



REDDIG MANUAL

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INTRODUCTION

The *REDDIG Manual* was elaborated as result of Conclusion RCC 5/4 of the Fifth Meeting of the Coordination Committee of regional project RLA/98/019, which considered necessary to have available a complete manual in order to regulate the operation and maintenance of the REDDIG, with regard to its technical as well as administrative procedures.

In this sense, the present document provides the regulations that the REDDIG nodes should follow as procedures to operate the REDDIG and to maintain the quality of the services provided by the network.

These regulations apply to the normal nodes as well as to the control nodes, managing and non-managing NCC. The “*Operation & Maintenance Manual (Edition B/B1)*” supplied by the contractor constitutes the first part of this manual, specifically referred to the technical subjects of the REDDIG operation and maintenance. The second part of this manual is the one that regulates the administrative aspects of the network operation..

CONTROLS

The *REDDIG Manual* is distributed to all the Nodes of the South American Digital Network REDDIG. The distribution of the operative procedures is determined by their applicability. Each REDDIG node is responsible of taking care and updating the *REDDIG Manual* with the material issued on the subsequent dates that supersedes and replaces the content of the *Manual*. All the amendments to the *REDDIG Manual* would be done through the distribution to the REDDIG Nodes of the complete section of the revised material, which should replace the preceding version.

All changes should have previous authorization. Required changes should be submitted to the consideration of the management entity of the REDDIG, which should authorize or not the material submitted for consideration.

The *REDDIG Manual* is a controlled document, of which no alterations nor copies that have not been previously authorized should be done.

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TECHNICAL MANUAL

“Operation & Maintenance Manual (Edition B/B1)” from SEEE
(In this table, contents corresponding to the Nodes as well as to the NCC have been included)
(This version is only available in English)

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1. REDDIG TECHNICAL MAINTENANCE UNIT (TMU)

1.1 Requirement of personnel and technical resources in the nodes:

1.1.1 Each REDDIG node should count in its site with qualified technical personnel, trained to operate and to provide maintenance to the REDDIG network equipment (replacement of fuses, modules and units).

1.1.2 The following is the responsibility of each Administration for each REDDIG node for which it is in charge:

- a) That the technical unit of maintenance of the node, conformed by the qualified technical personnel be available at least 8 hours x 365 days, with the exception of the NCC, in which case the availability of personnel should be of 24 hours x 365 days;
- b) That technical personnel of the maintenance unit of the REDDIG node provide a quick answer in case being required by the NCC, inclusively out of the regular hours indicated by the administration;
- c) That technical personnel of the maintenance unit in the REDDIG node count with the necessary basic tools to do the maintenance of the node, a POTS telephone line for oral coordination email; and a free-hand telephone to carry out co ordinations in the room where the REDDIG rack is installed; and
- d) That a good-quality POTS line is available, for exclusive use of the REDDIG contingency network, which should be connected to the dialup MODEM of the REDDIG rack.

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2 RELATIONSHIP WITH THE NCC (Network Control Center)

2.1 General Aspects

- a) The languages to be used to carry out co ordinations between nodes and with the managing NCC will be Spanish and English.
- b) The maintenance units of the REDDIG nodes should follow instructions imparted by the managing NCC, in order to maintain and/or improve the network performance, and/or to solve some problem that could be affecting the normal operation of the network.
- c) The managing NCC only should do the changes of configuration of the REDDIG equipment. In case requiring a change of configuration of a node, this should be requested only by the authorized personnel, indicated in the technical form of the node, through an email request sent to the managing NCC, as explained later in paragraph containing the corresponding procedure (3.3.7).
- d) The telephone numbers for the REDDIG maintenance units should be established on the administrative network, and the principal maintenance telephone number should have the following format: NN01, where NN is the two-digit code assigned to the REDDIG node.

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2.2 Information Forms

2.2.1 Form A

It contains all the information required by the NCC to contact the node, the node should transmit this form to the NCC after each modification.

2.2.2 Form B

It contains all the information required by the node to contact the NCC, the NCC should transmit this form to the node.

2.3 Technical Forms

2.3.1 Form C

This form should be transmitted to the NCC after each maintenance operation (corrective or preventive). The form is still to be defined, but it should include the following information:

- a) Node name
- b) Date
- c) Name of the technician
- d) Description of the failure in case of failure
- e) Equipment which failed
- f) Corrective action taken

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3 GENERAL PROCEDURES

3.1 Procedure to determine and deposit cost-sharing contributions

3.1.1 Considerations to determine the amount of each contribution

3.1.2 Way and moment in which contributions should be deposited

3.1.3 Penalty for not depositing the committed contribution

Procedure to be developed

REDDIG MANUAL Procedure for the Cost-Sharing Contributions	Doc. No. RDG-SAM-006	
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3.2 Procedure for maintenance

3.2.1 The maintenance units of the REDDIG Nodes should be familiarized with the equipment and with its operation, as well as with the documentation and nomenclature used for describing the equipment.

3.2.2 Procedures indicated in the manual “*Operation & Maintenance Manual* (Edition B/B1)” of SEEE. Likewise, said routines and procedures could be consulted with the management NCC.

3.2.3 Short-terms tasks (to be coordinated with the NCC)

- a) Line for recuperation in case of disasters: daily
- b) Maintenance telephone: daily
- c) Backup circuit: weekly
- d) ATSa Hunting Group: weekly
- e) Administrative Hunting Group: weekly
- f) Link performance: weekly
- g) Change or replacement of the Standby chain: each 30 days
- h) Cleaning and inspection of the antenna: each 60 days
- i) Cleaning and inspection of the SSPA each 60 days

3.2.4 Long-term tasks (to be coordinated with the NCC)

- a) Link alignment
- b) Inside cleaning and inspection of the equipment

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3.3 Procedure to contact the NCC in case of failure or to request change of configuring

All the breakdowns that are produced in the network, including those related to the terminal equipment connected to the communications ports of the REDDIG, should be reported at earliest possible to the management NCC.

3.3.1 Agree on the language to be used for coordination, English or Spanish

3.3.2 Verify first the correct operation of the principal equipment and of the auxiliary equipment.

3.3.3 Verify and register the following points of the REDDIG equipment:

- a) UPS power
- b) Principal circuit switch, and distribution switches associated to the REDDIG rack
- c) IDU fuses panels
- d) Lights indicated in the IDU equipment (MODEM, FRAD, Hub switch and Linux box equipment)
- e) Information of the NMS screen
- f) Chain presently under operation
- g) Operational status and alarm reports
- h) Principal local equipment connected
- i) Failure analysis

3.3.4 Contact the NCC through the REDDIG maintenance telephone or through the PSTN public network (in case of problems in establishing the telephone calls, use the email as an alternative)

- a) Report the name of the node
- b) Report the name of the technician
- c) Report the failure and information delivery
- d) Follow the NCC instructions

3.3.5 After the technical intervention has been completed, send Form C to the NCC, containing the information of the technical intervention

3.3.6 The NCC should return the form: This form would be transmitted by the NCC to the node to confirm the operation service after a maintenance action from the part of the node or the NCC.

3.3.7 In case of requiring a change in the configuration of the node, this should be requested only by the authorized technical personnel indicated in the technical form of the node (Form A). The request should be forwarded through email to the managing NCC. The request should have a clear and complete description of the requested change, most favorable dates and times to proceed to the testing and recharge of the configuration. After the feasibility of changing the configuration is confirmed by the managing NCC, and if the network operation parameters are proven to be not affected, the managing NCC will coordinate with the administration the details of the implementation. In case that the request cannot be taken care due to technical limitation and/or service, the managing NCC would inform the administration about such result.

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3.4 Procedure for the management of spare parts and replacement of defective parts

- a) Failure report by the affected node and/or NCC
- b) Determining of the defective part by the NCC and affected node
- c) Information submission by the affected node to the NCC (Brand, Model, Number of Series, Quantity and Description of the Module if available) about the defective aprt, as well as the necessary information for the delivery of the replacement part (Ship to) via corresponding form.
- d) Coordination effected by the Administration of the NCC with the Contractor for “Return Material Authorization” (RMA)
- e) Delivery of the replacement part by the NCC Administration and the Contractor
 - During the warranty period
 - Availability of the replacement part in the spares lot
 - Non-availability of the replacement part in the spares lot
 - After the warranty period
 - Availability of the replacement part in the spares lot
 - Non-availability of the replacement part in the spares lot
- f) Delivery of the defective part by the affected node, Administration of the NCC and Contractor
- g) Installation of the replaced part by the affected node
- h) Costs would be in charge of the affected node and the Contractor
 - Transport of the replaced part
 - From the NCC to the affected node
 - From the Contractor to the affected Node
 - Nationalization of the replaced part
 - Transport of the defective part
 - New replace part
 - During the warranty period
 - After the warranty period
 - Repair of the defective part
 - During the warranty period
 - After the warranty period

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3.5 Procedure in case of contingency due:

- a) Cut due to sun outage
- b) Storms
- c) Node power failure
- d) Antenna failure
- e) Transponder failure

Procedure to be developed

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4 REDDIG USEFUL LIFETIME AND UPGRADING

4.1 The period of useful lifetime of the REDDIG is 10 years. Before finishing the useful lifetime of the REDDIG, it would be necessary to harmonize among the States the implementation of a new technology that would replace the REDDIG.

4.2 During the useful lifetime, the REDDIG equipment would be upgraded according to technological advances and according the technical requirements of the network.

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ANNEX A

Form: Technical Form for the operation of the REDDIG Node (RDG-TOF-01)

1. General Information of the REDDIG node

Item	Information
REDDIG Node	
Address	
Telephone (maintenance technical unit)	
Fax (maintenance technical unit)	
E-mail (maintenance technical unit)	
Telephone numbers of the REDDIG Administrative Network	

Note: provide the complete telephone number including the country and city codes, the local telephone number and, if it is the case, the extension number.

2. Information of the REDDIG Node Technical Unit

2 Name	Charge (2)	REDDIG telephone	Telephone (1)	Cellular

Notes

(1) Provide the complete telephone number of the public network, including country and city codes, local telephone number and, if it is the case, the extension number.

(2) If the person is authorized to request changes in the node configuration, a call saying, “The Administration should assign ...” should be included before the description of the person charge.

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4. REDDIG Node Technical Information

Item	Information	Comment
REDDIG dialup MODEM telephone number		
ATSa network access prefix		
REDDIG Administrative network access prefix		
Test number for ATSa incoming call		
Test number for ATSa outgoing call		
Test number for the Administrative network incoming call		
Test number for the Administrative network outgoing call		

Notes:

- (1) The access prefixes are only required in case of operation with PABX or VCSS.
- (2) The test numbers for incoming calls should correspond to the REDDIG network directory number (code of the node and local number).

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ANNEX B

Form: Technical form of the NCC (RDG-TOF-02)

1. The Network Control Centers NCC

1.1 The REDDIG network counts with two network management centers, known as NCC, located at the beginning of the network operation one in Argentina (SAEZ) and the other in Peru (SPIM). The management centers NCC provide each other support to achieve a high availability of the network. However, only one of them acts as active manager of the network (managing NCC) and the other as backup (not managing NCC).

1.2 The operation of the NCC centers has been planned to produce, in a programmed way, management alternation between the NCC in order to minimize the cut of services due to sun outage. Alternation of the NCCs is also planned to be produced in an automatic way in case of failure of the managing NCC.

1.3 During the first 6 months of the network operation, the managing NCC would be Lima (SPIM). Alternation date programmed for the alternation of the managing NCC would be informed to the maintenance units of the REDDIG with one month of anticipation.

2. Data of the management center NCC

2.1 NCC – SAEZ (Argentina)

Item	Data	Comments
Coordination Focal Point	* Javier Schenk Marcelo Torres	Tel REDDIG 20 57350 Tel REDDIG 20 57386
Technical support	Shift personnel	
Public network telephone	54-11- 4480-2362	
REDDIG maintenance teleph..	2001	Administrative network
e-mail	javiershenk@hotmail.com	

2.2 NCC –SPIM (Peru)

Item	Data	Comments
Coordination Focal Point	* Luis Alejos - ICAO José Luis Paredes-CORPAC	Tel REDDIG 60 16123
Technical support	Shift personnel	24 hours x 365 days
Public network telephone	(51) 1 515-3015	
REDDIG maintenance teleph..	6001, 60 16101	Administrative network
e-mail	lat@lima.icao.int	

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