



**Agenda Item 3: Work plan for 2011**

**ACTIVITIES SCHEDULED FOR 2011**

(Presented by the Secretariat)

SUMMARY		
This paper presents information regarding activities scheduled to be carried out by RLA/03/901 project – REDDIG, during 2011.		
<b>Reference:</b>		
Report of the thirteenth meeting of the REDDIG coordination committee (Lima, Peru, 9-10 March 2010).		
<b>ICAO objective:</b>	<b>strategic</b>	<i>C – Environmental protection and sustainable development of air transport.</i>

1. **Background**

1.1 The main activities scheduled to be carried out during the 2011 are:

- a) Implementation of AFTN circuits in the MEVA II / REDDIG interconnection;
- b) 2011 training programme;
- c) NCC operation alternation and REDDIG management centre;
- d) implementation of new services in REDDIG; and
- e) study on the implementation of the new digital network (REDDIG II).

2. **Description**

***Implementation of AFTN circuits in the MEVA II / REDDIG interconnection***

2.1 To complete the MEVA II / REDDIG interconnection activities, described in Contract No. 22500187 between ICAO and SES World Skies (ex AGS), MEVA II communications service provider, SES should implement the final configuration of the FRAD equipment at the Bogota and Caracas REDDIG nodes and the Curacao, Panama and United States MEVA II network nodes. In addition, the States involved in the implementation of AFTN circuits through MEVA II / REDDIG interconnection that have yet to complete local installations between the AFTN system, or the AMHS gateway equipment, up to the respective REDDIG node, should do so soonest. Appendix B to WP/08 describes the technical configuration of the local AFTN circuits connections already implemented to the respective REDDIG nodes.

2.2 With the aim of analyzing the activities necessary to complete the implementation of the REDDIG AFTN circuits with United States, the REDDIG Administration has convened a meeting with United States and SES, to be held on 17 March 2011, during REDDIG RCC/14 meeting.

### ***2011 training programme***

2.3 With the aim of supporting the activities scheduled in the action plan for the implementation of a new digital network (REDDIG II), a seminar/workshop on new satellite and ground networks technology has been programmed, in which the industry and providers, and service integrators present the various technological solutions available in line with the basic guidelines specified in the study for a new digital network (REDDIG II). The seminar/workshop will take place in Lima, Peru, from 18 to 20 July 2011. In this respect, the Meeting should analyze the draft Agenda shown in **Appendix A** to this working paper.

### ***NCC operation and REDDIG management centre alternation***

2.4 Taking into consideration that the NCC operation and the REDDIG management centre alternation is a continuous procedure carried out to maintain the network's respective redundancy, it has been scheduled that this year the NCC operation and management centre be transferred from Brazil to Argentina for a three-week period, at a date to be determined within the second semester of 2011.

### ***Implementation of new services in REDDIG***

2.5 During 2011, implementation of new services are planned as a result of the MEVA II / REDDIG interconnection, such as exchange of radar data and flight plans, due to the automation activities planned to be implemented in the SAM Region and the operation of AMHS international circuits as among various SAM States. **Appendix B** to this working paper presents the action plans for the interconnection of AMHS and of the automated systems between adjacent ACCs.

2.6 In addition to the implementation of the above indicated requirements, WP/09 presented by Brazil, proposes that an analysis be made to the implementation of new ATS speech circuits in REDDIG. The ATS speech circuits to be implemented in REDDIG are the current ATS speech circuits specified in FASID Table CNS 1C that Brazil currently carries out with adjacent FIRs through VHF or UHF radio links. As a result of this analysis, it is expected that the Meeting draft an action plan for its implementation.

### ***Study on the implementation of the new digital network (REDDIG II)***

2.7 It is expected that by mid-2011, the structure of the new digital network (REDDIG II) will be approved, and that the process for the drafting of the terms of reference will be started upon (refer to the action plan in Appendix C to WP/07).

## **3. Actions suggested**

1.1 The Meeting is invited to:

- a) Take note of the information provided;
- b) Analyze the activities scheduled for 2011 and described in Section 2 and Appendices A and B of this working paper; and
- c) Analyze any other aspect related with project RLA/03/901 - REDDIG for 2011, which the Meeting might deem necessary.

**APPENDIX A**

**SEMINAR/WORKSHOP ON NEW SATELLITE AND GROUND NETWORKS TECHNOLOGY**  
(Lima, Peru, 18 to 20 July 2011)

**DRAFT AGENDA**

**Agenda Item1:** **REDDIG II digital network study** (*presented by SAM communications experts, REDDIG Administration and ICAO*)

- a) Study on services requirements in support of air navigation in the short, médium and long term
- b) Study on band width requirements for the implementation of new services in REDDIG II
- c) Study of the ground and mixed (satellite & ground) satellite communications networks models for REDDIG II

**Agenda Item 2:** **New satellite communications networks trends** (*presented by the industry and communications services providers*)

- a) New modulation and multiplexing techniques in satellite digital link protocols
- b) New multiple satellite Access techniques
- c) New coding techniques and error correction in digital links

**Agenda Item 3:** **New ground digital communications networks trends** (*presented by the industry and communications services providers*)

New modulation and multiplexing techniques in ground digital link protocols

**Agenda Item 4:** **Solutions proposed by the industry to the REDDIG II satellite digital network model** (*presented by the industry and communications services providers*)

Presentation of solution proposals by the industry and communications services providers to the REDDIG II digital network study

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## APPENDIX B

## ACTION PLAN FOR THE INTERCONNECTION OF AMHS SYSTEMS IN THE SAM REGION

ITEM	ACTIVITY	RESPONSIBLE	EXPECTED RESULT	STATUS	FINALIZATION DATE
1	2	3	4	5	6
1	Review of the ATN Regional Plan as regards AMHS implementation	Secretariat	Revised ATN ground applications plan (Table CNS 1Bb)	Completed	Jun 2009
2	Review and assignment of intra-regional routers IP addressing	Secretariat	Assignment of IP addressing	Completed	Jun 2009
3	Review of CAAAS addressing plan	SAM States	Revised CAAS addressing Plan	Completed	Jun 2009
4	Prepare interconnection protocol tests to determine bandwidth required for transmission of AMHS messages between MTAs through REDDIG	RLA/06/901 project CNS Expert	Protocol interconnection tests. A guide for the operational interconnection of AMHS systems was drafted	Completed	Dec 2009
5	Preparation of Guide for the Operational Interconnection of AMHS Systems in the SAM Region	RLA/06/901 project CNS Expert	Guide for the operational interconnection of AMHS systems in the SAM Region	Completed	Oct 2009
6	Drafting of a model MoU for the interconnection of AMHS	Argentina	Model MoU for the interconnection of AMHS	Completed	Oct 2009
7	MoU for the interconnection of AMHS currently implemented in the SAM Region: a) Argentina-Brazil b) Argentina-Chile c) Argentina-Peru d) Argentina-Paraguay e) Brazil-Colombia f) Brazil-Paraguay g) Brazil-Peru h) Chile-Peru i) Colombia-Perú j) Colombia-Panama	SAM States involved	MoU for interconnection of AMHS systems between SAM States having AMHS implemented.	Valid a), d), f) & i) Completed	b) Oct 2010 c) Oct 2010 g) Oct 2010 e) Jan 2011 h) Dec 2010 j) May 2011
8	Phase I Interconnection trials between MTAs of: a) Argentina-Brazil b) Argentina-Paraguay c) Brazil-Paraguay d) Colombia-Peru  Types of tests to carry out: Network transportation; Network connectivity; Message exchange; Preparatory phase.	Argentina, Brazil, Paraguay and REDDIG Administration	Interconnection trials between Argentina, Brazil and Paraguay MTAs	Valid a) network transportation and connectivity trials carried out with the Manaus node. MoU was updated, since Brazilian entrance node will be Curitiba. Network connectivity, and transport and exchange of messages tests will be repeated b) network transportation and connectivity, and message exchanges trials carried out. c) MoU was updated, as entrance node to Brazil will be Curitiba, and the network connectivity, and transport and exchange of messages tests will be carried out.	a) Dec 2010 b) Dec 2010 c) Dec 2010 d) Nov 2010

ITEM	ACTIVITY	RESPONSIBLE	EXPECTED RESULT	STATUS	FINALIZATION DATE
1	2	3	4	5	6
9	<p>Phase II Interconnection trials between MTAs of:</p> <ul style="list-style-type: none"> <li>a) Argentina-Chile</li> <li>b) Argentina-Peru</li> <li>c) Brazil-Colombia</li> <li>d) Brazil-Peru</li> <li>e) Chile-Peru</li> <li>f) Colombia-Peru</li> <li>g) Panama-Colombia</li> </ul> <p>Types of tests: Network transportation; Network connectivity; Message exchange; Preparatory phase.</p>	Argentina, Brazil, Chile, Colombia, Panama y Perú	Interconnection trials between AMHS systems listed in column 2 of this table.	<p>Valid</p> <ul style="list-style-type: none"> <li>a) Network transportation tests carried out</li> <li>b) Network transportation and connectivity tests carried out. Draft MoU was presented.</li> <li>c) Network transportation and connectivity tests carried out. Draft MoU was presented.</li> <li>d) Network transportation and connectivity tests carried out. Draft MoU was presented.</li> <li>e) No tests were carried out.</li> <li>f) Network transportation and connectivity tests carried out as per EUR AMHS Manual, Appendix E.</li> <li>g) No tests were carried out.</li> </ul>	<ul style="list-style-type: none"> <li>a) May 2011</li> <li>b) May 2011</li> <li>c) Apr 2011</li> <li>d) Apr 2011</li> <li>e) Apr 2011</li> <li>g) TBD</li> </ul>
10	<p>Operational interconnection implementation at the following MTAs:</p> <ul style="list-style-type: none"> <li>a) Argentina-Paraguay</li> <li>b) Argentina-Brazil</li> <li>c) Argentina-Chile</li> <li>d) Argentina-Peru</li> <li>e) Brazil-Colombia</li> <li>f) Brazil-Paraguay</li> <li>g) Brazil-Peru</li> <li>h) Chile-Peru</li> <li>i) Colombia-Peru</li> <li>j) Panama-Colombia</li> </ul>	Argentina, Brazil, Chile, Colombia, Panama, Paraguay and Peru	Operational implementation of AMHS systems.	<ul style="list-style-type: none"> <li>a) In accordance with MoU</li> <li>b) In accordance with MoU</li> <li>d) In accordance with MoU</li> <li>f) In accordance with MoU</li> <li>g) In accordance with MoU</li> </ul>	<ul style="list-style-type: none"> <li>a) Dec 2010</li> <li>b) Dec 2010</li> <li>c) Jun 2011</li> <li>d) Jun 2011</li> <li>e) Apr 2011</li> <li>f) Dec 2010</li> <li>g) Jun 2011</li> <li>h) Apr 2011</li> <li>i) Nov 2010</li> <li>j) TBD</li> </ul>

ID	Nome da tarefa	Duration	Start	Finish	2007	'07	2008	'08	2009	'09	2010	'10	2011	'11	2012	'12	2013	'13	2014	'14
1	<b>Plan de Interconexión Región SAM</b>	<b>1370 days</b>	<b>Mon 4/21/08</b>	<b>Fri 7/19/13</b>																
2	Aprobación del Plan	1 day	Mon 4/21/08	Mon 4/21/08																
3	Creación de la Equipo de Gestión	1 day	Mon 4/21/08	Mon 4/21/08																
4	Ejecución	1 day	Mon 4/21/08	Mon 4/21/08																
5	<b>Reuniones de coordinación</b>	<b>650 days</b>	<b>Mon 11/3/08</b>	<b>Fri 4/29/11</b>																
6	SAM/IG/2	5 days	Mon 11/3/08	Fri 11/7/08																
7	SAM/IG/3	5 days	Mon 4/20/09	Fri 4/24/09																
8	SAM/IG/4	5 days	Mon 10/19/09	Fri 10/23/09																
9	SAM/IG/5	5 days	Mon 5/10/10	Fri 5/14/10																
10	SAM/IG/6	5 days	Mon 10/18/10	Fri 10/22/10																
11	SAM/IG/7	5 days	Mon 4/25/11	Fri 4/29/11																
12	<b>Establecimiento de MoU</b>	<b>293 days</b>	<b>Wed 9/16/09</b>	<b>Fri 10/29/10</b>																
13	Argentina - Uruguay	1 day	Wed 9/16/09	Wed 9/16/09																
14	Argentina - Brasil	1 day	Wed 9/16/09	Wed 9/16/09																
15	Argentina - Chile	10 days	Mon 10/18/10	Fri 10/29/10																
16	Brasil - Uruguay	1 day	Wed 9/16/09	Wed 9/16/09																
17	Brasil - Venezuela	1 day	Thu 10/21/10	Thu 10/21/10																
18	<b>Interconexión de Plan de Vuelo</b>	<b>641 days</b>	<b>Fri 7/30/10</b>	<b>Fri 1/11/13</b>																
19	<b>OLDI</b>	<b>592 days</b>	<b>Thu 9/30/10</b>	<b>Fri 1/4/13</b>																
20	EZEIZA-SANTIAGO	22 days	Tue 11/1/11	Wed 11/30/11																
21	BOGOTA - GUAYAQUIL	18 days	Mon 6/20/11	Wed 7/13/11																
22	BOGOTA - PANAMA	20 days	Mon 6/20/11	Fri 7/15/11																
23	BOGOTA - BARRANQUILLA	20 days	Thu 9/30/10	Wed 10/27/10																
24	BARRANQUILLA - PANAMA	20 days	Mon 6/27/11	Fri 7/22/11																
25	SANTIAGO - CORDOBA	22 days	Tue 11/1/11	Wed 11/30/11																
26	SANTIAGO - COMODORO RIVADAVIA	22 days	Tue 11/1/11	Wed 11/30/11																
27	AMAZONICO-BOGOTA	20 days	Mon 8/1/11	Fri 8/26/11																
28	LIMA - SANTIAGO	20 days	Mon 6/18/12	Fri 7/13/12																
29	LIMA - GUAYAQUIL	20 days	Mon 7/2/12	Fri 7/27/12																
30	LIMA - BOGOTA	20 days	Mon 12/10/12	Fri 1/4/13																
31	<b>DOC 44444</b>	<b>22 days</b>	<b>Mon 5/2/11</b>	<b>Tue 5/31/11</b>																
32	AMAZONICO - MAIQUETIA	22 days	Mon 5/2/11	Tue 5/31/11																
33	<b>AIDC</b>	<b>641 days</b>	<b>Fri 7/30/10</b>	<b>Fri 1/11/13</b>																
34	CURITIBA-RESISTENCIA	21 days	Mon 10/3/11	Mon 10/31/11																
35	CURITIBA - MONTEVIDEO	22 days	Wed 6/1/11	Thu 6/30/11																
36	EZEIZA-CORDOBA	20 days	Fri 7/30/10	Thu 8/26/10																
37	EZEIZA - MONTEVIDEO	65 days	Mon 10/3/11	Fri 12/30/11																
38	LIMA - AMAZONICO	20 days	Mon 12/17/12	Fri 1/11/13																
39	ASUNCION - CURITIBA	20 days	Mon 3/5/12	Fri 3/30/12																
40	ASUNCION - EZEIZA	20 days	Mon 3/5/12	Fri 3/30/12																
41	<b>Intercambio de Datos Radar</b>	<b>1370 days</b>	<b>Mon 4/21/08</b>	<b>Fri 7/19/13</b>																
42	<b>Conexión Directa al Centro - ASTERIX</b>	<b>1370 days</b>	<b>Mon 4/21/08</b>	<b>Fri 7/19/13</b>																
43	CORDOBA - SANTIAGO	22 days	Tue 11/1/11	Wed 11/30/11																
44	EZEIZA - SANTIAGO	22 days	Tue 11/1/11	Wed 11/30/11																
45	SANTIAGO - C. RIVADAVIA	22 days	Tue 11/1/11	Wed 11/30/11																
46	MENDOZA - SANTIAGO	30 days	Mon 6/11/12	Fri 7/20/12																
47	EZEIZA - PUERTO MONTT	30 days	Mon 6/13/11	Fri 7/22/11																
48	PUNTA ARENAS - C. RIVADAVIA	30 days	Mon 6/10/13	Fri 7/19/13																
49	AMAZONICO - BOGOTA	30 days	Mon 12/3/12	Fri 1/11/13																
50	CURITIBA - MONTEVIDEO	30 days	Tue 3/1/11	Mon 4/11/11																
51	CURITIBA - RESISTENCIA	21 days	Mon 10/3/11	Mon 10/31/11																
52	BOGOTA - GUAYAQUIL	30 days	Mon 12/12/11	Fri 1/20/12																
53	BOGOTA - PANAMA	30 days	Mon 12/5/11	Fri 1/13/12																
54	BOGOTA - BARRANQUILLA	30 days	Mon 4/21/08	Fri 5/30/08																
55	BOGOTA - LIMA	30 days	Mon 5/13/13	Fri 6/21/13																
56	BOGOTA - MAIQUETIA	30 days	Tue 1/31/12	Mon 3/12/12																
57	BARRANQUILLA - PANAMA	30 days	Mon 6/13/11	Fri 7/22/11																
58	BARRANQUILLA - MAIQUETIA	30 days	Wed 2/29/12	Tue 4/10/12																
59	LIMA - SANTIAGO	30 days	Mon 5/21/12	Fri 6/29/12																
60	LIMA - GUAYAQUIL	30 days	Mon 6/10/13	Fri 7/19/13																
61	LIMA - AMAZONICO	30 days	Mon 6/10/13	Fri 7/19/13																
62	ASUNCION - CURITIBA	30 days	Mon 12/3/12	Fri 1/11/13																
63	ASUNCION - EZEIZA	30 days	Mon 12/10/12	Fri 1/18/13																
64	MONTEVIDEO-EZEIZA	23 days	Tue 3/1/11	Thu 3/31/11																
65	<b>ICD Propietario</b>	<b>23 days</b>	<b>Tue 3/1/11</b>	<b>Thu 3/31/11</b>																
66	AMAZONICO - MAIQUETIA	23 days	Tue 3/1/11	Thu 3/31/11																
67	Inter-Centro ASTERIX 62,63 (TBD)	1 day	Mon 3/4/13	Mon 3/4/13																