



Agenda Item 2: Report of the activities carried out to date since the last REDDIG Coordination Committee meeting

AIR TRAFFIC COORDINATION IN THE BOUNDARIES

(Presented by Brazil)

SUMMARY	
This working paper has the aim of presenting the RCC/14 meeting participants with the situation of the VHF-FM used for communications in the Brazilian borders with other South American States.	
References:	
<ul style="list-style-type: none">• RLA/90/900 project - <i>Implementation of the ATS speech circuits network in South America</i>; and• RLA/03/901 – <i>Space segment management and administration system</i>.	
ICAO strategic objectives:	<i>A – Safety; and C – Environmental protection and sustainable development of air transport.</i>

1. Background

1.1 In the 1980's, Brazil made coordinations Argentina, Bolivia, Colombia and Paraguay and, with the agreement of the referred States, purchased six VHF-FM sets to be installed in the border sites, in order to guarantee AFS communications.

1.2 The ICAO regional project RLA/90/900 - *Implementation of the ATS speech circuits network in South America*, was carried out between 1991 and 1993 and enabled States to start operating the trunk network of the air traffic services speech circuits plan.

1.3 Between 1998 and 2002, the RLA03/901 technical cooperation Project was developed to support South American States in the implementation of a SAM digital network (REDDIG). The referred network provided a great improvement in the quality of the above ATS speech circuits' network services.

1.4 Even though through REDDIG communications between the main air traffic control centres have been implemented, the boundary sites between Brazil and the countries indicated in para. 1.1 continue using VHF-FM equipment.

1.5 Nevertheless, the VHF-FM equipment is obsolete, discontinued and present a number of technical problems difficulting their maintenance due to spare parts availability.

1.6 Therefore, this working paper proposes including the current circuits in the border air traffic control units, in REDDIG.

2. Analysis

2.1 To avoid problems regarding telecommunications equipment failure and coordinations for the isolation of the situation among the various countries' telecommunications providers, VHF-FM sets were purchased by the Brazilian administration and installed in the air traffic units borders with Argentina, Bolivia, Colombia and Paraguay.

2.2 It should be highlighted that the VHF-FM equipment installation occurred in the 1980's, before the adoption of the ATS speech circuits network and of its successor (REDDIG).

2.3 VHF-FM equipment is currently installed at the following sites:

- a) Tabatinga (Brazil) – Leticia (Colombia);
- b) Guajaramirim (Brazil) – Guayaramirín (Bolivia);
- c) Corumbá (Brazil) – Puerto Suarez (Bolivia);
- d) Foz do Iguaçu (Brazil) – Cataratas (Argentina);
- e) Foz do Iguaçu (Brazil) – Guarani (Paraguay);
- f) Uruguaiana (Brazil) – Libres (Argentina).

2.4 REDDIG provides the SAM States, members of RLA/03/901 project, with an excellent availability since 2003.

2.5 In addition, the VHF-FM installed are obsolete and without possibility of spare parts purchasing in the market. With this, the equipment failure incidence is increasing and maintenance is becoming ever more difficult.

2.6 Another topic to be highlighted is that the use of the VHF-FM radiofrequency for AFS communications may not be considered as the most appropriate.

2.7 Hence, the possibility of using REDDIG for the transmission of ATS speech services is presented. Nevertheless, if it is decided to add the applications between the border units to REDDIG, a close coordination is necessary with the REDDIG administration as regards the band width to be used and the configurations necessary at the satellite equipment.

2.8 Taking into account that the border units are located far from each State's REDDIG node, the hiring of circuits among the sites is essential in order that the services of said satellite network can be used.

2.9 REDDIG has an average availability of 99,998%. Thus, if the use of REDDIG for the transmission of the speech applications among the border sites is decided upon, will the VHF-FM equipment deactivation become possible. International direct dialling calls will have to be used as a back-up for the possible technical failure of the main means.

3. **Actions suggested**

3.1 The Meeting is invited to:

- a) Take note of the information provided;
- b) Analyze the possibility of adding the circuits among the border sites, to REDDIG;
- c) Analyze the possibility of deactivating the current VHF-FM equipment and using international direct dialling calls in the event of technical problems in REDDIG; and
- d) Any other aspect related with the activities to guarantee communications among border units.