*------ M/H	2005 USD	*------ M/H	2006 USD	*------ M/H	2007 USD	*------ M/H	2008 USD	*------ M/H	2009 USD	*------ M/H	2010 USD
33-99	**Sub-total**	**138,459**						**35,050**		**2,276**		**806**		**0**		**8,925**		**6,346**
37	**Insurance**																	
37-98	Professional liability insurance	3,215				3,014		201										
37-99	**Sub-total**	**3,215**				**3,014**		**201**		**0**		**0**		**0**		**0**		**0**
39	**Component total**	**465,924**				**3,014**		**53,862**		**30,553**		**34,044**		**32,852**		**34,413**		**35,842**
40	**EQUIPMENT**																	
	Reimbursement RLA/98/019 (Customs)	-12,752				-12,752												
45-01	Equipment + Spare parts	0																
	SAM REDDIG Spare parts	214,000						45,930		17,750		6,889		17,957		102,072		12,507
	REDDIG II Spare parts	105,000																
	SAEZ	3,377												2,458		919		
	SLLP	6,297										3,194		3,103		0		
	SBRF-SBMN-SBCT	20,464						6,490		13,824		150						
	SBBR	0																
	SCEL	3,498						3,009		1,603		-1,494				380		
	SKED	20,254								84		14,466		3,207		2,498		
	SEGU	7,260						1,870		2,390		2,620				380		
	SOCA	240														240		
	SYGC	1,871										268		1,603		0		
	SGAS	8,363								660		5,467		2,236				
	SPIM	0																
	SMPM	1,350										1,350						
	TTZP	3,503												1,723		1,780		
	SUMU	37,741										36,031		1,710				
	SVMI	5,179						2,242				2,697				240		
	Sub Total	**425,645**		**0**		**-12,752**		**59,541**		**36,311**		**71,637**		**33,997**		**108,509**		**12,507**
45-02	Equipment for the REDDIG Office	18,792		82						-30								
	Laptop REDDIG	3,965						1,829										
	LINDY COMPU PO 50534 SBMN	254						254										
	Sub Total	**23,011**		**82**		**0**		**2,083**		**-30**		**0**		**0**		**0**		**0**
45-03	Operation/maintenance of office equipment	9,725				1,716												
	PO 50522 VIASAT Modem SYGC repair	1,603						1,603										
	CB LIMA	179						179										
45-04	Transfer of NCC from SPIM to SBMN																	
	P.O. 040694 VIASAT	8,250				8,250												
	P.O. 040687 MEMOTEC	4,250				4,250												
45-05	Extension of contract SEEE (P.O. 40489)	50,000				50,000												
45-06	Backup network SEEE (P.O. 04090)	24,820				24,820												
45-07	Audit adjustment	0																
45-08	P.O. 40683 Modem SPIM repair	0																
45-09	MEVA-REDDIG interconnection equipment	9,439																
45-10	REDDIG II procurement	0																

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	SAEZ	292,425																
	SLLP	292,425																
	SBRF-SBMN-SBCT	877,274																
	SBBR	0																
	SCEL	292,425																
	SKED	292,425																
	SEGU	292,425																
	SOCA	292,425																
	SYGC	292,425																
	SGAS	292,425																
	SPIM	292,425																
	SMPM	292,425																
	TTZP	292,425																
	SUMU	292,425																
	SVMI	292,425																
45-98	Professional liability insurance	2,213				444		284		246				130		1,109		
45-99	**Sub-Total**	**4,789,276**		**0**		**89,480**		**2,066**		**246**		**0**		**130**		**1,109**		**0**
49	**Component total**	**5,237,932**		**82**		**76,728**		**63,690**		**36,527**		**71,637**		**34,127**		**109,617**		**12,507**
50	**MISCELLANEOUS**																	
53-01	Sundry	148,875		643		4,726		4,475		1,150		8,688		4,632		3,703		9,157
53-02	UNDP charges for services and other	6,978				118		505		337						3,318		
53-99	**Sub-Total**	**155,853**		**643**		**4,844**		**4,980**		**1,487**		**8,688**		**4,632**		**7,021**		**9,157**
55	Administrative costs	1,626,518		6,439		28,795		35,817		37,372		34,601		39,503		55,621		33,357
59	**Component total**	**1,782,804**		**7,082**		**33,639**		**40,797**		**38,859**		**43,289**		**44,135**		**62,642**		**42,514**
99	**PROJECT TOTAL**	**16,811,276**		**96,108**		**399,341**		**534,381**		**517,027**		**612,343**		**567,187**		**444,309**		**859,829**
100	**COST SHARING**																	
101	Cost Sharing Governments																	
101-01	Argentina	1,296,052		50,329		34,231		36,123		46,800		65,423		77,660		85,559		0
101-02	Bolivia	975,670		0		22,090		45,632		56,421		0		54,595		52,460		48,039
101-03	Brasil	2,848,670		123,780		77,954		74,346		113,775		58,035		81,444		118,039		142,700
101-04	Chile	948,384		40,003		80,066		76,724		10,430		0		29,500		29,500		1,000
101-05	Colombia	1,097,480		24,269		0		162,094		0		0		150,000		7,441		0
101-06	Ecuador	963,737		40,903		19,559		21,151		29,100		19,000		40,865		51,589		35,000
101-07	Francia	917,244		33,941		12,112		20,910		26,400		25,000		45,795		51,371		24,092
101-08	Guyana	891,082		0		44,203		10,006		10,278		27,854		35,378		29,119		43,870
101-09	Paraguay	940,139		42,550		5,503		21,910		30,700		25,600		46,160		53,262		0
101-10	Perú	1,207,773		49,603		29,660		35,140		39,700		40,010		71,372		77,820		0
101-11	Suriname	901,621		0		41,693		18,505		0		0		28,670		18,330		0
101-12	Uruguay	1,027,385		47,478		16,166		28,854		27,985		77,156		52,871		39,729		29,970
101-13	Venezuela	1,220,999		44,203		15,790		27,220		45,800		38,700		71,774		81,664		88,967
101-14	Intereses y ajustes	521,054		1,447		4,765		9,685		16,157		17,065		8,630		1,948		770
101-15	Trinidad y Tabago	824,513						40,110		5,274		15,500		37,787		48,776		29,980

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101-16	COCESNA	229,475														0		0
101-99	**Sub-Total**	**16,811,276**		498,506		403,792		628,410		458,820		409,343		832,501		746,607		444,388
109	**Component total**	**16,811,276**		498,506		403,792		628,410		458,820		409,343		832,501		746,607		444,388

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10	**PROJECT PERSONNEL**																	
11	**International Professionals**																	
11-01	Network Administrator	3,022,580	12.0	209,250	12.0	232,544	12.0	212,112	12.0	211,011	12.0	250,000	12.0	250,000	12.0	250,000	12.0	250,000
11-51	Institutional Aspects	0																
11-97	Consultants	55,396		9,200		0	0	0		0		0		17,000		17,000		17,000
11-99	**Sub-Total**	**3,077,976**		**218,450**		**232,544**		**212,112**		**211,011**		**250,000**		**267,000**		**267,000**		**267,000**
13	**ADMINISTRATIVE SUPPORT**	264,375	6	19,086	6	19,443	6	17,183	6	17,571	6	27,000	6	27,000	6	27,000	6	27,000
13-01	Bilingual secretary	24,819																
13-02	REDDIG technician	0																
13-03	REDDIG technician 2	7,516																
13-04	Bilingual secretary (final)	48,263	4	10,670	4	12,831	4	15,508	4	9,254								
13-05	Administrative and financial assistant	89,261	4	8,931	4	107	3	11,425	3	7,798	4	14,500	4	15,000	4	15,500	4	16,000
13-06	Information technology clerk																	
13.99	**Sub-Total**	**434,234**	**14**	**38,687**	**14**	**32,381**	**13**	**44,116**	**13**	**34,623**	**10**	**41,500**	**10**	**42,000**	**10**	**42,500**	**10**	**43,000**
15	**OFFICIAL TRAVEL**																	
15-01	Official travel	1,745				0		0		0								
15-99	**Sub-total**	**1,745**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**
16	**MISSIONS**																	
16-01	Mission costs	248,566		10,250		36,747		5,075		20,306		9,400		20,000		20,000		15,000
16-99	**Sub-total**	**248,566**		**10,250**		**36,747**		**5,075**		**20,306**		**9,400**		**20,000**		**20,000**		**15,000**
17	**NATIONAL PROFESSIONALS**																	
17-01	National Professionals	4,810		961								1,769						
17-99	**Sub-total**	**4,810**		**961**		**0**		**0**		**0**		**1,769**		**0**		**0**		**0**
19	**Component total**	**3,767,331**		**268,348**		**301,672**		**261,303**		**265,940**		**302,669**		**329,000**		**329,500**		**325,000**
20	**SUBCONTRACTS**																	
21-01	Rental of satellite segment (P.O. 40670)																	
	P.O. 30473 (1 Oct 2003 to 31 Dec 2003)	62,727																
	P.O. 40670 (1 Jan 2005 to 31 Dec 2008)	1,093,905																
	Rental 2009-2011	462,528																
	Rental 2012-2014	696,354				233,826		231,264		231,264								
	Rental 2015-2017	733,274										233,274		250,000		250,000		
	Rental 2018	0																
21-02	Network Access	405,399		32,831		24,650		77,518		45,039		46,201		59,720		59,720		59,720
21-03	MEVA/REDDIG Recurrent Brazil	8,820												2,940		2,940		2,940
21-04	MEVA/REDDIG Recurrent Caracas	30,384												10,128		10,128		10,128
21-05	MEVA/REDDIG Recurrent Bogota	30,060												10,020		10,020		10,020
21-06	MEVA/REDDIG Recurrent Lima	8,820												2,940		2,940		2,940
21-07	MEVA/REDDIG Non Recurrent	75,071																
	TERRESTRIAL SERVICE-TOTAL																	
	Terrestrial service SAEZ	120,000										30,000		30,000		30,000		30,000

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	Terrestrial service SLLP	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SBCT	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SBMN	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SBRF	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SBBR	0																
	Terrestrial service SCEL	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SKED	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SEGU	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SOCA	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SYGC	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SGAS	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SPIM	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SMPM	120,000										30,000		30,000		30,000		30,000
	Terrestrial service TTZP	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SUMU	120,000										30,000		30,000		30,000		30,000
	Terrestrial service SVMI	120,000										30,000		30,000		30,000		30,000
21-98	Professional liability insurance	29,943				0		0				5,000		5,000		5,000		5,000
29	**Component total**	**5,557,285**		**32,831**		**258,476**		**308,782**		**276,303**		**764,475**		**820,748**		**820,748**		**570,748**
30	**TRAINING**																	
31	Individual fellowships																	
31-01	SAEZ (Vittor)	883																
31-02	SCEL (Vergara)	859																
31-03	SEGU (Avellán)	857																
31-04	SEGU (Tapia)	857																
31-05	SOCA (Burtin)	870																
31-06	SYGC (Salisbury)	857																
31-07	SMPM (Maharban)	857																
31-08	SMPM (Martosoewito)	857																
31-09	SVMI (Correa)	857																
31-10	SOCA (Berton)	870																
31-11	SVMI (Padrón)	857																
31-12	SAEZ (Schenk)	1,422																
31-13	SBMN (Mello)	1,422																
31-14	SGAS (Torres)	857																
31-15	SGAS (Pereira)	857																
31-16	SUMU (Vera)	857																
31-17	SUMU (Pelayo)	857																
31-18	SLLP (Balderrama)	870																
31-19	SLLP (Tito)	870																
31-20	SVMI (Castillo)	858																
		0																
31-21	SYGC (Mortimer)	1,017																
31-22	SYGC (Stanley)	1,017																
31-23	SMPM (Rabindre)	876																
31-24	SMPM (Wakidi)	876																
31-25	SAEZ (Vittor)	1,017																
31-26	SAEZ (Alaniz)	1,017																
31-27	SKED (Ciro)	1,727																
31-28	SKED (Sanchez)	1,727																
31-29	SGAS (Torres)	1,659																

PROJECT BUDGET

(in US dollars)

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		TOTAL	*------	2011	*------	2012	*------	2013	*------	2014	*------	2015	*------	2016	*------	2017	*------	2018
		USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD
31-30	SGAS (Pereira)	1,659																
31-31	SLLP (Lara)	1,017																
31-32	SLLP (Tito)	1,017																
31-33	SUMU (Vera)	2,538																
31-34	SUMU (Pelayo)	2,538																
31-35	TTZP (Gunnes)	1,017																
31-36	TTZP (Rupnarine)	1,017																
31-37	SEGU (Avellan)	988																
31-38	SEGU (Cepeda)	987																
31-39	SPIM (Cespedes)	2,142																
31-40	SPIM (Donayre)	2,142																
		0																
31-41	SYGC (Mohanram)	1,323																
31-42	SYGC (Gittens, Troy)	1,323																
31-43	SGAS (Pereira, Aldo)	4,153																
31-44	SGAS (Torres, David)	2,251																
31-45	TTZP (Mckay, Garvin)	1,323																
31-46	TTZP (Baboolal, Rupnarine)	1,323																
31-47	SUMU (Vera, Miguel)	2,460																
31-48	SUMU (Pelayo, Daniel)	2,460																
31-49	SEGU (Avellan, Raul)	2,623																
31-50	SEGU (Rugel, Arnoldo)	1,323																
31-51	SLLP (Balderrama, Barrios)	1,323																
31-52	SLLP (Huayllas, Hernan)	1,323																
31-53	SAEZ (Vittor, Cristian)	3,161																
31-54	SAEZ (Canna, Hernan)	3,161																
31-55	SPIM (Peralta, Donayre)	2,125																
31-56	SPIM (Velazquez Palomares)	2,125																
		0																
31-57	SAEZ (Carlos Adragna)	1,432																
31-58	SAEZ (Obdulio Gourarnalusse)	1,432																
31-59	SAEZ (Jaiver Schenk)	2,147																
31-60	SMPN (Rabindre Kumar)	1,119																
31-61	TTZP (Moses Brumant)	1,119																
31-62	TTZP (Garvin Mc Kay)	1,119																
31-63	SOCA (Gilles Marland)	1,119																
31-64	SOCA (Serge Diotalevi)	1,119																
31-65	SMPN (Mahabier Radjinderloemar)	1,119																
31-66	SAEZ (Carlos Adragna)	2,467																
31-67	SAEZ (O. Ferreyra)	2,467																
31-68	SGAS (J. Alarcón)	2,523																
31-69	SGAS (César Brizuela)	2,523																
31-70	SGAS (V. Morán)	2,523																
31-71	SUMU (I. Espalter)	2,272																
31-72	SUMU (E. Diaz)	2,272																
31-73	SPIM (S. Velásquez)	2,041																
31-74	SPIM (J. Wilson)	2,039																
		0																
31-75	SAEZ (C. Adragna)	1,022																
31-76	SAEZ (J. Vittor)	1,022																
31-77	SAEZ (M. Moreno)	1,022																
31-78	SGAS (A. Pereira)	1,830																

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		TOTAL	*------	2011	*------	2012	*------	2013	*------	2014	*------	2015	*------	2016	*------	2017	*------	2018
		USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD
31-79	SGAS (V. Morán)	1,830																
31-80	SGAS (G. Baez)	1,830																
31-81	SPIM (J. García)	799																
31-82	SPIM (J. Salazar)	799																
31-83	SPIM (R. Peralta)	799																
31-84	SKED (N. Torres)	1,022																
31-85	SKED (G. Guzmán)	1,022																
31-86	SLLP (H. Balderrama)	1,022																
31-87	SLLP (P. Huayllas)	1,022																
31-88	SUMU (M. Vera)	1,010																
31-89	SUMU (E. Diaz)	1,010																
31-90	SYGC (M. Salisbury)	1,267																
31-91	SYGC (S. Jackson)	1,267																
31-92	SOCA (G. Marland)	1,267																
31-93	SEGU (A. Cepeda)	1,022																
31-94	SEGU (W. Quinde)	1,022																
34-03	TTZP (R. Halliday)	1,289																
34-04	TTZP (S. Saroop)	1,289																
		0																
31-95	SMPM (R. Maharban)	1,482																
31-96	SMPM (R. Lansdorf)	1,482																
31-97	SAEZ (C. Adragna)	2,121																
31-98	SAEZ (H. Canna)	1,248																
31-99	SUMU (W. Pelayo)	1,482																
36-01	SUMU (R. Facal)	1,482																
36-02	SVMI (A. Arias)	1,482																
36-03	SVMI (L. Escobar)	1,482																
36-04	SGAS (J. Estigarribia)	1,482																
36-05	SGAS (O. Pereira)	1,482																
36-06	SYGC (M. Salisbury)	1,482																
36-08	SEGU (B. Iglesias)	1,482																
36-09	SEGU (E. Cepeda)	1,482																
36-10	SCEL (C. Vergara)	1,482																
36-11	SKED (D. Rodríguez)	1,482																
31-88	SUMU (M. Vera)	-1,005																
34-05	TTZP (S. Gopaul)	1,482																
31-75	SAEZ (C. Vittor)	873																
31-77	SAEZ (M. Moreno)	873																
	(J. Ochoa)	2,075																
	(V. Fiore)	2,075																
	(Various)	488																
36-12	SMPM (R. Maharban)	1,014		1,014														
36-13	SMPM (K. Goercharan)	1,014		1,014														
36-15	SUMU (M. Vera)	1,014		1,014														
36-16	SCEL (C. Vergara)	1,014		1,014														
36-17	SVMI (J. Castillo)	1,014		1,014														
36-18	SYGC (S. Hemchan)	1,014		1,014														
36-19	SLLP (H. Huaylla)	1,014		1,014														
36-20	SMPM (S. Radjie)	1,405				1,405												
36-21	SUMU (W. Pelayo)	1,413				1,413												

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		TOTAL USD	*------ M/H	2011 USD	*------ M/H	2012 USD	*------ M/H	2013 USD	*------ M/H	2014 USD	*------ M/H	2015 USD	*------ M/H	2016 USD	*------ M/H	2017 USD	*------ M/H	2018 USD
36-22	SKED (O. Alfonso Bravo)	1,416				1,416												
36-23	SVMI (O. Guilllén)	1,416				1,416												
36-24	SEGU (V. Yépez)	1,416				1,416												
36-25	SEGU (L. Pazos)	1,416				1,416												
36-26	SYGC (R. Suresh)	1,416				1,416												
36-27	SYGC (M. Barrington)	1,416				1,416												
36-28	SCEL (E. Demanet)	1,416				1,416												
36-29	SLLP (R. Cusi)	1,416				1,416												
36-30	SGAS (V. Morán)	1,416				1,416												
	SUMU (M. Vera)	1,405						1,405										
	SKED (M. Zamudio)	1,416						1,416										
	SMPM (K.Goercharan)	1,405						1,405										
	SVMI (R.Canales)	1,405						1,405										
	SYGC (M.Maycock)	1,405						1,405										
	SGAS (A.Torres)	1,405						1,405										
	SGAS (A.Noguera)	1,405						1,405										
	SGAS (W.Davalos)	1,405						1,405										
	SUMU (R.Pesce)	1,405						1,405										
	SGAS (A. Pereira)	1,336								1,336								
	SUMU (M. Vera)	1,336								1,336								
	SYGC (S. Gopaul)	1,337								1,337								
	SBCT (F. Almeida)	1,337								1,337								
	SBCT (R. Rodrigues)	1,336								1,336								
	SEGU (R. Avellana)	1,336								1,336								
	SGAS (O Pereira)	1,295										1,295						
	SPIM (A Arango)	1,295										1,295						
	E Da Paixao	1,295										1,295						
	P Pineda	1,295										1,295						
	SUMU (M Vera)	1,295										1,295						
	SCEL (C Vergara)	1,295										1,295						
	SEGU (R Avellan)	1,295										1,295						
	SAEZ (S Vallone)	1,295										1,295						
	SBCT (J Cheron)	1,295										1,295						
	SBCT (B Santos)	1,295										1,295						
36-		0																
36-	To be determinated	100,000												40,000		40,000		20,000
31-99	**Sub Total**	**324,250**		**7,101**		**15,562**		**12,656**		**8,017**		**12,953**		**40,000**		**40,000**		**20,000**
33	**Group training**																	
33-01	Tuition fee MEMOTEC PO 50632	25,100																
33-02	Tuition fee VIASAT PO 50661	9,950																
33-03	Tuition fees COM courses	18,701				8,583		10,118		0								
33-04	Soft Whatsup Gold Manage and operation	0																
33-05	Basic Course Network, Enrutadores and Switch	0																
33-97	Simultaneous interpretation	71,386		3,060		9,446		15,648		15,714		9,518		6,000		6,000		6,000
33-98	Previous years adjustments	5,956		-5,031														
	Other charges	7,366																

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		TOTAL USD	*------ M/H	2011 USD	*------ M/H	2012 USD	*------ M/H	2013 USD	*------ M/H	2014 USD	*------ M/H	2015 USD	*------ M/H	2016 USD	*------ M/H	2017 USD	*------ M/H	2018 USD
33-99	**Sub-total**	**138,459**		**-1,971**		**18,029**		**25,766**		**15,714**		**9,518**		**6,000**		**6,000**		**6,000**
37	**Insurance**																	
37-98	Professional liability insurance	3,215																
37-99	**Sub-total**	**3,215**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**
39	**Component total**	**465,924**		**5,130**		**33,591**		**38,422**		**23,731**		**22,471**		**46,000**		**46,000**		**26,000**
40	**EQUIPMENT**																	
	Reimbursement RLA/98/019 (Customs)	-12,752																
45-01	Equipment + Spare parts	0																
	SAM REDDIG Spare parts	214,000		2,896		635		2,307		5,057								
	REDDIG II Spare parts	105,000												30,000		40,000		35,000
	SAEZ	3,377																
	SLLP	6,297																
	SBRF-SBMN-SBCT	20,464																
	SBBR	0																
	SCEL	3,498																
	SKED	20,254																
	SEGU	7,260																
	SOCA	240																
	SYGC	1,871																
	SGAS	8,363																
	SPIM	0																
	SMPM	1,350																
	TTZP	3,503																
	SUMU	37,741																
	SVMI	5,179																
	Sub Total	**425,645**		**2,896**		**635**		**2,307**		**5,057**		**0**		**30,000**		**40,000**		**35,000**
45-02	Equipment for the REDDIG Office	18,792		1,266		757		4,421				1,796		3,500		3,500		3,500
	Laptop REDDIG	3,965		2,136														
	LINDY COMPU PO 50534 SBMN	254																
	Sub Total	**23,011**		**3,402**		**757**		**4,421**		**0**		**1,796**		**3,500**		**3,500**		**3,500**
45-03	Operation/maintenance of office equipment	9,725		2,009				0		0				2,000		2,000		2,000
	PO 50522 VIASAT Modem SYGC repair	1,603																
	CB LIMA	179																
45-04	Transfer of NCC from SPIM to SBMN																	
	P.O. 040694 VIASAT	8,250																
	P.O. 040687 MEMOTEC	4,250																
45-05	Extension of contract SEEE (P.O. 40489)	50,000																
45-06	Backup network SEEE (P.O. 04090)	24,820																
45-07	Audit adjustment	0																
45-08	P.O. 40683 Modem SPIM repair	0																
45-09	MEVA-REDDIG interconnection equipment	9,439		9,439														
45-10	REDDIG II procurement	0																

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		TOTAL USD	*------ M/H	2011 USD	*------ M/H	2012 USD	*------ M/H	2013 USD	*------ M/H	2014 USD	*------ M/H	2015 USD	*------ M/H	2016 USD	*------ M/H	2017 USD	*------ M/H	2018 USD
	SAEZ	292,425						17,841		94,908		179,676						
	SLLP	292,425						17,841		94,908		179,676						
	SBRF-SBMN-SBCT	877,274						53,523		284,725		539,027						
	SBBR	0																
	SCEL	292,425						17,841		94,908		179,676						
	SKED	292,425						17,841		94,908		179,676						
	SEGU	292,425						17,841		94,908		179,676						
	SOCA	292,425						17,841		94,908		179,676						
	SYGC	292,425						17,841		94,908		179,676						
	SGAS	292,425						17,841		94,908		179,676						
	SPIM	292,425						17,841		94,908		179,676						
	SMPM	292,425						17,841		94,908		179,676						
	TTZP	292,425						17,841		94,908		179,676						
	SUMU	292,425						17,841		94,908		179,676						
	SVMI	292,425						17,841		94,908		179,676						
45-98	Professional liability insurance	2,213				0												
45-99	**Sub-Total**	**4,789,276**		**11,448**		**0**		**285,455**		**1,518,534**		**2,874,808**		**2,000**		**2,000**		**2,000**
49	**Component total**	**5,237,932**		**17,746**		**1,392**		**292,183**		**1,523,591**		**2,876,604**		**35,500**		**45,500**		**40,500**
50	**MISCELLANEOUS**																	
53-01	Sundry	148,875		13,351		11,518		29,889		10,698		10,245		12,000		12,000		12,000
53-02	UNDP charges for services and other	6,978						0		0		0		900		900		900
53-99	**Sub-Total**	**155,853**		**13,351**		**11,518**		**29,889**		**10,698**		**10,245**		**12,900**		**12,900**		**12,900**
55	Administrative costs	1,626,518		36,539		157,229		140,757		41,566		367,374		497,438		60,590		53,520
59	**Component total**	**1,782,804**		**49,890**		**168,747**		**170,646**		**52,264**		**377,619**		**510,338**		**73,490**		**66,853**
99	**PROJECT TOTAL**	**16,811,276**		**373,945**		**763,878**		**1,071,336**		**2,141,829**		**4,343,838**		**1,741,586**		**1,315,238**		**1,029,101**
100	**COST SHARING**																	
101	Cost Sharing Governments																	
101-01	Argentina	1,296,052		167,402		0		487,132		0		122,238		41,052		41,052		41,052
101-02	Bolivia	975,670		43,924		43,105		344,060		63,265		52,959		57,569		45,776		45,776
101-03	Brasil	2,848,670		148,003		993,893		235,239		147,186		150,672		127,517		128,044		128,044
101-04	Chile	948,384		45,000		44,791		354,930		52,360		50,593		44,496		44,496		44,496
101-05	Colombia	1,097,480		67,201		412,394		0		73,166		60,388		46,842		46,842		46,842
101-06	Ecuador	963,737		35,000		328,951		65,598		62,116		58,880		52,042		51,992		51,992
101-07	Francia	917,244		42,178		323,572		0		62,951		114,683		44,806		44,716		44,716
101-08	Guyana	891,082		63,148		328,347		21,696		57,173		66,041		46,459		53,755		53,755
101-09	Paraguay	940,139		87,148		41,848		349,658		0		107,978		42,644		42,589		42,589
101-10	Perú	1,207,773		155,271		349,287		76,474		0		135,435		49,334		49,334		49,334
101-11	Suriname	901,621		111,164		29,983		281,233		0		0		269,260		51,392		51,392
101-12	Uruguay	1,027,385		29,971		333,134		66,541		63,516		58,240		51,952		51,911		51,911
101-13	Venezuela	1,220,999		80,000		87,033		382,230		70,580		56,119		43,666		43,626		43,626
101-14	Intereses y ajustes	521,054		847		2,612		91,567		360,961		4,600		0		0		0
101-15	Trinidad y Tabago	824,513		0		318,528		91,605		47,731		52,454		45,599		45,584		45,584

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		TOTAL	*------	2011	*------	2012	*------	2013	*------	2014	*------	2015	*------	2016	*------	2017	*------	2018
		USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD	M/H	USD
101-16	COCESNA	229,475		65,145		19,178		19,178		19,185		49,124		19,279		19,193		19,193
101-99	**Sub-Total**	**16,811,276**		1,141,402		3,656,656		2,867,141		1,080,190		1,140,404		982,516		760,300		760,300
109	**Component total**	**16,811,276**		1,141,402		3,656,656		2,867,141		1,080,190		1,140,404		982,516		760,300		760,300

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 2016 (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 2015 was completed by Argentina, Brazil, Chile, Colombia, French Guiana (France), Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela. 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, its objectives and scope were adequate and that they are being met adequately.

6.4 The Meeting exchanged opinions on the Project achievements and management, highlighting the active participation of all Project member States as positive lessons learned, as well as the continuous conduct of teleconferences to deal with REDDIG technical subject, which helped all member States in any decision-making. Regarding the opportunity for improvement, the importance that CNS staff count with practical training was indicated upon. In addition, a State expressed the possibility of granting States with more than one training fellowship per course.

6.5 Regarding the evaluation results of the progress of the Project in 2015, formulated by the States who completed the survey, it was informed that it received an average score of 4.3 on a maximum of 5, which in accordance with the respective scale means that the Project objectives were achieved in all cases.

APPENDIX A

Project Nº: RLA/03/901
Title: 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
Sección IV: Lessons learned

RATING SCALE	
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?**		**Assessment**
ARG	The project is coincident and in consonance with the priorities established in the NANP for aeronautical telecommunications.	4.5
BRA	Yes. The Project has fully met its objectives.	4.5
COL	Yes, the project is appropriate and according with the ANP.	4
CHI	Yes, the objectives of the Project are in accordance with the NANP.	4.5
FGY	Yes, the Project fits correctly our objectives.	4.5
PAR	The objectives of the Project are alined in accordance with the priorities of our State with regard to the National Air Navigation Plan.	4.5
PER	No comment given.	4
SUR	Yes.	5
TTO	No comment given.	4.5
URU	The objectives of the Project were developed and are in accordance with the priorities of our State and in accordance with the National Air Navigation Plan.	4
VEN	No comment given.	4
	AVERAGE	4.4

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 Air Navigation Plans?**		**Assessment**
ARG	The project reafirms the network as a regional multi-service platform, enabling to face commitments assumed in the Regional and Global Air Navigation Plans. In addition, it conducts to new dicussiones regarding the current Plans.	4.5
BRA	Yes.	4.5
COL	The Project directly responds to the objectives outlined by the Administration of the State and of the Region.	4
CHI	Yes, the Project responds and supports the commitments of our Adminsitration as regards the ANP, both regionally as globally.	5
FGY	Yes.	4.5
PAR	The Project firmly supports the commitments of our State regarding the regional and global air navigation plans.	4.5
PER	No comment given.	4.5
SUR	Yes.	5
TTO	No comment given.	4.5
URU	We consider that the Project responds and supports our Administration in the commitments assumed regarding the regional and global air navigation plans.	4
VEN	No comment given.	4
	AVERAGE	4.5

3.- Comments of the State(s) **Do you have any comments on the direction of the project?**		**Assessment**
ARG	The follow-up made regarding the implementation and interconnection of the various systems at the States is to be highlighted.	4.5
BRA	the coordination between the Regional Office and TCB has been effective, providing compliance to the chronogrammes.	5
COL	to date, it has appropriate and correct.	4.5
CHI	The direction of the Project meeds and is in agreement with the planned objectives.	4.5
FGY	No.	4
PAR	The direction of the Project is fully committed with the objectives of the Project and encourages participation.	4.5
PER	It is appropriate.	5

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS

I. EVALUATION OF CURRENT PROJECT

SUR	No.	5
TTO	No comment given.	4
URU	The direction of the Project complies with its objectives to our Administration's fullest satisfaction.	4.5
VEN	No comment given.	4
	AVERAGE	4.5

4.- Strategy and vision **Do you consider that the project meets your institution's strategy and vision that has at long term?**		**Assessment**
ARG	The project responds to the strategy and vision, in particular, for its promoting the technological innovation that permits the inclusion of new applications developed for the aeronautical telecommunications services.	4.5
BRA	Yes.	4
COL	Yes, as the technology and the new services dependent on investments are being implemented.	4.5
CHI	Yes, considering that the mission of our institution aims towards being an intelligent public service, of excellence and environmental responsibility, that contributes to the safe, sustainable and efficient development of the air navigation activity in the country.	4.5
FGY	With this network, the utilisation of new services is permitted.	4.5
PAR	It fully meets the requirements of our State.	4.5
PER	No comment given.	4.5
SUR	Yes.	5
TTO	No comment given.	4.5
URU	The project meets our Administration's long term strategy and vision.	4
VEN	No comment given.	4
	AVERAGE	4.4

5.- Project quality **What opinion deserves you the content of this project to achieve the expected objectives?**		**Assessment**
ARG	The conduct of an assessment to the project is to be highlighted, in addition to the efforts made to comply with the requirements and accompany in the process through the permanent updating on the basis of the technoclogical progress. This has facilitated the migration or change of the systems acquired by the State, with the inconveniences pertinent to each scenario.	4
BRA	Excellent.	4.5
COL	It is in agreement with the requirements of the Region.	4.5
CHI	It is appropriate and covers the requirements to achieve the objectives.	4
FGY	The backup ground backbone needs to be ameliorated.	3.5
PAR	The content of the Project is totally in accordance with the objectives.	4.5
PER	No comment given.	4.5
SUR	Meetings.	5
TTO	No comment given.	4
URU	The quality of the Project is within expectations to achieve the objective	4
VEN	Good coordination and very well structured in its development, implementation and installation, with specific objectives.	4
	AVERAGE	4.2

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?**		**Assessment**
ARG	The mentioned resources are appropriate.	4

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I. EVALUATION OF CURRENT PROJECT

BRA	Yes.	4
COL	To date, the established resources have enabled complying with the targets. These can vary in accordance with many external factors and new State needs.	4
CHI	Yes, they are appropriate.	4.5
FGY	Yes.	4
PAR	Yes.	4.5
PER	No comment given.	3.5
SUR	Yes.	5
TTO	No comment given.	4
URU	We estimate that the financial, physical and human resources established in the Project are appropriate.	3.5
VEN	No comment given.	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?**		**Assessment**
ARG	We consider that all parties that should be involved in the project are in it.	4
BRA	Yes.	4
COL	From the technology point of view, there is good participation but there should be relevant information from the oeprational part and that of the industry.	4
CHI	Yes.	5
FGY	Yes.	4
PAR	Yes.	4.5
PER	No comment given.	5
SUR	Yes.	5
TTO	No comment given.	4.5
URU	All parties involved are necessary, and actively participate.	4
VEN	No comment given.	4
	AVERAGE	4.4

8.- Project effectiveness **Is the project effective in costs compared to similar programs or projects?**		**Assessment**
ARG	The effects, expected on the basis of the costs and in comparison with similar programmes or projects, have been complied with and have an auspicious potential.	3.5
BRA	The Project has been very effective.	4.5
COL	Yes it has, particularly due to the cost-sharing which has favoured all States involved vs. the operational availability of the circuits.	4.5
CHI	Yes.	4.5
FGY	No comment given.	4
PAR	Yes.	4
PER	No comment given.	4.5
SUR	Yes.	5
TTO	No comment given.	4
URU	The effectiveness of the Project as regards costs, is in accordance with the expected results and th importance of its achievements.	4
VEN	No comment given.	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 completed activities.

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I. EVALUATION OF CURRENT PROJECT

BRA	No. Without additional comments.
COL	To date, none. Continuous observation should be made in order to restructure anything that neds it, or that its scope may vary.
CHI	None.
FGY	The Level 3 problem for Cayenne needs Level 3 to review the process between them, Intelglobe and Mediaserv
PAR	No. None.
PER	On the job training, taking advantage of the installation stage of the equipment. This training could be carried out in order that the CNS staff taking advantage of the equipment can use the various tools and/or management commends in the different equipment. Thus, the staff would be better familiarized with them.
SUR	No modifications to propose.
TTO	No comment given.
URU	We do not think that the objectives and scope should be modified, they can exceed expectations.
VEN	Not for now.

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS

I. EVALUATION OF CURRENT PROJECT

10.- Other information **Please provide any other information that may support or clarify your perception of the current project scope.**	
ARG	Topics such as a regional chairmanship, model changes as regards traffic routing, continuance on the basis of achieving to count with qualified technicians, should be discussed in due time.
BRA	No. Without additional comments.
COL	No. Without additional comments.
CHI	None.
FGY	No comment given.
PAR	No comment given.
PER	REDDIG II implementation is beneficial from the point of view of technology updating. Frame relay is replaced by the IP protocol, of more extensive use in the current communications equipment.
SUR	No information to add.
TTO	No comment given.
URU	As regards the scope of the project, it complies with its plan and is totally scalable as regards public and private international services.
VEN	No comment given.

II. ASSESSMENT OF OBJECTIVES COMPLIANCE

	1.- Project objectives **In terms of project management by ICAO, do you think that project objectives are being met?**	**Assessment**
ARG	We consider that the objectives of the project are being complied with.	4.5
BRA	Yes	4
COL	To date, they are in accordance with established requirements.	4.5
CHI	Yes. They are being carried out with professionalism and excellent management.	4.5
FGY	Yes	4.5
PAR	Yes	4.5
PER	No comment given	4.5
SUR	Yes	5
TTO	No comment given	5
URU	An appropriate management has enabled that the objectives be met.	4
VEN	No comment given	4.5
	AVERAGE	4.5

	2.- Project schedule **Do you think that project objectives are being met or have been met promptly in accordance with your expectations?**	**Assessment**
ARG	Being complied with.	3.5
BRA	Yes	4
COL	Yes, they are adjusted in accordance with the established schedules.	4
CHI	Yes.	4.5
FGY	Yes	4.5
PAR	Yes	4.5
PER	AMHS servers and administrative communications have taken an excessive time in their implementation. Some AFTN channels (analogue) were implementated correctly.	3.5
SUR	Yes	5
TTO	No comment given	4
URU	The objectives of the Project are met as per our expectations, overcoming delays in the operation of some services.	3.5
VEN	No comment given	4
	AVERAGE	4.1

	3.- Use of resources **Do you consider that in meeting the objectives are being used, or have been used, resources efficiently?**	**Assessment**
ARG	They are appropriate.	4
BRA	Yes	4
COL	They have been appropriately distributed.	4
CHI	Yes.	4.5
FGY	Yes	4
PAR	Yes	4
PER	No comment given	4.5
SUR	Yes	5
TTO	No comment given	4.5
URU	The resources have been efficiently used, in accordance with the achivements obtained.	4
VEN	No comment given	4
	AVERAGE	4.2

II. ASSESSMENT OF OBJECTIVES COMPLIANCE

	4.- Project cost **Do you consider that the costs relating to compliance with the objectives are or have been appropriate?**	**Assessment**
ARG	They are appropriate	4
BRA	Yes	5
COL	Yes, they have been appropriate, more so if the TRM variation is taken into account.	4
CHI	Yes, they have been appropriate.	4.5
FGY	Yes	4.5
PAR	Yes	4
PER	No comment given	4.5
SUR	Yes	5
TTO	No comment given	4.5
URU	Costs have been appropriate to meet with the objectives	4
VEN	No comment given	4
	AVERAGE	4.4

	5.- Major achievements **What are the main achievements of the project in relation to the expected results?**	**Assessment**
ARG	The projects has permitted converting the network to a multi-serv ice platform, generating a favourable and auspicious scenario for the ATS services. We understand that REDDIG II will strengthen this concept (multi-service platform).	4.5
BRA	The harmonization of the technical knowledge at all States, favouring a high availability of circuits and services.	4.5
COL	The main achievement has been permitting States the continuance and availability of the circuits and services established as per operational needs.	4
CHI	The implementation of REDDIG II and, particularly, the network's high availability.	4.5
FGY	Yes	4.5
PAR	The availability, the qualified technical group and the users' satisfaction.	4.5
PER	No comment given	4.5
SUR	The system is working as it should.	5
TTO	No comment given	4.5
URU	Besides the delays in the installation start-up, the planned stages have been met with, and with expected results.	3.5
VEN	Meeting the objectives in the targeted time. The uninterruption of the service during installation.	4.5
	AVERAGE	4.4

	6.- Major problems and their resolution **What are the main problems affecting the achievement of the expected results and how should them be resolved?**	**Assessment**
ARG	Even though the objectives are complied with, the logistics are still a challenge. In addition, it should be highlighted that the consortium presents inconveniences to attend and reach a timely solution to any problem.	4
BRA	Even though REDDIG II has very much improved, there are external situations to ICAO that still cause difficulties, such as bureaucratic paperwork at States, customs and others.	4
COL	The main problem that can present itself on the long term is the availability and handiness of spare parts in the event of failures.	4
CHI	The difference in times of the administrative process at each State.	4
FGY	The different languages could be a problem to solve some problems.	4
PAR	Delays occurred at some point during the customs stage, by part of various States.	4
PER	No comment given.	4
SUR	No problems to be mentioned.	5
TTO	There are still some technical issues to sort out. While they are not service affecting, more emphasis should be paid to them in a more timely manner.	4
URU	Some technical inconveniences have been solved by the provider, with certain delay.	3.5

II. ASSESSMENT OF OBJECTIVES COMPLIANCE

VEN	Without problems for now.	4
	AVERAGE	4.0

7.- Other comments **Please include other comments related to the compliance of project objectives.**	
ARG	It could be appreciated that there are marked differences between the commitment assumed by INEO and those assumed by Level (3). This marked situation has been an important factor in the achievement of the objectives.
BRA	No.
COL	No comment given
CHI	The objectives have been achieved with professionalism and dedication.
FGY	Using teleconferences is a good solution to have a good knowledge of other States problems, but using two languages (Spanish and English) is a source of time loss and incomprehension.
PAR	None.
PER	In spite that some services did not operate, such as the AMHS, some AFTN channels and some ATS services, which were duly informed and after tests that took many weeks, such asto the AMHS, at the end they operated correctly.
SUR	Online meetings are a good opportunity to bring up issues, to hear and to gie advice on how to address them.
TTO	No comment given
URU	The objectives have been achieved, thanks to the good management and administration of ICAO and of all the people involved in the Project.
VEN	No comment given

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	The time lapses to solve and the amount of staff assigned by INEO to this end, represent risks to the services passing though REDDIG II. The lack of commitment from Level (3) in providing an efficient network has been shown in specific examples pertaining to inconveniences with the routing, dealing of the QoS, timely responses, among other things. It is recommended to demand the tools requested in due time, and coordinate preventive maintenance tasks towards controlling that the QoS required are complied with, among other things.
BRA	No comments.
COL	In the long and short term, the network availability and its present services, for which continuous control and follow-up should be carried to its operation and components, both by the Administration and the staff in charge from each State.
CHI	Given the high network availability, the possible loss of experience from the staff operating and maintaining REDDIG II at each of the nodes. Keeping a training plan, updating of knowledge and constant communication between the staff working at the nodes. Equipment obsolescence, since during this time it has decreased and back-ups should be thought of.
FGY	The security problem needs to be taken in charge for the IP network.
PAR	With regard to the REDDIG II ground network, counting with the corresponding contact points in the event of failures, of both Level 3 and the local service provider, if sub-contracted, as is the case of Paraguay.
PER	No comment given
SUR	No events to add.
TTO	No comment given
URU	Internal or external factors can affect the result of the Project, but through a close communication between the technical areas, an appropriate training and technical-operational meetings, we can face these factors.
VEN	No comment given

II. ASSESSMENT OF OBJECTIVES COMPLIANCE

9.- Other information **Please provide any other information that may support or clarify your assessment regarding compliance with the objectives of the project.**	
ARG	No comments.
BRA	No comments.
COL	No comment given
CHI	No comment given
FGY	No comments.
PAR	None.
PER	The taking of corrective measures, such as the change of LNB as a first instance and as a diagnosis of failure to solve the freezing of the satellite modems, is important for the operation of the various network services and availability.
SUR	No information to add.
TTO	No comment given
URU	The excellent communication and relationship among all actors and the dedication of each to achieve all the Project objectives provides us with a global vision that improves our evaluation.
VEN	No comment given

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?**		**Assessment**
ARG	It is appropriate.	4
BRA	Yes	5
COL	Yes, it is appropriate since within the decision taking process there has always been consent from States, plus taking into account the plurality of the various technical and operational points of view of the people in charge domestically and the active participation at meetings that have taken place within the project.	4
CHI	Yes, it is appropriate.	4.5
FGY	Yes	4.5
PAR	Yes	4.5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	5
URU	the decisions taken have been appropriate and in agreement from all Project members.	4
VEN	No comment given.	4
	AVERAGE	4.5

2.- Products quality **Do you think that the quality of products elaborated is appropriate?**		**Assessment**
ARG	It is appropriate.	4.5
BRA	Yes	4.5
COL	Yes, it is appropriate.	4
CHI	Yes, it is appropriate.	4.5
FGY	Yes	4.5
PAR	Yes	4.5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4.5
URU	The quality of the products is appropriate, product of previous analyses and studies.	4.5
VEN	No comment given.	4.5
	AVERAGE	4.5

3.- Orientation **Do you think that there is compliance with guidance towards achieving the project outputs?**		**Assessment**
ARG	It is being complied with through the results obtained from the project.	4
BRA	Yes	4
COL	They are being met, since each State has been able to interact with the Region, as per the national and regional plans, with a cost/benefit pretty convenient to States.	4.5
CHI	Yes, they are being met.	4.5
FGY	Yes	4
PAR	Yes	4.5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4.5
URU	Yes, we believe we are directed towards excellent results.	4
VEN	No comment given.	4
	AVERAGE	4.3

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS

III. EVALUATION OF PROJECT IMPLEMENTATION AND PROVISION OF SERVICES BY ICAO

4.- Organization and prioritization **Do you think the organization and prioritization within the project is appropriate?**		**Assessment**
ARG	It is appropriate.	4
BRA	Yes	4
COL	Yes, it is appropriate.	4
CHI	Yes, it is appropriate.	4.5
FGY	Yes	4
PAR	Yes	4.5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4.5
URU	The organization and priorization of all decisions and activities have been appropriate.	4
VEN	No comment given.	4
	AVERAGE	4.3

5.- Change management **Do you think that the management of change and degree of flexibility in managing the project are appropriate?**		**Assessment**
ARG	They are appropriate.	4
BRA	Yes	4
COL	Yes, the changes adjusted to each State's reality have been appropriate, as well as the project management has been directed correctly with the changes that have presented themselves.	4
CHI	Yes, they are appropriate.	4.5
FGY	Yes	4
PAR	Yes	4.5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4.5
URU	The management during the change and flexibility developed have been appropriate and have enabled a correct management of the Project.	4
VEN	No comment given.	4
	AVERAGE	4.3

6.- Service to the State **Do you think that the service provided to your State is appropriate?**		**Assessment**
ARG	It is appropriate.	4
BRA	Yes	4.5
COL	The services and requirements that we have required from the project management have been appropriate and efficient.	4
CHI	Yes, it is appropriate.	4.5
FGY	Yes, except the lack of reliability regarding the ground backbone	3.5
PAR	Yes	4.5
PER	No comment given.	5
SUR	Yes	5
TTO	No comment given.	4.5
URU	It has coverred our State's needs appropriately.	4
VEN	No comment given.	4
	AVERAGE	4.3

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS

III. EVALUATION OF PROJECT IMPLEMENTATION AND PROVISION OF SERVICES BY ICAO

7.- Communication **Do you think that the level of communication within and outside the project is adequate?**		**Assessment**
ARG	It is appropriate.	4
BRA	Yes	5
COL	The level of communication has been effective and there have been very good communication channels.	4
CHI	Yes, it is appropriate.	4.5
FGY	Yes	4
PAR	Yes	5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4
URU	Since the start of the Project, we have kept and excellent level of communications, which is one of the strenghts of this Project.	5
VEN	No comment given.	4.5
	AVERAGE	4.5

8.- Conflicts **Do you believe that conflict management is adequate?**		**Assessment**
ARG	It is appropriate.	4
BRA	Yes	4
COL	There have been no conflicts, there has always been good communication with the Project.	4
CHI	Yes, it is appropriate.	4.5
FGY	Yes	4
PAR	Yes	5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4.5
URU	The correct management of conflicts has been solved in a professional manner and with appropriate management of their importance and priority.	4
VEN	No comment given.	4
	AVERAGE	4.3

9.- Use of resources **Do you think that project resources are being used efficiently to produce the expected results?**		**Assessment**
ARG	Yes, the resources are used efficiently.	4
BRA	No comment given.	4.5
COL	Yes, the resources within the Project have used efficiently and the control of expenses has been appropriate.	4
CHI	Yes, they are used efficiently.	4.5
FGY	Yes	4
PAR	Yes	5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4.5
URU	The resources of the Project have been efficiently used.	4
VEN	No comment given.	4
	AVERAGE	4.4

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III. EVALUATION OF PROJECT IMPLEMENTATION AND PROVISION OF SERVICES BY ICAO

10.- Relevance of mechanisms **Do you think that management mechanisms of the project are relevant?**		**Assessment**
ARG	Yes, they are relevant.	4
BRA	No comment given.	4
COL	Yes, there have always been appropriate and relevant mechanisms.	4
CHI	Yes, they are relevant.	4.5
FGY	Yes	4
PAR	Yes	4.5
PER	No comment given.	5
SUR	Yes	5
TTO	No comment given.	4.5
URU	They have been pertinent and notoriously positive.	4
VEN	No comment given.	4
	AVERAGE	4.3

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?**		**Assessment**
ARG	This projects permits all involved in the Region to actively participate and be able to materialize the proposals or ideas to improve the services. It is most important to highlight the support from all States.	4.5
BRA	Excellent	4.5
COL	The achievement of products and outputs, and the delivery of inputs have been appropriate and opportune.	4
CHI	Very good.	4.5
FGY	Good	4
PAR	Yes	4.5
PER	No comment given.	4
SUR	Very good	5
TTO	No comment given.	4
URU	The work plan has enabled a good management of the time frames during the whole process, improving management and administration.	4
VEN	No comment given.	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?**		**Assessment**
ARG	Yes, the are in line with ICAO directives.	4.5
BRA	Prefectly.	4.5
COL	The Project has been maanged as per the Region's plans, the activities have been correct for the compliance of the objectives.	4
CHI	yes, they are.	4.5
FGY	No comment given.	4.5
PAR	Yes	4.5
PER	No comment given.	4.5
SUR	Yes	5
TTO	No comment given.	4.5
URU	The activities and products developed by the Project align with the ICAO, Regional Offices directives, and the air navigation plans.	4
VEN	No comment given.	4.5
	AVERAGE	4.5

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III. EVALUATION OF PROJECT IMPLEMENTATION AND PROVISION OF SERVICES BY ICAO

13.- Other information **Please provide any other information that may support or clarify your assessment on products and services provided through the project.**	
ARG	The current potential of the networki, as a multi-service platform, plus the technological change, permit affirming that the exchange of services between States can continue.
BRA	No additional comments.
COL	The Project has been of great use both operationally and technically, since it has met all expectations particularly in the management of technology and the budgetary sustainability. It has been well managed by the project management.
CHI	No comment given.
FGY	No comments.
PAR	None.
PER	No comment given.
SUR	No information to add.
TTO	No comment given.
URU	The beneficiaries have been from all areas directly involved with the exchange of air traffic information, which aims towards a continous improvement of the services.
VEN	No comment given.

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 possibility of working with staff from other States to achieve satisfactory integration results is to be highlighted. The possibility to exchange experiences has contributed in solving services inconveniences between States. The experiences acquired and the possibility of continuing integrating the various systems among States.
BRA	The cooperation among States and the network's centralized coordination has provided a high quality to the services provided.
COL	Technically, there has been an efficient management regarding regional integration and the optimization of resources has been appropriate. The management in the unification of criteria at each State has been correct.
CHI	The possibility for an active particpation of the represntatives of each of the administratins. An appropriate scheduling of the activities and efficient work as regards meetings and decision taking, with respect and particpation of all actors. An efficient use of the teleconference facility.
FGY	The cooperation between States and the REDDIG Administrator.
PAR	The good communication through the use of teleconferencesfor the management of various situations and coordinations for the solution of problems.
PER	Coordinations using internet tools were of great help to become aware of the problems present during the installation stage, and therefore coordinate with INEO for their solution. The commitment of the Lima CNS staff to get actively involved in the installation of REDDIG made it possible that further information were obtained during the INEO training, and/or the manuals delivered by the latter, with regard to satellite modem, satellite link, OSPF routing
SUR	The REDDIG II training was a great help during and after the installation.
TTO	Good team work by all the States involved, and indeed the REDDIG Administrator.
URU	The results obtained are directly related with the excellent degree of communication and decication of all Project members, where the committee coordination meetings, the technical-operational meetings, the specialized courses, etc., are the reason for the Project's success.
VEN	That the system was installed in the beginning with a ground network.

2.- Opportunities for improvement. **Provide a brief description of the improvement opportunities identified during project implementation.**	
ARG	The above consideration, as regards the new REDDIG having equipment which is eventually of easy access locally when requiring spare parts or replacements, is to be reiterated. This, taking into account the difficulties in logistics which we have had to face.
BRA	No additional comments.
COL	In the case of the Colombian node, the transfer required to the new installations is affecting our State due to the costs involved and, with respect to the rest of the States, that the start-up and new operational trials to be required could affect them.
CHI	No comments given.
FGY	More efficient tests of the routing tables could be done for the acceptance tests.
PAR	The constant training to count with an effectively prepared technical team to face any problems.
PER	The CNS staff training aspect should be improved. During the 15-day training at Rio de Janeiro, various subjects were dealt with, but the time was not enough to look in detail the various topics, many of them pending clarification.
SUR	CISCO cours was advised by ICAO to REDDIG two participants.
TTO	No comments given.
URU	That all technical task carried out without the participation of the Project Administrator has not achieved the desired solution or same has been excessively delayed. We should always involve the Project Administrator any joint taks with other States or providers.

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS

IV. LESSONS LEARNED

VEN	No comments given.

3. SURVEY ON MANAGEMENT AND OUTPUTS INDICATORS

IV. LESSONS LEARNED

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	No comments.
BRA	No additional comments.
COL	Direct accompaniment of the Administration to the Staes where unscheduled situations could present themselves, affecting the operations and continuance of the services implemented in the network.
CHI	No comments given.
FGY	The securisation of the REDDIG network is the next step.
PAR	Keep the present strategy, since it has been perfected with the experience acquired during the course of the Project.
PER	In addition to a group training as such offered in Rio de Janeiro, advantage could be taken during the installation stage for an on the job training, in order that CNS staff has the opportunity to practice and/or apply what it previously learned during the training in general. Many doubts and confusions would be cleared.
SUR	It would be good to have more courses where mainly the practical part is provided.
TTO	No comments given.
URU	Keep the bonds obtained throughout the Project, increasing the exchange of experiences and technical information, and actively participating in all activities and opportunities this Project provides.
VEN	that, within the courses, advise regarding the new technologies applied in the network and the exchange of information for the circuits and systems without connection be provided, for the benefit of all the network members.

Agenda Item 7: **Other matters**

7.1 The Meeting considered upon the need that the following activities take place:

a) REDDIG II safety analysis;
b) Extension of the services monitoring; and
c) Study to analyze additional spare parts requirements for REDDIG II.

REDDIG II safety analysis

7.2 The Meeting deemed it important that a safety analysis be conducted to REDDIG II, to protect it from possible external interferences and that a common solution be defined for application at all REDDIG nodes. In this sense, an ad-hoc group was established, composed by Argentina, Brazil, Colombia, French Guiana (France), Paraguay, Peru and the Secretariat.

7.2 The group was invited to prepare material for its presentation at a first teleconference to take place during the week of 25 April 2016. The results obtained from this teleconference and any other that might be scheduled, would be presented at the Fifth REDDIG II Technical Operational Meeting (RTO/5).

Extension of the services monitoring

7.3 The Meeting deemed convenient that RTO/5 meeting analyzes the possibility of widening the REDDIG II monitoring scope at service level.

Study to analyze additional spare parts requirements for REDDIG II

7.4 In addition, the Meeting considered the need of carrying out a study to verify whether a greater number of spare parts would be required for REDDIG II. The initial study would be undertaken by the REDDIG Administration and presented at RTO/5 meeting.