

**INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Regional Office**

**REGIONAL PROJECT RLA/03/901
REDDIG SYSTEM MANAGEMENT AND SATELLITE SEGMENT ADMINISTRATION
TWELFTH REDDIG COORDINATION COMMITTEE MEETING (RCC/12)**

(Lima, Peru, 9-10 March 2009)

Agenda Item 3: Work plan for 2009

ACTIVITIES SCHEDULED FOR 2009

(presented by the Secretariat)

SUMMARY

This paper presents information related with the activities scheduled to be carried out by REDDIG Project RLA/03/901 in 2009.

1. Background

1.1 The main activities scheduled to be carried out in 2009 are the following: continue with the activities for the implementation of MEVA II / REDDIG interconnection; the 2009 training programme, hold the third technical-operational meeting, migrate the network to the IS-14 satellite, the REDDIG NCC and Management Centre operation alternation, implement new services, plan for the renewal of the whole REDDIG platform, and study the need to increase the bandwidth.

2. Description

Continuation of activities for the implementation of MEVA II / REDDIG interconnection

2.1 The activities related with the implementation of the MEVA II / REDDIG interconnection are indicated in the action plan contained in Appendix C to WP/03.

2009 training programme

2.2 In accordance with the REDDIG 2008-2010 Training Plan, prepared by the REDDIG Administration and the Ad-hoc Group, which was examined during RCC/11 meeting, this year the course Introduction to Satellite Communications and REDDIG Operation is scheduled to be held, whose agenda is shown in **Appendix A** to this working paper. This course has been foreseen to be held in the last quarter of 2009. The date and site of the event is expected to be determined during RCC/12 meeting.

Third technical-operational meeting (RTO/03)

2.3 There is the possibility of holding the third REDDIG technical-operational meeting in August, prior to the change of IS-1R satellite. The meeting will deal with aspects related with the network's migration to satellite IS-14, as well as the REDDIG maintenance and operation procedures, and the inclusion of new services.

Network migration to IS-14 satellite

2.4 In accordance with information provided by Intelsat, the current satellite in use by REDDIG, the IS-1R (previously, the PAS-1R) will be replaced this year by the IS-14 satellite, in the same orbit position. The information available in this respect is that the replacement will be carried out in September of this year. To that end, Intelsat will coordinate with the REDDIG Administration and will provide the transition plan procedures to follow.

2.5 In turn, before the satellite replacement, the REDDIG Administration will make necessary coordinations with the REDDIG nodes for the application of the procedures of the transition plan to follow.

REDDIG NCC and Management Centre operation alternation

2.6 Taking into account that the alternation of operation of the REDDIG NCC and Management Centre is a continuous procedure in order to keep the network's respective redundancy, it has been foreseen that the NCC and Management Centre operation be transferred this year for three weeks from Brazil to Argentina, at a date to be determined within the second semester of 2009.

Implementation of new services

2.7 During 2009, the implementation of new services as results of MEVA II / REDDIG interconnection are scheduled, such as radar data and flight plan exchange due to the automation activities planned to be implemented in the Region, and the start-up of AMHS International circuits among different States of the Region.

2.8 It is important to highlight that the implementation of new services with an optimized use of the necessary band width, will determine the future projection of REDDIG's satellite band width.

Plan for the total renewal of the REDDIG platform

2.9 The REDDIG Administration, taking into account the current situation of the equipment composed by the REDDIG nodes and described in WP/04, will elaborate a plan for the total renewal of the REDDIG platform.

2.10 The plan in question will take into consideration the most appropriate technology for the future REDDIG platform, and include a transition plan for its implementation.

3. **Action suggested**

3.1 The Meeting is invited to:

- a) Take note of the information provided;
- b) Analyze the activities scheduled for 2009, indicated in Section 2 of this working paper; and
- c) Any other consideration related with RLA/03/901 REDDIG Project regarding 2009, that the Meeting might consider necessary.

APPENDIX A

INTRODUCTORY COURSE TO SATELLITE COMMUNICATIONS AND REDDIG OPERATION

AGENDA

2.1 The satellites

- a. Fundamentals
- b. Orbits
- c. Geostationary satellites – Parameters
- d. Radiation pattern
- e. Frequency bands and services

2.2 Ground stations

- a. Antennas (Teleports, VSAT)
- b. Power amplifiers (HPA, SSPA)
- c. Upper (BUC) and lower (LNB) converters
- d. Modulators/Demodulators (MODEM)
- e. Band base (MULTIPLEXORES) and user interfaces
- f. Monitoring and Control (M&C)
- g. Power system
- h. Ground system
- i. The REDDIG station

2.3 Types of multiple access

- a. By frequency division (FDMA)
- b. By time division (TDMA) – Application in REDDIG
- c. By code division (CDMA)

2.4 Types of allocation

- a. Permanent (PAMA)
- b. On demand (DAMA) - Application in REDDIG

2.5 Design model

- a. Parameters and equations
- b. Link budget
- c. Technical performance
- d. Quality of service (QoS)

REDDIG operation

2.6 NCC/NMS

- a. Linkway system – General aspects and functions
- b. Main commands used
- c. Remote station monitoring and control (M&C)

2.7 Station operation

- a. Local monitoring and control (M&C)
 - Control cabling
- b. Station's "status" page
- c. Control pages:
 - SSPA, chain and redundancy

- d. PC Linux:
 - Direct access commands
- e. The Minicom programme via PC Linux and console port
FRAD
MODEM
- f. use of the applications TELNET, FTP
- g. Software support: CxAccess, CxTool
- h. Procedures PROC-FRD
- i. Procedures PROC-MOD
- k. Procedures PROC-SSP

2.8 Diagnosis of failures

- a. Procedures and actions
- b. Simulations

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