

INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Regional Office

UNDP/ICAO REGIONAL PROJECT RLA/98/019
IMPLEMENTATION OF THE SAM DIGITAL NETWORK (REDDIG)

FIFTH MEETING OF THE COORDINATION COMMITTEE

(Lima, Peru, 26 – 28 May 2003)

Agenda Item 2: **Report on activities carried out**

**REPORT OF THE ACTIVITIES CARRIED OUT SINCE THE DATE OF THE LAST
MEETING OF THE COORDINATION COMMITTEE OF PROJECT RLA/98/019**

(Paper presented by the Secretariat)

Summary

In this working paper a summary of the activities carried out up to date since the fourth meeting of the Coordination Committee of project RLA/98/019, Implementation of the South American Digital Network (RCC/4) is being presented for the information of the delegates participating in the RCC/5.

1. **Introduction**

1.1 The third working paper has the purpose of presenting to the meeting the activities carried out by the project since the last meeting of the coordination committee RCC/4 up to the initiation of the NAT tests.

2. **Activities carried out by the project**

2.1. The principal activities carried out by the project in the period above mentioned are the following:

- a) Provisional site acceptance tests (PSAT) in the 15 REDDIG nodes.
- b) Technical assistance to the States in order to establish the dialling networks and plans of the ATS and Administrative oral circuits.
- c) Follow up of the pending activities resulting from the PSATs.
- d) Coordination and execution of the NAT tests.

PSAT tests

2.2. The PSAT (Provisional site acceptance tests) were initiated the last week of January 2003 and were concluded at the end of March 2003. Tests covered all the 15 nodes of the REDDIG according to the following sequence: SAEZ, SUMU, SGAS, SCEL, SLLP, SPIM, SEGU, SKED, SVMI, SGYC, SMPM, SOCA, SBMN, SBRF, and SBCT. Tests were carried out in coordination with the CAA, and results in each of the sites were registered in the document prepared for this purpose, and a copy; duly signed, was distributed to ICAO, the CAA and the contractor.

2.2.1 As a result of the PSATs, it could be noticed that the network is presently operating. However, it could be noticed that its operation presents some problems of global nature and others of particular nature, which should be solved before the start-up. In general, it could be stated that there are actions that should be effected by the contractor and also by the CAAs in order to achieve a timely implementation.

2.2.2 The following are the principal pending tasks:

- a) Adjustment of ATSD, ATSa and ADM networks: which covers the configuration of the CAA equipment in charge of the CAA technical personnel, and the development and testing of the new data base following the corresponding plan, developed during PSAT, and the adjustment of the network according the PSAT specifications in charge of the contractor.
- b) Adjustment of the AFTN network: in charge of the CAA, which covers coordination and configuration of the AFTN circuits of the AFTN switch systems to establish the TSD circuits.
- c) Replacement of damaged REDDIG equipment, in charge of the contractor.
- d) Operation testing of the geographic redundancy.
- e) Establishment of the backup network and of the disaster recovery network, in charge of the CAAs.
- f) Provision of documentation, in charge of the contractor.
- g) Solution of particular problems identified at the Node level.

2.2.3 In **Appendix A** of this working paper, a detailed report on the PSAT, results, and other pending matters is being presented.

2.2.4 In relation with the AFTN circuits, it could be noticed that in most of the sites the circuits have not been implemented, because in some cases circuit codes between AFTN centres have not been coordinated, and in others because no additional circuits are available, or because the equipment cannot be reconfigured, or interfaces are not compatible with the REDDIG.

2.2.5 Defective equipment was identified during the PSATs in some of the nodes. The contractor has the responsibility of replacing those equipments. In this regard, ICAO appreciates the effort and collaboration provided by the administrations of Brazil and Chile, which have permitted that the replaced equipment are presently available in the respective nodes at the least time possible.

2.2.6 Testing of geographic redundancy could not be carried out during PSAT due to lack of the necessary link between the NCCs. This test could be postponed until the NAT. ICAO appreciates the special deference that the administrations of Argentina and Peru demonstrated to establish the mentioned link, which would permit to continue with the testing and utilization of this function during the network operation.

Establishment of the ATS oral circuits and administrative networks

2.3. Technical assistance provided to the States by ICAO during the PSAT execution had as purpose to establish the corresponding circuits configuration and dialling plans for the equipment to be connected to the REDDIG. This activity was developed in complete coordination with the CAA and it was done taking in consideration technical as operational aspects.

Follow up of the PSAT tests

2.4. Follow up of the pending activities resulting from PSAT, in charge of the contractor and of the States.

Coordination and execution of the NAT tests

2.5. Regarding the NAT tests coordination and associated activities, ICAO provided information to the States about these tests as well as implementation programmes coordinated with the contractor.

2.5.1 Regarding this issue, visits of SEEE personnel to some REDDIG nodes were coordinated with the counterparts in order to solve hardware problems that were pending after the PSAT.

2.5.2 As informed to the CAAs, the NAT tests were coordinated with the contractor to also cover, besides the stability testing of the network, the testing of the solution of problems identified during PSAT. When finalizing this report, the NAT was going through the phase of testing the solutions given to problems. Through the fieldwork carried out, it could have been noticed that not all the administrations would have finished the pending tasks entrusted to them.

2.5.3 Other activity that would also be carried out during the NAT would be the optimisation of the use of the satellite segment.

3. Suggested action

3.1. The meeting is invited to take due note of the information presented in the present working paper in order to,

- a) review **Appendix A**;
- b) in order to achieve a timely implementation, it is necessary that the contractor as well as CAAs could carry out on established time the tasks indicated in the PSAT reports;

- c) spread the basic knowledge on the REDDIG operation among technical personnel in charge of communications equipment maintenance;
- d) in order to manage safely the nodes in a remote way from the NSC, the contingency network should be implemented in all the nodes as soon as possible and before the network start-up.

Appendix A

REPORT ON PROVISIONAL SITE ACCEPTANCE TESTS (PSAT)

1. General aspects

1.1. PSAT tests (Provisional Site Acceptance Tests) were initiated during last week of January 2003 and were concluded at the end of March 2003. Tests were carried out in the 15 REDDIG nodes, according to the following sequence: SAEZ, SUMU, SGAS, SCEL, SLLP, SPIM, SEGU, SKED, SVMI, SGYC, SMPM, SOCA, SBMN, SBRF and SBCT. Tests were carried out in coordination with the CAA and results were registered on document prepared for this purpose, distributing a copy of the PSAT document, duly signed by ICAO, CAA and the contractor.

1.2. PSATs were carried out without any delay. The duration of the tests in each of the sites in average was of 2 days, and during the execution of the same aspects related to supplied goods inventory, installation, operation tests of the different systems, users interfaces, and aspects related to the services to be granted by the REDDIG.

1.3. During the execution of the PSAT in each of the sites, training was granted to technical personnel of CAAs accompanying the tests, which generally included the tests explanation, the future use of these tests in the operation and maintenance of the network, the importance and meaning of the results obtained, and the way to carry out the tests in the field.

1.4. During the PSAT, the contractor identified and corrected certain problems appearing during the tests, and also VSAT transmission terminal could be verified and adjusted with the supplier of satellite communications PanAmSat. .

1.5. ICAO provided assistance to the CAA as necessary in order to establish the final configuration of the CAA equipment related to ATSD, ATSA and ADM networks, after which the corresponding information or the modification of the REDDIG database was provided to SEEE. In this regard, it is important to notice that the new REDDIG database should be loaded in each equipment of the switch and multiplexing system of the REDDIG nodes, and that the corresponding database can only be generated while information regarding every node is received from the CAAs, reason why the new database could only start being loaded after the conclusion of the PSAT in the 15 REDDIG nodes. .

1.6. ICAO also provided assistance to the CAAs in the coordination of the tests of the AFTN circuits of the REDDIG. In this regard, it has been noticed that one of the most important difficulties was the coordination for the assignment of the circuits' codes, as well as some other problems associated with the lack of capacity of the interfaces in the equipment of the CAA in some of the nodes.

1.7. Regarding the geographic redundancy of the NCC, this cannot be verified nor corrected during the PSAT in SPIM due to the lack of backup and coordination between the NCC. In order to carry out this test afterwards, within the period of the PSAT and after the NAT, the Lima Regional Office coordinated with SEEE and with the corresponding administrations in order to determine the possibility of activating the referred circuit.

1.8. Regarding the provision of the backup and disaster recuperation network circuits for the REDDIG, which is the responsibility of the CAAs, it has been noticed that the backup network alone has been implemented in some nodes, and, under this condition, it would not be possible to have the necessary network to attend contingency cases of the network. Likewise, the network for recuperation in case of disaster has not been implemented in all the nodes as required. The lack of these circuits would difficult the recuperation of the nodes since the NCC in case of failure of the satellite service.

1.9. After the PSAT in the Curitiba node was finalized, the team went back to Lima to carry out the pending tests in SPIM, being able to satisfactorily complete the pending RF tests. However, it was not possible to complete the geographic redundancy test of the NCCs due to the non-availability of the coordination circuit SAEZ-SPIM.

1.10. After the PSAT were finalized, a meeting took place in the ICAO Regional Office in Lima, where the project expert presented the activities executed and the future actions necessary for the project progress, which is sustained in the PSAT reports.

2. **Results of the tests**

2.1. During the implementation of the PSAT tests, the operation of the network could be observed and some technical problems of general and specific nature could be identified, which should be solved by the contractor and/or the CAAs.

2.2. Problems identified during PSAT could be classified as problems that affect the performance of the network (NPA) or as small problems that do not affect the performance of the network (NPNA). From a technical perspective, and taking in consideration the situation and activities to be developed, problems affecting the network performance should be solved by the contractor and/or the CAAs, as it corresponds, before the initiation of the NAT; and the solution of problems that do not affect the network performance could be postponed, in case being necessary, until initiating cutover (services transference).

General problems detected during PSAT

2.3 The problems of general nature that were identified during PSATs and that should be solved by the contractor or the CAAs, as it corresponds, are the following:

- a) Configuration of the ATSD, ATSA and ADM voice circuit networks (NPA)
- b) Numbering and transmission plan for the ATSA and ADM networks (NPA)
- c) Call set-up adjustment of the ATSA, ATSD and ADM networks (NPA)
- d) Configuration of AFTN circuits (NPA)
- e) Incomplete backup network (NPA)
- f) Limited recuperation network in case of disasters (NPA)
- g) NCC geographic redundancy non availability and lack of GPS connection (NPA)
- h) Power margin and relock of the network should be tuned up (NPA)
- i) Sporadic reports of communication interruption with SSPA in the management system (NPNA)
- j) WAAS circuits are not implemented (NPNA)
- k) Documentation and software (NPA and NPNA)
- l) Fuses kit and gaskets (NPNA)
- m) Labels for the cables of interconnection with the CAA equipment and ODU cables (NPNA)
- n) Change of fuses and labels for printers operating at 120V AC and connected to OLSON power distribution panels.

2.3.1 Regarding what is indicated in 2.3.a) through 2.3.c) for circuits ATSD, ATSA and ADM, these would affect the network performance.

- a) Lack of CAA circuits in most of the cases did not permit during PSAT the functional verification of all the supplied circuits.
- b) Regarding the time correction of the set-up according to what is indicated in the TSC, the contractor should adjust the bandwidth, use closed numbering and activate the ESM function.
- c) In order to elaborate the definite tables of the switching and multiplexing system, it was necessary to final configurations in each of the sites. This activity was developed in close coordination with the technical and operational personnel of the CAA, and the contractor; likewise, consideration was given to aspects related to the availability of circuits in the CAA equipment (voice switch, AFTN switch, communications terminals), to real communication needs in the Control Centre position, and to the availability of REDDIG circuits in the site. Based on the material developed during the PSAT, the contractor is presently in the position of developing a new database, loading it in all REDDIG

equipment, in order to proceed to verify it. It is important to note that, to be successful in this activity, it is necessary not only that the contractor completes this activity, but also that the CAAs complete the final configuration in their equipment and carry out on time the connections indicated in the PSAT. During the execution of this activity, it is planned that some minor adjustments take place, tending to optimise the network database.

2.3.2 With regard to what is indicated in 2.3.d), related to the need to configure AFTN circuits in the CAA equipment, this would affect the network performance. This activity, in general, is the responsibility of the CAAs, with the exception of the modification required for the configuration of the SGAS circuits in the switching and multiplexing system that would be in charge of the contractor. During the PSAT, most of the times the link of REDDIG point to point data, and it was possible only to verify the operational performance in some of the circuits due that not always the AFTN circuits of the CAA were available during the PSAT. In general, pending activities about this item would be related principally to activities in charge of the CAAs, which comprise the configuration of AFTN circuits, REDDIG connection and coordination of circuits identifiers for transmission and reception. In the nodes where there are new circuits to be connected to REDDIG, these should be connected and configured, and if possible, operating as pre-operational circuits. In those places where no new circuits to be connected to REDDIG are available, the operation of the new configuration to be used with the REDDIG should have been tested and verified.

2.3.3 With regard to what is indicated in 2.3.e) and 2.3.f), the lack of implementation of the backup network and the network for recuperation in case of disaster by the CAAs would affect the network performance in case of contingency.

2.3.3.1 With regard to the backup network, this should have been implemented with interfaces ISDN/SO in only 4 sites. However, no information is available regarding network services in said circuits, reason why operation of this network could not be verified during PSAT. Likewise, the high costs demanded by a digital LL in some sites could be noted. Given the present situation of the backup network, it seems that this network would not be available on the date planned for the transference of services, and the performance verification of the network would be limited.

2.3.3.2 With regard to the network for recuperation in case of disaster, it has been noticed that in many sites the line supplied by the CAA for this network is parallel to an administrative line or with a blocked access configuration through a PBX group with direct access to the extension. This configuration, in both cases, prevents a fluid link to the REDDIG MODEM in case the remote access from the NCC is required. During the PSAT, it was requested to the CAA that the line be independent from any other existing service, and, preferably, the directory number to be used should be new, to prevent the permanent activation of the MODEM and to avoid any blocking over the line of access to the MODEM due to administrative traffic or to other traffic caused by planning exchange.

2.3.4 With respect to what has been indicated in 2.3.g) regarding the lack of geographic redundancy of the NCC, the unavailability of this functional characteristic would affect the network performance in case of failure of the active NCC, requiring a manual control transference between NCCs. Geographic redundancy of the NCCs has the objective to provide tolerance to failures of the network in case of failure of the active NCC that manages the network, transferring automatically the control to the alternate NCC. Such as it was explained in Section 1 of this report, the implementation of redundancy requires that the coordination link SPIM-SAEZ is active. ICAO has been coordinating with the corresponding CAAs the activation of this circuit. However, within the PSAT time, it was not possible to activate nor to verify the redundancy operation due to the lack of coordination circuit (transparent bridge). This item should be considered as critical for the implementation of the network. The coordination circuit should have been established before the initiation of the NAT, preferably with at least one week of anticipation, in order to facilitate the contractor loading the configuration in the NCC, to verify it, tune it, and verify as well the protocols and routing tables by distance vector. Regarding the GPS, the contractor should connect them to the system.

2.3.5 The power and relock margin of the network, such as indicated in 2.3.h) should be tuned in order to maintain and optimise the operation limits of the network and, in this way, to prevent affecting the network performance. Regarding relock, boot files should at least be adjusted in order to maintain at minimum the offset associated to the terminal VSAT operation. The contractor should develop these activities before the NAT. Having in consideration the PSAT results, and the availability of extra power, it is possible to optimise the satellite segment exploitation.

2.3.6 The sporadic report of the interruption of monitoring communications and of the control with the SSPA, such as indicated in 2.3.i), does not affect the network performance. The contractor should correct, before the NAT, this problem basically associated with the software.

2.3.7 The WAAS circuits, such as indicated in 2.3.j), were not established due to the unavailability of these CAA circuits in the REDDIG most of the time. However, the physical existence of these ports could be verified in the REDDIG, as well as the type of connector Winchester V.35 supplied by the contractor. The lack of implementation of these circuits would not affect the performance of the network. An aspect related to the implementation of these circuits is that these should not be implemented as point-to-point circuits, reason why it is necessary to coordinate the new configuration and know the directions and masks of the network used in the WAAS. It seems that the implementation of these circuits, due to reasons herein explained, will not be possible before the NAT.

2.3.8 Site documentation, such as indicated in 2.3.k), has not been totally supplied by the contractor. The missing documentation that affects the network performance is related to the local configuration files to be able to reload the operational software in the nodes, as well as the factory coupling factors. The other missing

information is not critical for the NAT implementation, although it is necessary to give adequate maintenance to the network and optimise its operation. During PSAT, an inventory of the information available in the sites was done, and a list of documentation to be provided for each site by the contractor was forwarded to the contractor. The contractor, according to co ordinations made, should provide the missing documentation before the NAT.

2.3.9 With regard to the lot of spare parts for the sites (gaskets and fuses) indicated in 2.3.l), the lack of these spare parts do not affect the network performance; however, they should be supplies by the contractor before the NAT. Other aspect to be considered is the one related to the lot of spare parts bought for the network. Regarding this last mentioned lot, the contractor should have the spare parts available in the NCC before the services transference in order to be able to guarantee the availability offered for the network

2.3.10 Regarding what is indicated in 2.3.m), the cables for the interconnection between the CAA equipment (an average of 10 voice cables and 6 data cables) and the REDDIG rack, as well as the ODU cables (approximately 8 cables) are presently marked with non-appropriate material. The provision of labels similar to the ones used in the IDU cabling has been coordinated with the contractor. The contractor will supply the labels before the NAT.

2.3.11 Change of fuses and labels in power distribution boards for printers operating at 110/120 VAC, according to what is indicated in 2.3.n), this problem would not affect the network performance; however, it should be solved by the contractor before the NAT.

2.3.12 In Table No. 1, of **Appendix A** of WP/05, a summary of pending tasks related to the problems of general nature identified during the PSAT is being presented.

Particular problems detected during PSAT

2.4 This section describes the particular problems identified in some nodes during the development of PSAT, that should be solved the contractor and/or CAAs, as it corresponds.

Node of Ezeiza (SAEZ), Argentina

- a) RADAR circuit SAEZ-SUMU: the circuit was physically connected to the REDDIG and the physical protocol cover was verified. Due to the differences on the transmission speeds in the circuit, this has been modified to operate over two independent interface ports. The contractor should verify the operation of the link cover before the NAT.

- b) MODEM dial-up for COMPAQ management computer: the contractor will supply before the NAT the dial-up MODEM.
- c) MEMOTEC management software installation: the contractor should install the indicated software in the Windows management computer. After the PSAT, the CAA reported difficulties in the Windows computer, probably associated to HDD, the contractor was notified and will proceed to solve the problem.
- d) NCC software: printing functions should be set in the corresponding printer server.
- e) Backup network: ISDN is not available.

Node of Curitiba (SBCT), Brazil

- a) Failure in the supervision communication in the ODU: the contractor should correct this before the NAT.
- b) AFTN circuits: MODEM installed by CAA within REDDIG and AFTN concentrator. AFTN circuit with SGAS should maintain the same speed and configuration. CAA should investigate if the MODEM installed is capable of operating satisfactorily with SGAS circuit. The CAA should install MODEM cabling in configuration DCE-DCE.
- c) ATSD circuit SBCT-SUMU: the circuit could not be implemented as FXO-FXO.
- d) Backup network and network for the recuperation in case of disaster: ISDN circuit is not available, POTS circuit blocked.

Node of Manaus (SBMN), Brazil

- a) Failure of supervision communication in ODU: should be corrected by the contractor before the NAT.
- b) Offset frequency out of range in ODU chain: should be corrected by the contractor before the NAT.
- c) Backup network and network for the recuperation in case of disasters: ISDN not available, POTS with blocking. Upon the CAA request, the MEMOTEC ISDN port configuration was changed to support BRI line instead of PRI line (PRI line was initially requested together with analogical interfaces).

Node of Recife (SBRF), Brazil

- a) Linkway MODEM: should be replaced by the contractor before the NAT.
- b) Backup network and network for the recuperation in case of disasters: ISDN not available during the tests, although the CAA provided afterwards the information of availability of BRI circuit. POTS line not available.

Node of La Paz (SLLP), Bolivia

- a) Cable cutter antennas: would be provided by the contractor before the NAT, it is not considered as a problem that affects the network performance.
- b) Offset ODU Frequency Chain-A: would be corrected by the contractor before the NAT.
- c) Backup network and network for the recuperation in case of disasters: ISDN is not available. Low-quality POTS line, speed ralentized to 1200 bps to ensure remote communication.

Node of Santiago (SCEL), Chile

- a) Linkway MODEM to be replaced: The contractor should replace the equipment before the NAT. After PSAT the CAA reported problems in RF chain, the contractor was notified about the problem.
- b) Eliminate future obstructions o the antenna by the growth of trees: The CAA should cut the trees forming the perimetrical fence in order to avoid future obstructions of the VSAT antenna.
- c) Backup network and network for the recuperation in case of disasters: ISDN not available. POTS line in shared use with the administrative line.

Node of Bogotá (SKED), Colombia

- a) Synchronisation of Harris 2020 y Ericsson MD-110 switchboards: The CAA should establish and activate the synchronism hierarchy between both of its switchboards before the NAT.
- b) Power board: the CAA should reconfigure the cabling from the power board PDB according to what was indicated in PSAT report.

Node of Guayaquil (SEGU), Ecuador

- a) Access to the REDDIG antenna: Although that the CAA has medium-term plans to move the REDDIG antenna to the new building of the CAA, the present conditions of the access to the REDDIG antenna should be improved.
- b) Backup network and network for the recuperation in case of disasters: ISDN not available, CAA is coordinating with the Colombian CAA the possibility of using a circuit in the Colombian network. Independent POTS line not available.

Node of Cayenne (SOCA), French Guyana

- a) Coupling factor of the SSPA-B: would be studied and clarified by the contractor before the NAT.
- b) Frequency Offset of B chain and power margin will be studied and corrected by the contractor before the NAT.
- c) MODEM for AFTN circuits: The CAA has installed a set of MODEMS in the CRD in order to prolong the lines of the AFTN until the room where the AFTN switching system equipments are installed. The CAA has used FXS circuits of the SIEMENS transmission system. The CAA should complete the installation of the MODEMS for the other circuits foreseen in the TSD and use DCE-DCE connection.

Node of Georgetown (SGYC), Guyana

- a) Replacement of reverse module of the UPS: The contractor should replace the reverse module before the NAT. This problem does not affect the performance of the network.
- b) ODU management failure: after the PSAT, the CAA reported failure in the ODU management; the contractor has been informed about this problem.
- c) The CAA should prepare the AFTN equipment and connect it to the REDDIG in order to establish the circuits foreseen in the TSD.
- d) Backup network and network for the recuperation in case of disasters: ISDN not available, IP network possibility is being studied with the contractor. POTS line not available.

Node of Asuncion (SGAS), Paraguay

- a) LNB cable cutters not installed: The contractor should install the cable cutters before the NAT.
- b) RF chain: After the PSAT, the CAA has reported problems in the switching of the RF chain. The contractor has been notified and will proceed to solve the problem before the NAT.
- c) Incoming tray for cables of signal and power and printer cable. The contractor should install the tray for the cables and supply the new cables for the printer.
- d) The CAA should install the power loop converters to V.24 or the AFTN, and supply the required configuration to connect the circuits to the REDDIG. The contractor should adapt the configuration parameters of the AFTN circuits.
- e) Backup network and network for the recuperation in case of disasters: the ISDN circuit and POTS were not found available.

Node of Lima (SPIM), Peru

- a) MODEM for computer COMPAQ: The contractor should supply the dial-up MODEM for the COMPAQ computer before the NAT.
- b) Damaged SSPA-B: The contractor solved the problem after the PSAT of Curitiba. Coupling factor still pending.
- c) GPS not installed: the contractor installed the GPS signal system.
- d) Failure in the installation process of the Linux Box: The contractor should update and supply the new proceeding, and verify it before the NAT.
- e) Pending NCC tests: the functions of the NCC should be verified before the NAT, as well as the geographic redundancy in case that the coordination circuit SAEZ-SPIM is available.
- f) Qsig signal: the contractor should activate the alert signal in the remote sites and correct the signal duration.

Node of Paramaribo (SMPM), Suriname

- a) Tool for pointing adjustment of the antenna: The contractor should provide before the NAT the above-mentioned tool.
- b) Change of fuses for the printer: The contractor should provide the new set of fuses and labels for the printer operation at 120 VAC.
- c) AFTN interfaces: The CAA should activate the AFTN circuits to establish the circuits foreseen in the TSD.
- d) Replacement of the security handles of the reverse module: The contractor should replace two security handles of the UPS reverse modules before the NAT.
- e) Connection to ground system: The CAA should connect the ground system to the power distribution board PDB before the NAT.
- f) Backup network and network for the recuperation in case of disasters: ISDN line and POTS not available.

Node of Montevideo (SUMU), Uruguay

- a) The contractor would provide the ODU fuses and rack as well as the adjustment bar of the antenna before the NAT.
- b) The CAA has presented its dialling plan during the PSAT for ATSa and ATSD, taking in consideration the available INDRA SDC-91 circuits.
- c) Before the NAT, the contractor should implement the timing of protection of the FXO ports to liberate the call, as well as the remote circuit associated to the FXO port (this last is part of the dialling plan).
- d) The radar interfaces (see SAEZ), and the access to the ISDN backup network should be verified by the contractor before the NAT, reason why it is required that the CAA completes the installation of the NT of the ISDN line and verifies the correct operation of this line with its services supplier.

Node of Maiquetia (SVMI), Venezuela

- a) The PSTN line for recuperation in case of disasters was not installed. The CAA should install before the NAT the PSTN line (independent) for cases of contingencies and recuperation of disasters.

- b) The tone of the bell to be supplied by the VCSS should be activated if possible before the NAT.
- c) The A chain of the FRAD should be reprogrammed as B chain of the FRAD with the same circuit configurations. The verification should be done before the NAT.
- d) Lines GNSS and ISDN are not available.
- e) The CAA should connect Rack 1, Rack 2, Rack 3, switch box, cables SSPA A and SSPA B to the power distribution board before 7 March 2003, such as specified in the labels of the cables and power board. The power board should also be connected to the UPS.

- END -